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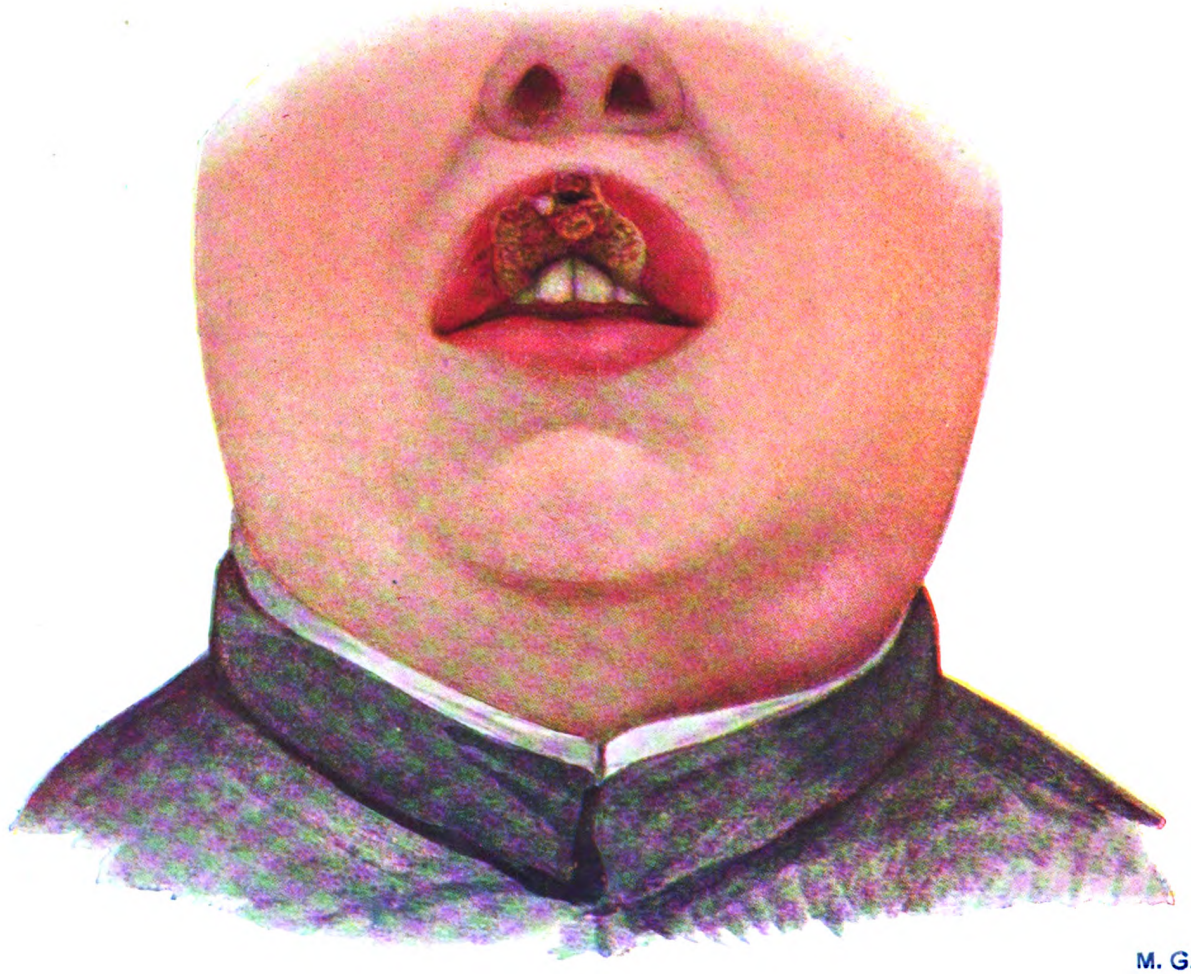
Fig. 1.

J. H.

TO ILLUSTRATE DR. NATHAN RAW'S CASE OF "MEMBRANOUS ŒSOPHAGITIS."

Fig. 2.



M. G.

TO ILLUSTRATE DR. W. J. COLLINS'S CASE OF "PHAGEDÆNIC CHANCRE OF THE LIP."

An Address

ON

CLINICAL VARIETIES OF BRIGHT'S DISEASE.

Delivered before the Islington Medical Society

BY JOHN ROSE BRADFORD, M.D., D.Sc., F.R.C.P. LOND., F.R.S.,

PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL.

GENTLEMEN,—When accepting the invitation of your secretary to deliver an address before your society it occurred to me that it would be more agreeable to the members if I selected a clinical subject, and therefore I propose to address you on some views as to the clinical varieties of Bright's disease and some of the difficulties that are met with in practice in the differential diagnosis of this disease.

Bright's fundamental discovery was that albuminuria associated with dropsy was sometimes dependent on gross disease of the kidneys and he recognised that the malady presented many forms both clinically and in the post-mortem room, although he himself considered the relationship, if any, existing between the different varieties of kidney lesion an open question. At the present day some pathologists hold the view of what may be called the unity of Bright's disease, looking upon the diverse renal lesions found after death as due to different stages in the course of one and the same malady. Thus, for instance, it has been thought that Bright's disease, after existing for a variable period in an acute stage, might become chronic and that in the latter state it was associated with the lesion known as the "large white kidney"; and that subsequently to this other morbid processes might lead to the shrinking of the organ with an overgrowth of fibrous tissue, leading ultimately to the development of a contracted kidney. According to this view the large white kidney and some forms of contracted kidney would only be stages in the evolution of one and the same malady, much in the same way as it has been held that atrophic cirrhosis of the liver may be preceded by a condition of so-called "hypertrophic cirrhosis."

There are many difficulties, however, in the way of accepting this view, and other observers have considered that the different forms of renal lesion found at the time of death are really independent of one another and not stages in the evolution of one and the same morbid process. Thus, to take the case of the liver again, there are many facts which would fit in with the view that alcohol may in one patient produce so-called "hypertrophic cirrhosis" and in another atrophic cirrhosis, and that the latter is not merely to be looked upon as the sequel of the former. It is possible that that form of Bright's disease which has been so often described as the large white kidney is the complete expression of one morbid process, and that the contracted kidney is an independent affection produced by another morbid process. The relationship existing between the different forms of Bright's disease which are found in the post-mortem-room is one not only of interest to the pathologist, but is of great importance to the clinician, since the prognosis and the complications, and even the treatment, of the different varieties are by no means the same, and it is a matter of great importance to form an accurate diagnosis if possible of the particular renal lesion that is present in any given case.

The different forms of Bright's disease may be classified in a great variety of ways; thus frequently they are classified according to their etiology—Bright's disease following acute diseases, that following exposure to cold, that due to the action of certain poisons such as alcohol and mineral salts, that associated with pregnancy, and so forth. On the other hand the disease may be classified according to the lesions found, and thus many varieties—parenchymatous nephritis, glomerulo-nephritis, and mixed nephritis—have been recognised. Of recent years, however, it has been more and more shown that Bright's disease and nephritis are generally, if not always, due to the action of certain poisons on the renal structures and that these poisons tend to produce their effects more especially on the glomeralar tufts and on the renal epithelium. Although some differentiation may be made in that certain poisons, like cantharidin and turpentine, have an especial action on the glomerular epithelium, and others, like mineral poisons such as lead, produce their effects more especially on the epithelial structures, yet no hard-and-fast line can be drawn between the two. This is more especially so from the fact that if the glomerular circulation is profoundly interfered with the nutrition of the epithelial structures of the convoluted tubules must necessarily become impaired, and therefore it is probable that no morbid process will produce an exclusive action on any single element of the kidney. Further, all lesions, both of the glomeruli and of the epithelial structures of the tubules, are accompanied by a variable amount of change in the connective tissue of the organ, and thus it comes about that glomerulo-nephritis, parenchymatous nephritis, and interstitial nephritis are really, strictly speaking, theoretical lesions—unless we mean by "glomerulo-nephritis" merely a condition in which the lesions in the glomeruli are rather more marked than those elsewhere. An etiological classification is of no great value to the clinician and therefore a clinical classification is often of more immediate use. If we classify the varieties of Bright's disease clinically we may recognise three forms—namely, the acute, the chronic, and the latent, understanding by the last the condition in which, notwithstanding the existence of very serious renal disease, symptoms of ill-health are either absent or very trivial until the development of sudden complications which draw attention to the existence of the underlying disease.

In recognising three clinical varieties of Bright's disease nephritis must be separated and also granular kidney. The relations of nephritis and congestion of the kidney to Bright's disease are very close, both as regards the morbid anatomy and also as regards the etiology, inasmuch as in acute congestion the lesions are essentially similar in character to those which are developed during the initial stages of acute Bright's disease. There is not only a close resemblance in the morbid anatomy of acute congestion of the kidney and the first stages of Bright's disease, but there is also a great resemblance in etiology, inasmuch as acute congestion of the kidney may unquestionably be produced by some toxic agents which also give rise to Bright's disease, and this is more especially the case in scarlet fever and other acute specific febrile processes. The albuminuria that is seen during the height of scarlet fever, typhoid fever, and pneumonia, formerly called a "febrile albuminuria," is in all probability dependent on the excretion of toxic bodies by the kidneys, just as Bright's disease is.

Although there is a great resemblance in the etiology, and to a certain extent in the morbid anatomy, between acute nephritis and acute Bright's disease, yet there are considerable clinical differences. The absence of dropsy in acute nephritis and its frequent presence in Bright's disease is one of the most striking of these differences. Further, although the same morbid process in scarlet fever may give rise to acute nephritis and to acute Bright's disease, the former is developed at an early stage of the malady, whereas Bright's disease when produced by scarlet fever generally occurs later or even during convalescence. The mere occurrence of the secretion of a concentrated urine loaded with albumin and perhaps containing blood is by no means sufficient for the diagnosis of acute Bright's disease, since these effects may be produced not only by acute nephritis but also as a result of embolism or infarction of the kidney dependent on heart disease or other causes. Although the main clinical distinction between acute nephritis and acute Bright's disease is the presence of dropsy in the latter and its absence in the former, this is perhaps not an absolute distinction, as anomalous cases of acute and even of fatal so-called "Bright's disease" may occur without the development of dropsy. This shows how difficult it is to draw a hard-and-fast line between acute nephritis and acute Bright's disease, and some authorities look upon the two as synonymous, acute Bright's disease being nothing more than acute nephritis. We may put the matter in another way by saying that we may recognise two clinical varieties of acute Bright's disease—one where the patient not only passes a scanty, highly albuminous, blood-stained urine, but where in addition he suffers from typical renal dropsy, and a second variety where the only effects produced by the malady are urinary, the urine being loaded with blood, albumin, and casts, &c. Provided that we recognise these two definite varieties

it is a matter of no great moment whether we restrict the term of acute Bright's disease to the one and call the other acute congestion of the kidney, or if we call them both acute Bright's disease and look upon the one that is unaccompanied by dropsy as generally more favourable both immediately and remotely than the first. The fact remains that these two forms are seen clinically, but notwithstanding that they may have a similar etiology the ultimate outlook to the patient and the course of the malady are very different in the two cases.

The difficulties in separating acute Bright's disease from mere congestion of the kidney are considerable, but they are nothing compared with the difficulty which is found in recognising the different varieties of chronic Bright's disease and the relationship, if any, existing between chronic Bright's disease and acute Bright's disease. Chronic Bright's disease is a far more common malady, both in hospital and in private practice, than the acute, and every practitioner must be struck with the frequency with which he sees patients suffering from chronic Bright's disease in whom the most careful interrogation fails to reveal any history of acute Bright's disease accompanied by dropsy. At the present day the old view that chronic Bright's disease was generally the sequel of the acute disorder is no longer held with the tenacity that it formerly was and it is generally recognised that a great many cases of chronic Bright's disease, if not the majority, are chronic and insidious from the outset.

Clinically two varieties of chronic Bright's disease may certainly be recognised. One is a condition in which the patient suffers from dropsy and passes a scanty and highly albuminous urine loaded with casts. This variety of the disease is familiar to every practitioner, and such patients usually come under observation either on account of the dropsy or on account of the anæmia and cachexia that are produced by the disease. In many such cases the onset of dropsy is the first symptom that attracts attention, and the suddenness of this onset may be such as to merit the term of "subacute." Probably the great majority of cases of Bright's disease accompanied by dropsy are of this type and certainly in my experience it is unusual to get a history of sudden onset with more violent symptoms, such as pain in the back, blood in the urine, &c. Although in the majority of cases the onset of the disease is gradual, it is, of course, undoubted that in a certain number of cases this condition follows more or less rapidly on acute Bright's disease and in a few it may result as a sequel of acute Bright's disease.

The other variety of chronic Bright's disease which is also exceedingly common is one where the patient presents no signs of dropsy and where, notwithstanding the fact that the urine is highly albuminous, the quantity is not greatly diminished and in some cases is considerably increased. In this second variety of the disease the patient comes under observation either on account of progressive weakness and anæmia and all the symptoms dependent on these or else on account of symptoms dependent on the disturbance of the circulation produced by the high tension and cardio-vascular changes associated with the disease. In many cases of this second variety of chronic Bright's disease the patient may present symptoms of very great impairment of nutrition that has occurred as a result of the renal lesion. Such patients, for example, are often greatly emaciated and may actually seek advice on account of the loss of flesh. In some cases pigmentation of the skin simulating that seen in Addison's disease is present. This second variety of chronic Bright's disease is much more likely to be overlooked—unless a routine examination of the urine is made—than the first, where the presence of dropsy and very often of gastro-intestinal symptoms immediately draws attention to the desirability of examining the urine. But where a patient comes under observation on account of loss of flesh or weakness and perhaps some headache from the arterial changes that have occurred, unless the urine be examined or the fundus oculi be looked at a very serious and grave disease may be overlooked.

These two varieties of chronic Bright's disease not only present different symptoms clinically, but the lesions found after death are also notably different. To the form of the disease where clinically dropsy is a prominent symptom the name of the "large white kidney" is usually applied. To the other form, characterised clinically by the absence of dropsy and the presence of grave nutritional and arterial changes, the term of "contracted kidney" or "contracted white kidney" is perhaps most applicable. This last condition, however, must be carefully distinguished from the true granular kidney which is not entitled to be regarded as a variety of Bright's disease and is really a degenerative lesion associated with widespread arterial changes.

We may, then, recognise three fundamental varieties of Bright's disease, all of which are common—viz., acute Bright's disease, chronic Bright's disease associated with dropsy, and chronic Bright's disease unaccompanied by dropsy but where serious nutritional disturbance is present. The term "large white kidney" was more applicable to the first variety of chronic Bright's disease in former years, when waxy degeneration was a more common phenomenon in the post-mortem room than it is now. Although it is difficult to get rid of the term "large white kidney" as descriptive of this variety of Bright's disease, as a matter of fact the really large white kidney is rarely seen in the post-mortem room at the present day, and one of the specimens originally described by Bright as an instance of this condition was one where amyloid changes were very marked.

In most cases of this form of Bright's disease the kidneys are found either of a normal size or else slightly above it, the cortex is increased in thickness, the capsule is thin and non-adherent, and on stripping leaves a pale, smooth, waxy-looking, and marbled surface, the pyramidal portions of the kidney being deeply congested. In the second variety of chronic Bright's disease the kidneys are always shrunken, often to a considerable extent, the capsule is thickened and slightly adherent, and on stripping leaves a coarsely granular but mottled surface, and the cortex is greatly diminished in amount, often measuring not more than one-eighth or one-sixth of an inch in width. In these cases of contracted white kidney arterial changes in varying amount are usually present. In many cases the heart is greatly hypertrophied and the arteries have undergone similar changes to those seen in advanced cases of granular kidney. In others the arterial and cardiac lesions are less marked, and the degree of cardio-vascular degeneration cannot be correlated accurately with the extent of the renal lesion, since in some cases the kidneys may be greatly shrunken and the arterial changes slight, and in others where the lesion has not advanced to such a great extent in the kidney arterial changes are more marked. The arterial changes in this variety of chronic Bright's disease can not only be often recognised clinically by the character of the pulse, but also by the state of the vessels in the fundus oculi. The importance of examining the optic disc in cases of suspected chronic Bright's disease cannot be over-estimated. In many cases a rigidity and wire-like appearance of the arteries of the fundus can be detected prior to the onset of albuminuric retinitis, although this also is common in such cases.

The most interesting problem presented by the cases of chronic Bright's disease where the kidneys are contracted is the relationship, if any, existing between this malady and the acute and the other form of chronic Bright's disease. As mentioned before, it was formerly thought by some observers that this variety of kidney lesion was only a late stage of chronic Bright's disease or a late sequel of acute Bright's disease. It may be that in a certain proportion of cases this contracted white kidney is the remote sequel to an attack of acute Bright's disease or even of acute nephritis. It may be that in some instances the acute and initial illness has been of so trivial a character as to have been overlooked. But even when these facts are borne in mind it is remarkable how frequently this contracted white kidney is seen in patients who not only give no history of any former attack of Bright's disease but in patients who give no history of any condition where dropsy was present or even of the occurrence of any acute specific disease. I have myself published a series of such cases elsewhere, all occurring in women under 30 years of age and all fatal, so that the diagnosis was confirmed by post-mortem observations, and where all investigations failed to reveal that these patients had suffered from any acute illness prior to the onset of the fatal illness, which in many cases apparently only lasted a few weeks. It would therefore seem probable that this form of Bright's disease might occur primarily without the patient having suffered from either acute Bright's disease or from what was called the "large white kidney." Many cases of this form of Bright's disease that have fallen under my own observation might in many instances be described as latent, inasmuch as they presented no serious symptoms of ill health until the onset of uræmia. In fact, this is the only variety of Bright's disease which is entitled to be described by the term "latent."

Many other differences might be described in the clinical

course of the two forms of chronic Bright's disease which I have sketched above, but the only other one to which I should like to draw attention is the frequency with which uræmic symptoms of a severe type are often associated with what I have described above as the "contracted white kidney." Uræmia in one or other of its forms may be met with in any destructive disease of the kidney, but a very large proportion of cases of acute uræmia, and even of so-called "fulminating uræmia," occur associated with the contracted white kidney. Many observers, including Fagge, have drawn attention to the frequency with which uræmia complicates renal disease in young persons and young adults—and this form of chronic Bright's disease is most frequently seen in the young. This affords another difference, if any more are required, between it and the granular kidney, which, as is well known, is usually seen in persons beyond middle life. Not only does acute uræmia occur with great frequency in cases of contracted white kidney, but in a considerable proportion of cases the patient seeks advice solely on account of the uræmic symptoms. In some cases the first sign of illness is the occurrence of violent uræmic symptoms of a maniacal type, sometimes a succession of epileptiform seizures, and not infrequently attacks of violent dyspnœa, occasionally of an asthmatic type. In a large number of cases the patient seeks advice for what may be called premonitory uræmic symptoms, such, for instance, as severe headache, and in more than one case that has fallen under my observation the patient has sought treatment for what would appear at first sight to be a severe migrainous headache, but where examination of the urine and of the fundus showed the presence of grave renal disease and where, in the course of a few days or weeks, severe and fatal uræmia occurred.

The uræmia that occurs with the contracted white kidney is not only remarkable for the suddenness of its onset and the violence of its symptoms, but in my experience it is also remarkably fatal, and I know of no instance with recovery where acute uræmic symptoms have developed in such a case. Acute uræmia occurring, on the other hand, with acute Bright's disease is by no means necessarily fatal, but where it occurs in association with chronic destructive lesions of the kidney it is a very grave symptom. Giddiness and rashes of a papulous, erythematous, or even of a bullous type are also not uncommon premonitory symptoms in such cases of the onset of uræmia, and although in most instances rashes occur when the uræmic symptoms are well developed in some they have preceded the onset of uræmia, and I know of one case where a young man sought advice on account of the occurrence of a papulous eruption, asserting that he was in good health, but in the course of a few days severe and fatal uræmia developed. In the great majority of cases the diagnosis of this form of Bright's disease is easy from the fact that it occurs in young persons, usually under 30 years of age, that it is unaccompanied by dropsy, that there are obvious signs of cardio-vascular changes such as cardiac hypertrophy, high tension pulse, and changes in the vessels of the fundus oculi; the urine is also abundant, of low specific gravity, containing a quarter or a third of albumin. In very exceptional cases the recognition of this condition may be difficult from the fact that apparently the urine may be free temporarily from albumin, and I have notes of two cases where the urine on examination failed to show the presence of albumin and where the patient came under observation for severe uræmia which was fatal, and where the post-mortem examination showed the presence of advanced and extensive disease of the kidneys.

Although we cannot look upon the contracted white kidney as simply a stage in the evolution of Bright's disease it is probable that it has a similar etiology to that of acute and of the other variety of chronic Bright's disease. Thus in some cases this variety of kidney is seen in persons who have been exposed to the action of lead, and in others a history may be obtained of the occurrence of scarlet fever or other acute disease during early life, but it must be confessed that in the bulk of cases the etiology of this affection is more or less unknown and that in the individual instances that present themselves to us we fail to recognise the cause of the disease. In a few cases more than one member of the same family have been affected. In this respect the disease resembles the true granular kidney, where the observations of Dickinson and others have shown that a family influence can be traced. Alcohol, although it plays a large part in the production of the other form of chronic Bright's disease, would not seem to be a very potent factor in the etiology of the contracted white kidney. I must confess that in the cases which have fallen under my own observation I have been unable in the majority of them to determine the cause, and in a considerable proportion one has been able to exclude alcohol and the occurrence of former acute nephritis. It is a form of Bright's disease which it is especially important to recognise owing to the fact that it does not produce any very marked or obvious symptoms until it is far advanced, and also owing to the fact that it tends to be complicated in such a large number of cases by acute and fatal uræmia.

I would conclude, therefore, by summarising the views that I have put before you shortly as follows. 1. That we may recognise two forms of acute Bright's disease, one characterised not only by the well-known urinary changes but also by the presence of dropsy, the other where dropsy is absent and where the distinction between the acute Bright's disease and mere congestion of the kidney is by no means easy. 2. That there are at least two forms of chronic Bright's disease—one where the patient secretes a scanty, highly albuminous urine and becomes markedly dropsical, the course of the malady being chronic and death occurring usually either from the mere water-logging of the tissues, or from the development of inflammatory complications, or from chronic or subacute uræmia. The second form of Bright's disease where the symptoms often run a latent course for an unknown period and where the patient ultimately seeks advice on account of very vague symptoms of ill-health, such as wasting, loss of strength, circulatory disturbance, or even where he does not seek advice until the onset of acute and fatal uræmia. In this form of the disease dropsy is absent, the urine is abundant and pale, and it contains a considerable quantity of albumin. It would seem that not only may chronic Bright's disease be chronic from the outset, but also that the two varieties of chronic Bright's disease are not necessarily different stages in one and the same morbid process, but represent rather the different effects of perhaps the same morbid process.

A SERIES OF CASES OF ACTINOMYCOSIS.

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WHY, it may be asked, should a few more cases of this well-known disease be added at the present time to the already over-burdened literature of actinomycosis? The answer is that it is still thought to be uncommon, and for this reason, and because it very closely simulates some other diseases, it is frequently overlooked. I have myself seen 13, as I think, genuine and two doubtful cases during the last 12 years, though before that time I had not recognised a single one. It is practically certain that this is only a question of having one's eyes opened. Within two years I have myself been treating a case for many months without finding out what was the matter, though I am keenly on the look-out for examples of the disease. I do not believe in the occurrence of new diseases. One cannot fail to be struck with the fact that when a new disease is described cases are promptly forthcoming from all quarters. It seems hardly credible that when I was a student Sir William Jenner used to tell us that no case of floating kidney diagnosed during life had, as far as he knew, been found to be such post mortem, and that he used to demonstrate to us a tumour which he thought was a floating kidney but which, when the patient died, turned out to be a uterine fibroid with a long pedicle. And now where is the third year's student who cannot diagnose one?

I well remember the first case of acromegaly that came before me. The disease had never been recognised in this country before, and as a matter of fact the first two cases were described on the same night by the late Dr. Hadden and by myself. Of course, we had all been seeing cases of acromegaly before, just as we had been seeing cases of osteitis deformans before Sir James Paget told us what it was, or myxœdema before we were taught about it by Sir William Gull and Dr. Ord. And so it is, I have no

doubt, with regard to actinomycosis. A few more years and everyone will be able to recognise it. It will take its proper place amongst other diseases, and, what is of more importance, it will be submitted to early treatment and then it is probable that a larger number of cases will be cured than is possible at present. It is a humiliating thought that we are seeing, but not observing, other forms of disease which will seem quite commonplace to our successors if not to ourselves and, what is worse, that we are treating them wrongly because we do not recognise their true nature.

I do not propose to say much about the organism or organisms that produce this disease, as I think that much confusion is apt to be introduced by, so to say, amateur descriptions. It is also pretty clear that the botanists and bacteriologists have not yet quite made up their minds about the exact affinities of the fungus or fungi in question. It is, however, important for the clinician to know one or two facts about it. And first it is well to know that the word "pseudo-actinomycosis," like the word "pseudo-tuberculosis," has crept into medical terminology. It should suggest to our minds that we may meet with cases presenting all the clinical characters of actinomycosis (I say nothing about tuberculosis) but in which what are recognised to be the characteristic appearances of the fungi are not seen. It is intended, however, to imply that identical, or almost identical, clinical appearances may be produced by separate organisms—a much more doubtful proposition. But we had better leave the botanists to settle whether, after all, the different forms do not belong to the same fungus, for we find them hinting at even wider and more unexpected relationships. It has, indeed, been suggested that streptothrix actinomyces and bacillus tuberculosis may be, as it were, the products of the same plant, in connexion with which the occasional clinical association of tuberculosis and actinomycosis must not be lost sight of.

To the clinician the first sight of the fungus is usually obtained in the pus evacuated from an abscess or in the expectoration, and it is visible to the naked eye as small round granules, sometimes very minute, sometimes larger, oftenest of a pale yellow colour but sometimes white, which are easily demonstrated by allowing the pus or expectoration to flow down the side of the test-tube while it is held up to the light or to run over a microscopic slide. They have been compared to particles of iodoform but they are obviously rounded and not of such a bright yellow colour. One should always be on the *qui vive* and get into the habit of looking at the pus from any abscess of doubtful origin from this point of view, but especially if, on opening the abscess, the amount of pus is less than was expected and the finger passes into an indefinite soft mass which bleeds with great freedom. The sensation imparted to the finger is very characteristic when one is accustomed to it. The hæmorrhage suggests what is the fact, that the growth does not interfere with vessels and is in itself very vascular.

If a yellow granule be placed unstained in a little water on a slide and the cover-glass be gently pressed upon it, it will be seen under a low power to be made up of rounded masses which are yellowish on the circumference but less coloured in the centre. Under a high power the centre is seen to consist of a densely felted mass of threads which is called the mycelium, and the circumference to contain the so-called clubs which, from their radiated arrangement, have given the name to the fungus. In some cases, however, these are not to be seen. It must not be supposed that the mycelium is made up of well-defined threads like the mycelium of a mould or a mushroom. It consists of extremely delicate branched threads in which a double outline is scarcely to be distinguished and which sometimes appear to be made up only of chains of cocci which has suggested the latest name for the organism, "streptothrix actinomyces." We are told that the organism is easily grown on various media and that it then consists at first of these threads, which after some time end in chains of streptothrix, which are supposed to constitute the spores of the fungus. At all events these if transferred to another medium bud out into the threads of the so-called mycelium. The clubs are very seldom if ever produced in artificial cultures. In old cultures bulbous ends to the threads are sometimes observed, and it is held that the clubs are only produced when the organism is growing under difficulties.

Although it is practically certain that the organism grows on cereals and grass very little is known of life-history as a vegetable parasite. It is, however, quite certain that it gains access to the bodies of men and beasts on pieces of corn or grass which either stick in the teeth, or mouth, or are swallowed or inhaled—the moral of which ought to be that we should give up the tempting habit of chewing fresh corn, sucking straws, or putting pieces of fresh grass into our mouths. We cannot help inhaling the dust of a threshing machine and are most likely exposed to the inroads of this pestilent organism in a thousand ways which it is impossible to guard against. Once settled in the mucous membrane of the mouth, œsophagus, alimentary tract, or respiratory passages it begins to grow and creates inflammation. Sometimes an ulcer is produced, sometimes a sort of tumour, and it is usually the latter condition that the surgeon is called upon to treat or the pathologist to examine. The tumour is of a pale yellowish colour, globular in shape, riddled with holes of a larger or smaller size containing pus, and very vascular, although it presents a superficial resemblance to the interior of a tuberculous or gummatous deposit. It infiltrates all the tissues with which it comes in contact, spreading in the intermuscular planes and to some extent into the muscles, extending far and wide into the cancellous structure of bones, occupying extensive portions of the solid viscera, and forming communications between the hollow viscera. It sometimes attacks the skin, sometimes it is met with in the lymphatic glands, and occasionally it is distributed to distant parts of the body by the vascular system exactly as in embolic pyæmia; it is then found in the brain or joints, or, indeed, any part of the body. When it occurs in accessible positions it may be completely eradicated by excision or incision and scraping. When it involves regions beyond the reach of surgery the termination is generally fatal. The only drug which appears to exercise any influence upon it is iodide of potassium, which should be given in large doses, 40 grains or more three times a day. It has been asserted that this is a specific which will cure all cases, but this is not the fact, as the experience of others besides myself unfortunately proves. The practice of trusting to this only if removal is possible cannot, therefore, be too strongly deprecated. A combination of surgery and medicine gives the best prospect of a cure.

The diseases with which actinomycosis is most likely to be confused are tubercle and syphilis. It is fortunate for the patient if it be mistaken for the latter, for under these circumstances it is likely that iodide of potassium will be administered and the surgeon may be—as happened in one of my cases—confirmed in his mistaken diagnosis by the successful result of treatment.

With these prefatory remarks I will pass to the cases that have come under my notice which illustrate most of the commoner and some of the rarer manifestations of the disease.

The first four cases affected principally the pleura.

CASE 1.[1]—A boy, aged nine years, was admitted into the Brompton Hospital for Consumption under Sir Richard (then Dr.) Douglas Powell on Oct. 8th, 1889. His father kept a dairy. There was a history of tubercle in the family. His illness began with languidness in June, 1888. This was followed by pain and tenderness in the right side in August, and then a hacking cough without expectoration supervened. On admission he was pale and anæmic with a hectic temperature. The right side of the chest was enlarged and there were two semi-fluctuating swellings, one in the fifth interspace on the nipple line, the other corresponding to the seventh, eighth, and ninth ribs in the posterior axillary line. The head was held to the right owing to a curve of the spine with the concavity to the right. The physical signs were ambiguous, but they suggested the presence of an empyema pointing at two places. The liver dulness was not increased downwards. As a puncture did not withdraw any pus an incision was made on Nov. 1st and carried through an intercostal space. It entered a soft, friable, yellow mass which bled freely, but no pus escaped. A little hæmoptysis followed. An examination of the material which had been withdrawn showed the fungus of actinomyces. The disease advanced rather rapidly, several fresh openings forming and the swelling increasing to a great extent. The boy became intensely emaciated. The superficial veins became clearly visible over his emaciated body. The liver became distinctly enlarged and he died on Feb. 26th, 1889. At the post-mortem examination the disease was found

[1] Transactions of the Royal Medical and Chirurgical Society, 1889, p. 179.

in greatest abundance in the pleura, from the second rib downwards and extending between the base of the lung and the diaphragm. It involved some of the ribs and the corresponding dorsal vertebræ. There were considerable numbers of nodules of the growth in the lower and middle lobes of the right lung which was tough and fibrous. There were some grey nodules resembling tubercle at the apex of this lung. A few nodules of actinomycosis were found in the left lung. There was a mass of the disease between the liver and the diaphragm and a focus as large as a small orange one inch below the upper surface of the organ. It is impossible to say with certainty where the primary disease started in this case, but we thought at the time it was probably in the pleura. At the time of the operation—i-e., before the matter was examined—I thought that I had incised a vascular sarcoma.

I did not see another case of actinomycosis till 1893. The following one occurred in 1898 and it is reported here as it resembles the preceding case more closely than any other of the series.

CASE 2.—A youth, aged 17 years, was admitted under the care of Dr. Percy Kidd to the Brompton Hospital on August 24th, 1898, complaining of a cough and of a painful swelling in the back. He had always lived in town, but had had a holiday in the country in June, 1897. There was no history of sucking straws or of chewing grass. His cough began about Christmas, 1897, and the swelling in the back was noticed three weeks before admission. He had always been thin. On admission he was a pale thin boy with a slight husky cough and but little expectoration. The notes record physical signs at the right apex strongly suggestive of early tuberculous mischief. There was a large fluctuating swelling between the scapula below its spine and the vertebral column, which interfered with the physical examination of this part of the chest. The temperature varied from 99·5° to 102·8° F. The urine had a specific gravity of 1012 and contained no albumin. On August 30th the abscess in the back was opened by Mr. B. Pollard and about three ounces of thick caseous material were withdrawn. The cavity was then thoroughly scraped with a sharp spoon which gave rise to some bleeding; it was then rubbed with iodoform and the wound was completely sewn up. Mr. Pollard tells me that from the appearance of the case, and perhaps also because he was told that the patient was tuberculous, he thought it was a tuberculous abscess, and was perhaps rather surprised that no deep sinus was found leading down to bone. Though the patient improved somewhat after the operation the temperature did not come down and it is recorded in the notes on Sept. 17th that there is no evidence of re-accumulation in the abscess, but the signs at the apex appear to be extending, which suggests that up to that time the case was supposed to be one of tuberculosis. By the beginning of October the abscess had begun again to discharge, and on the 19th the house physician noticed the characteristic yellow granules in the discharge, and, of course, immediately examined the sputum, in which similar bodies were discovered. It now became obvious that there was mischief in the lung beneath the abscess in the back, and at Dr. Kidd's request I undertook a preliminary operation on Nov. 16th with the intention of opening the lung at a later period. I took out about three inches of the third, fourth, and fifth ribs between the scapula and the spine and stitched the lung up to the parietal pleura. It was quite evident that the soft tissues and the bones were extensively implicated with the disease. There was not much hæmorrhage or shock, but the patient, who was at the time very weak and intensely anæmic, never really rallied from the operation and died nine days afterwards, on Nov. 25th. The temperature varied very little throughout the treatment of the case. At the post-mortem examination all the ribs from the first to the ninth, from the angles to the vertebral attachments, and all the corresponding vertebræ were implicated with actinomycosis, and were so soft that they could be cut with a knife. The pleura was much thickened and nearly the whole of the right lung was involved in the disease. I well remember that at the time of the post-mortem examination it was remarked that the appearances closely resembled those produced by tuberculosis; in fact, that, if we had not known what we were dealing with, they might almost have passed muster as being tuberculous. This is doubly interesting in connexion with the fact that when the patient was admitted the physical signs were considered to be so unequivocal that it was not thought necessary to examine the sputa for tubercle bacilli. Nothing else of importance was found except two or three nodules at the apex of the left lower lobe and a few glands at the bifurcation of the trachea which were neither caseous nor suppurating.

The next case is interesting as an illustration of how a case may be watched by numerous observers (including myself) and its true nature be revealed only accidentally at the post-mortem examination. It is also interesting as being the most rapidly fatal case that I have met with.

CASE 3.—A man, aged 38 years, married, was seen with Dr. W. Thyne of Barnet on Nov. 25th, 1899. His previous history revealed nothing of importance. It is not clear when he first began to be ill, but it was in the spring of 1899. In July Dr. F. T. Roberts diagnosed double pleurisy and the patient was sent to Ilkley. An abscess then formed over the head of the right radius, which was opened. In August the right pleura was aspirated and subsequently it was opened and a tube was inserted. No record of the nature of the fluid can be obtained. After the aspiration an abscess developed over the sternum. The patient returned to Barnet on Nov. 6th, having then a tube in the left pleura and two sinuses, the remains of the abscesses mentioned above. He was very weak and breathless, with a hectic temperature of from 99° to 103° F., and, in spite of a fair appetite, rapidly going down hill. He was seen twice by Dr. Hector Mackenzie who advised further exploration of the chest; but beyond affording somewhat better drainage no good result followed. I saw him on Nov. 25th, but did not see that anything surgical could help him, as it was clear that the cavity in the chest was very small and communicated freely with a bronchus. I was struck by a small square patch of absolute dulness to the right of the sternum but above the liver dulness. The patient became rapidly worse and died on Dec. 7th, the final diagnosis, *faute de mieux*, being empyema followed by septicæmia. Dr. Thyne obtained leave for a partial post-mortem examination and he forwarded to me a hard lump which corresponded to the patch of dulness to which I had drawn attention, saying that it looked like a tumour. This was submitted to microscopical examination and by good fortune a beautiful example of the fungus appeared in the section. Had it not been for this, a correct opinion of the case would never have been arrived at. Whether the disease affected the pericardium or not I cannot say; but it is most probable that it did, such affection being apparently not very uncommon.[2]

Another case which I have met with during the present year illustrates in the same way how easily the disease may be overlooked. It is a much more chronic one.

CASE 4.—A girl, aged 18 years, was sent to me by Dr. W. A. Gostling of Worthing on May 18th, 1900. She was fairly well until 1897, though there were points in her previous history strongly suggestive of tuberculosis. In June, 1897, she had slight hæmoptysis and suspicious signs at the left apex. In August, 1897, there was left pleurisy followed by empyema. This was opened by Dr. Frank Hinds, stinking pus being evacuated. The wound healed and she gained flesh. After six months the matter re-accumulated and for the next two and three-quarter years the wound opened and closed periodically, although Dr. Hinds had effected better drainage at a second operation by removing a piece of rib. Indeed, she had worn a tube for about half this prolonged period of time. For six weeks before I saw her there had been some fever, the temperature being from 99° to 101° F., but before that for a long time the temperature had been normal. She lost flesh and became very ill, and a large rounded and very tender tumour appeared in the left side of the abdomen; it was quite dull and was evidently incorporated with the abdominal wall. There were no physical signs at the left apex. I thought that it was probably a tuberculous empyema and that the abdominal swelling was an abscess burrowing down in the abdominal wall from the pleura; but the alternative diagnoses of tuberculous peritonitis or of caries of the spine were discussed. An incision into the tumour at once revealed the true nature of the case. The free hæmorrhage, the small amount of matter burrowing amongst the abdominal muscles and deeper parts, and the indefinite spongy surroundings of the abscess made us immediately examine the pus, and before the completion of the operation a typical specimen of the clubs was shown under the microscope in the theatre.

[2] Cf. Sir Dyce Duckworth: A Case of Acute Actinomycosis, Transactions of the Clinical Society of London, Oct. 12th, 1900.

The patient was put on large doses of iodide of potassium, taking as much as 40 grains three times a day, to which she at once responded. On a subsequent occasion the sinuses were again thoroughly scraped and before many months the wound had healed. She is now apparently well and has grown plump and strong, but there is still some induration beneath the abdominal scar and until this has disappeared I suppose we cannot say that the disease is completely eradicated. For this reason she is continuing to take the iodide of potassium.

The following six cases appear to have originated in the liver.

CASE 5.—A man, aged 45 years, was admitted into University College Hospital on March 5th, 1896, under the care of Dr. G. V. Poore. He had been ill since August, 1895, when he became unaccountably weak and breathless. He lost flesh and perspired at night. The appetite failed and presently a red patch appeared of about the size of the palm of the hand over the lower ribs on the right side. On Sept. 28th he was told that he had an abscess of the liver, and a few days later about four pints of offensive brown pus were evacuated from the abscess. He had coughed up about a pint of a similar material on the night before the operation. Five weeks after the operation he thought he was quite well. In December, however, he began to feel ill again and was taken to see the late Dr. George Harley who is reported to have said that he had diseased bone. He continued to get weaker and to be much troubled with cough up to the time of his admission, when he was obviously very ill. He was emaciated and had an anxious expression. There was a certain amount of bulging of the lower ribs on the right side and there was a sore covered with exuberant granulations in the mid-axillary line over the eighth rib. In the centre of this was a sinus into which a probe passed in various directions for about an inch, but no bare bone was felt. There was slight scoliosis, the concavity being to the right side. The movements of the lower part of the right side of the chest were much impaired and there was slight dulness at the right base, but nothing very marked. There was no apparent enlargement of the liver, which indeed could not be felt below the costal margin. The temperature was of a markedly hectic type, ranging from 99° to 103° F., and with slight variations it remained so until the end of the case. The urine presented no abnormalities. No diagnosis was made at first, though empyema was suggested; but when I was asked to see him (on March 9th) the characteristic yellow granules in the yellow pus escaping from the sinus at once explained the case. He was put upon iodide of potassium, the dose of which was rapidly increased to 25 grains three times a day, but he did not bear it well, and on March 29th it was discontinued. It was again given in smaller doses and was continued at intervals, as the patient could bear it, till the end of the case. Small doses of nitrate of silver were also administered at Dr. Poore's suggestion, and nitrate of silver was applied to the granulations, but no appreciable effect resulted from the treatment. On April 11th I removed all the superficial structures which were affected, and finding that the eighth and ninth ribs were involved I removed considerable portions of them and scraped, as far as I could, the cavity which appeared to be a part of the pleura beneath them. The case went rather rapidly from bad to worse. There were very troublesome diarrhœa, great emaciation, and an exaggeration both of the ascents and descents of the hectic temperature. The wound was scraped on several occasions, and various external applications such as iodine, iodoform, nitrate of silver, sulphur, and formalin were employed, but without effect, and the patient died on June 3rd. At the post-mortem examination a large mass of typical actinomycosis three inches in diameter was found in the right lobe of the liver, the oldest part of which was apparently below and was very closely adherent to the hepatic flexure of the colon which, however, showed no sign of ulceration. Extending upwards from this was a cavity partly between the liver and the lung and partly in the lung itself. The middle and lower lobes of the right lung were surrounded by a very much thickened pleura. Some ordinary pyæmic abscesses were found in the left lung and one in the anterior horn of the lateral ventricle of the brain on the left side.

CASE 6.—A man, aged 22 years, was admitted into the Brompton Hospital under the care of Dr. Kidd on Feb. 21st, 1899. He had been a healthy man up to six months previously when he had had an attack of diarrhœa which lasted three weeks accompanied by pain in the abdomen. He then remained well for three months when he had an attack of pleurisy on the right side. He was very ill for six weeks and from that time he began to cough and expectorate and was troubled with shortness of breath. On admission the patient was evidently very ill, with a hectic temperature varying from 98° to 102° F., with physical signs that appeared to indicate the presence of fluid at the right base, and some œdema of the legs. The urine had a specific gravity of from 1022 to 1025 and contained a thick cloud of albumin and hyaline and granular casts. Neither the liver nor the spleen could be felt, but the latter became obviously palpable in the course of a few days. A fluctuating swelling made its appearance over the left great trochanter, and there were three or four small round nodules in the skin of the forehead and scalp which felt very much like sebaceous cysts. The diagnosis of this case was very doubtful, though it was recognised that there were some serious renal mischief and fluid in the right pleura. On March 20th—a month after admission—the abscess over the great trochanter was aspirated and some iodoform emulsion was inserted. On the 25th I was asked to see him and found a large abscess in front of and around the hip-joint, the movements of which did not appear to be more impaired than the presence of this large collection of pus in its neighbourhood would account for. On incising it a large quantity—a pint or more—of brown pus escaped, in which we at once detected the granules of actinomycosis in great abundance. Even if I had not been on the look-out for them the character of the abscess as determined by the insertion of the finger would have made me almost certain of the diagnosis. The indefinite spongy walls, easily breaking down before the finger in all directions and bleeding very freely, are almost unmistakeable when they have been felt two or three times. The abscess did not appear to communicate with the hip-joint, but passed up towards the abdomen. The day after the operation (March 26th) the patient had two attacks of convulsions followed by loss of power on the left side of the body and accompanied by unconsciousness. On the 28th there was a similar but more severe attack. From this time he gradually took less notice and became less and less conscious. He had some more attacks of convulsions and there was some paresis of the left side. He evidently had some headache and there was some vomiting. The swellings in the scalp increased very much in size. The temperature retained its hectic type till April 4th and then was subnormal till the time of his death on the 10th. At the post-mortem examination a great variety of lesions were found, indicating apparently that the disease had become diffused throughout the body by a process of embolism such as occurs in embolic pyæmia. The largest and most obvious focus of disease was a globular mass as large as a fœtal head in the right lobe of the liver. It was therefore assumed that this was the seat of the primary lesion, but this was of course only a surmise. There was also a smaller nodule in the anterior part of the liver. The large mass extended up to the diaphragm which was intimately adherent to the liver and was invaded by the disease. The posterior quarter of the right lung was adherent to the chest wall and the mischief had extended up into the adhesions, involving as well the corresponding ribs and intercostal spaces (from the eighth to the twelfth) from the spine to the angles of the ribs, but neither the vertebræ nor the ribs were obviously softened. At the extreme base of the right lung there was a limited infiltration of small caseous nodules surrounded by broncho-pneumonia. In the outer part of the cortex of the right kidney there was a nodule of the disease of the size of a pea. A large suppurating gland on the bifurcation of the trachea had ruptured into that tube, and it was no doubt the source of the fœtid expectoration noticed before death. A careful examination was made of the abscess about the hip-joint. It extended widely into the intermuscular planes, but no communication with the joint could be discovered. The joint, however, contained a considerable quantity of semi-gelatinous puriform material, but as this was not collected with sufficient care to ensure that there was no admixture of pus from the surrounding abscess I cannot say whether or not it contained any of the fungus. A somewhat similar gelatinous material was found in the left knee-joints and the left metatarso-phalangeal joint of the big toe. Two circumscribed collections of pus beneath the peritoneum were also found, one immediately above the bladder in the recto-vesical pouch, the other in

the gastro-splenic omentum. Several superficial abscesses were also found. Some of them were the nodules noticed during life in the scalp; one was situated over the metatarso-phalangeal joint of the great toe of the right foot. Several abscesses of considerable size were found in the cerebral hemispheres; one large and two smaller ones were in the left frontal lobe and there was on each side further back a large abscess, that on the right side approaching the surface of the brain in the centre of the ascending parietal convolution. All the collections of pus, with the possible exception of that from the left hip, contained the fungus.

This case is one of the most instructive of the series, not only because it remained so long undiagnosed though under daily and careful observation, nor because even after it was diagnosed the extent of the lesions was not suspected, but chiefly because it illustrates so well the diffusion of the disease to distant parts of the body by means of the blood-stream. It is further interesting to note that although the secondary abscesses were met with in the brain, the skin, and the intermuscular planes the affection of the lung was very limited. The affection of the lung appeared to be by direct extension and there were none of the characteristic abscesses of embolic pyæmia in it.

CASE 7.—A youth, aged 17 years, was admitted into the Brompton Hospital under the care of Dr. Kidd on Nov. 18th, 1898. He is said to have been in good health until the present illness started with cough and pain in the right side about six weeks before his admission. He was stunted, pale, anæmic, and rickety. The left side of the chest was normal, except that the heart's apex was slightly displaced outwards. The right side bulged; it was dull throughout behind, and below the fourth rib in front, the breathing in the dull part being very weak and accompanied by râles. Expectoration was slight and purulent. The liver dulness extended one and a half inches below the margin of the ribs. There was frequent diarrhœa, though he had been constipated before admission. There was no albumin in the urine. The chest was explored without result, and on Dec. 4th the patient expectorated a collar stud. We thought at this time that he must have some bronchiectasis caused by the presence of the foreign body, but that probably there was a malignant growth as well. The temperature, which on admission varied from normal to 101° and 102° F., fell to nearly normal after the expectoration of the stud and remained so for many weeks. The patient walked with a marked stoop to the right because his spine was curved, as is usual, with the concavity towards the affected side. The disease steadily advanced and the boy became much weaker. In February the side became tender and a prominence appeared over the sixth rib on the right axilla, which was incised on Feb. 20th. No bare bone was felt but a track passed through an intercostal space into some internal cavity. There was very free hæmorrhage but very slight hæmoptysis after the operation. On April 18th an exploring trocar was passed through the eighth intercostal space in the mid-axillary line and, as pus flowed pretty freely, an opening was made which admitted the finger, as at the last operation, into a spongy honeycombed part of what I took to be the lung infiltrated with pus, but not in any large quantity. There was free bleeding, but not a trace of hæmoptysis followed the operation. I noted that this was very puzzling, as I could not think that I had penetrated the liver. By this time the liver had become very large and hard, the abdomen was distended and probably contained fluid, and there was a good deal of albumin in the urine. A needle was passed into the prominent part of the liver at the epigastrium but no pus was discovered. The patient rapidly became worse; emaciation was extreme and the superficial sinus became very obvious. The temperature rose and assumed an irregularly hectic type. There were some rigors and there were obvious signs of peritonitis over the liver and of fluid in the abdomen. The wounds showed a tendency to heal superficially, but on one occasion there was an escape of orange-yellow pus from one of them. He died on May 7th. At the post-mortem examination the base of the right lung was found to be everywhere adherent to the diaphragm, as also was the upper surface of the right lobe of the liver. The upper surface of the liver was separated in places from the diaphragm by small abscesses filled with creamy pus, one of which communicated with the opening which I had made in the fifth interspace, and another with the incision in the seventh interspace. No communication could be found between these spaces and the liver, but the liver substance beneath them was occupied by softened caseous, and in some places suppurating, cavities. The whole of the right lobe of the liver except the lower two and a half inches was riddled and honeycombed by caseous areas and suppurating cavites of various sizes, the cavities being obviously formed by the breaking down of the caseous masses, as they were lined by a similar yellow caseous material. A similar change was found in the upper half of the left lobe. The portal and hepatic veins were healthy, as also were the gall-bladder and bile ducts. The only other morbid appearance of importance met with was in the right lung, the lower lobe of which was in a state of condensation due to collapse, the bronchi being dilated. There was, however, no appearance of any change which could be attributed to actinomycosis.

The interest of this case depends upon the following facts. 1. The incisions which were always thought to have penetrated the lung really opened cavities between the diaphragm and the liver. It was, however, noticed on each occasion that little or no hæmoptysis followed and the small amount of discharge and the tendency to heal were remarked at the time. 2. We were at the time keenly on the look out for cases of actinomycosis, and I several times said that it could hardly be anything else, but repeated examinations of the pus failed to detect the fungus. 3. This is explained by the fact that the mycelium was more delicate than usual and that the fungus did not present the typical clubs; but on this point I will say no more as Dr. S. H. Habershon has described the appearances met with in this case.[3] It leads, however, to the remark that the clubs are not always met with even in cases in which they have at one time been easily demonstrated. I do not mean in cases that are recovering; that is, of course, what one would expect. In two at least of my series—Case 5 and Case 12—which terminated fatally and in which there was no lack of discharge it became more and more difficult and was at last impossible to discover any clubs at all, although they were seen in abundance during the earlier part of the disease. I would observe that if post-mortem room or museum specimens are found which to the naked eye look like the disease but in which no fungus is found it will not do to state positively that the case has not been one of actinomycosis.

CASE 8.—A girl, aged 15 years, was admitted into the Brompton Hospital under the care of Dr. J. K. Fowler on June 2nd, 1893. She had been suddenly seized a fortnight before with headache, vomiting, and severe pain in the right side. The pain was worse on drawing a deep breath, and she had slight shivering. On admission she had a cough and there was some slightly blood-stained expectoration. She was not anæmic or emaciated. The tongue was slightly coated. She had a hectic temperature varying between 101° and 104° F. and a very rapid pulse. The urine was normal. There were signs of fluid at the right base, but nothing abnormal was detected in the abdomen. On the 14th I opened the right pleura after excising a portion of the ninth rib in the scapular line and after passing through quite an inch of dense pleura a large cavity was reached which extended forwards for a considerable distance. We made no diagnosis of this case though numerous suggestions were made. The subject of actinomycosis was not so present to our minds as it is now. The patient was in no way relieved by the operation, but she became rapidly emaciated and intensely anæmic. The temperature remained the same till a few days before the fatal termination, which occurred from exhaustion on August 1st—that is, two and a half months after the first onset of the symptoms. At the post-mortem examination it was found that the posterior part of the right lung was firmly adherent to the chest wall from apex to base except at two places, one above (from the second to the fourth ribs) and one at the lower part. The upper of these was a localised abscess containing an ounce or two of thick creamy pus; the lower led by means of a sinus through the diaphragm into a large yellow caseous mass in the right lobe of the liver, measuring four inches vertically by three from side to side and two from before back. It closely approached the upper and anterior surface of the liver which was adherent at these parts to the diaphragm. There was a mass of caseous and calcareous glands at the bifurcation of the trachea. There was no tubercle in the lungs. The middle and lower lobes of the right lung were collapsed and carnified, a result no doubt of the empyema. Nothing else of importance was noticed at the post-mortem examination.

This case created considerable interest at the time. At

[3] Transactions of the Pathological Society of London, Nov. 8th, 1900.

first it was thought that it might be one of typhoid fever, but that idea was abandoned. No suspicion of an affection of the liver occurred, I believe, either to Dr. Fowler or myself. And at the post-mortem examination (at which I was not present) it was suggested that the mass in the liver was probably caseous tubercle. It was only on looking at the specimen afterwards and comparing it with the other cases that had occurred that the idea occurred to the resident medical officer of searching for the fungus. He discovered some spots containing what appeared to be mycelium, but it must in fairness be added that there is no microscopical proof of the conclusion to which the naked-eye appearances would seem to lead.

CASES 9 AND 10.—Two other cases must be briefly mentioned because, though I am personally convinced that they were examples of the disease, I have no actual proof of the fact. They both occurred at University College Hospital and I cannot find the notes of either. In both the liver was the seat of the mischief. One of the patients was a man, aged 26 years, and the other was a girl, aged 14 years.

In the next three cases some part of the intestine was affected.

CASE 11.—A man, aged 29 years, was admitted under my care into University College Hospital on March 18th, 1895, on account of a swelling in the right groin. He said that he had been healthy till 10 weeks before his admission, when he began to suffer from a dull aching pain in the abdomen, which gradually got worse, and after a week he was obliged to take to his bed. He then became very constipated and was obliged to resort to enemata. The constipation then passed off and the pain diminished, but he kept his bed for six weeks, after which he began to get about again. Soon, however, the pain returned and settled in the right hip, so that he again had to take to his bed and was sent by his medical attendant to the hospital. He looked then rather ill, and was slightly wasted. His tongue was furred and he had on the first night a temperature of 103° F. It had fallen to 100·2° by the next morning. His right thigh was flexed to an angle of 75 degrees, and there was evidently a large abscess in the right iliac fossa. It reached to within two inches of the symphisis and extended one inch below Poupart's ligament, but did not reach up into the loin. It was hard and painful but not tender. The urine was normal. I opened the abscess on the 20th by an incision one and a half inches internal to the anterior superior spine. It was apparently extra-peritoneal and contained a considerable quantity of feculent-smelling pus containing actinomyces. A large drainage-tube was inserted. The patient was put upon iodide of potassium and before long he took 40 grains of it three times a day, which he continued to do during the treatment of the case. The wound improved, but it was thought right to open it up and scrape it on three subsequent occasions. On May 25th he left the hospital convalescent and he returned afterwards with the wound completely healed. With few exceptions the temperature remained about normal; on one occasion it reached 101·8° and for a few days before he left the hospital the evening temperature approached 100°.

CASE 12.[1]—The patient was a man, aged about 30 years, whom I was asked to see by Dr. Fairbrother. He had previously been in good health. In 1893 he had at intervals of three months attacks which suggested appendicitis. In February, 1894, there was a still more definite attack of the same nature. In May, 1894, after a similar attack, a swelling appeared which occupied the right lumbar and iliac regions and there was obvious suppuration in the posterior part of it. I opened the abscess at this part and was impressed by the small amount of pus and the very free bleeding. I thought that it was probably a perirenal rather than a perityphlitic abscess, but I did not at that time guess its true nature. On seeing him three weeks afterwards, however, I was struck with the fact that the matter was burrowing in the subcutaneous tissues and inter-muscular planes and took some of it away for microscopical examination and found it teeming with the actinomyces. Afterwards the abscess pointed in front and I again opened it and scraped it, the hæmorrhage at this operation being alarming. The abscesses burrowed in various directions and the patient became intensely anæmic and emaciated in spite of the methodical administration of iodide of potassium and iodide of sodium and the constant irrigation of the sinuses with tincture of iodide. He died on Feb. 25th, 1895, and at the post-mortem examination it was found that the appendix had probably been the original source of the disease. Sinuses passed in many directions, but there was nothing at the time of death in the appearance of them to indicate that they were the result of actinomycosis. This is a most interesting observation because it may explain how cases may not only pass through the whole period of treatment without recognition, but may be examined by competent pathologists on post-mortem examination without any hint being obtained as to the true nature of the affection.

CASE 13.—A boy, aged 16 years, was admitted into the Brompton Hospital under Dr. Fowler on June 22nd, 1898, complaining of pain in the chest and abdomen and a lump in the left iliac region. His illness commenced in August, 1897, with sharp pains in the chest and abdomen which lasted three weeks and were attributed to acute indigestion. He then remained well until Christmas, 1897, when he was suddenly taken with vomiting which lasted off and on for 14 hours. After that the bowels were constipated for a week but were relieved by enemata. He then returned to work until a month before his admission into the hospital, when he was again seized with pains in the abdomen which laid him up for two or three days, since which time the pains had gradually become worse. Nothing abnormal had at any time been noticed with the motions. For a few days before admission he had observed that he could not straighten the left hip. He was a pale, anæmic boy, whose trouble was evidently abdominal, and it was at first supposed that he had some form of obstruction of the bowels. A very obvious lump was to be felt in the left iliac fossa and also per rectum. It extended as far back as the posterior third of the iliac crest and forwards to within one and a half inches of the spine of the pubes, and when I first saw him on June 27th distinct fluctuation in the swelling was to be obtained. In fact, the case was obviously one of abscess, and naturally a psoas abscess was suggested, but there were no signs of caries of the spine. The temperature varied between 100° and 102° F. The urine was normal. On June 27th I made an incision into the abscess and found that it extended up into the loin and down into the pelvis. It was extra-peritoneal but superficial to the iliacus muscle. It had, however, stripped the vessels away from the iliacus so that they came to be in the anterior wall of the abscess. The bleeding was considerable, but not enough to be dangerous. The pus was yellow and contained white particles in which the mycelium of actinomyces was seen without staining and in which the clubs were brought out on staining by Gram's method. He was at once given iodide of potassium, at first in five-grain doses three times day. By August 15th he was taking 15 grains and by the 30th 25 grains three times a day. The operation was followed by a lowering of the temperature to about 99°, at which it remained for 10 days or more. It then gradually resumed an irregularly hectic type, seldom, however, rising above 101°. At first there seemed to be some slight improvement, but the patient remained very anæmic and though at first he put on weight he afterwards became more and more emaciated. On Sept. 18th, the wound was opened up under chloroform by Mr. Pollard and scraped and iodoform was rubbed in, and on the 16th a swelling which had formed on the left side of the lumbar spine was similarly treated. No communication was found between this and the abscess in the groin. On Dec. 1st fæces were discharged through the wound in the groin and on the 12th there was a similar discharge from the wound in the back. This continued until the patient's death on the 21st. He had in the meantime become gradually weaker, but no other symptoms had developed. At the post-mortem examination it was found that the sinuses led to an extensive abscess which surrounded the rectum and led up alongside the sacrum, involving the sacro-iliac articulation of the left side, the coccyx, and the lowest four sacral vertebræ, as well as the disc between the sacrum and the fifth lumbar vertebra. It then tracked up the left side of the spine, involving the tissues in the neighbourhood of it but not the lumbar vertebræ, and extending as high as the ninth left rib. The dorsal vertebræ from the ninth to the twelfth were slightly eroded, and the corresponding ribs were slightly involved in the disease. The perirectal abscess contained fæces. All the viscera contained in the pelvis were matted together by old peritonitis, and the sigmoid flexure was coiled upon itself and drawn up to the right. At its lower part behind it was

[1] Reported in the Brit. Med. Jour., June 27th, 1896.

adherent to the abdominal wall, and here there was a large shallow ulcer exposing the muscular coat which presented no peculiar appearances. It was perforated in the centre, the opening communicating with the abscess. There were three small openings with yellow softened edges by which the abscess communicated with the bladder. The body was extremely emaciated, but beyond marked amyloid disease of the liver and spleen it presented no other abnormal appearances.

In the last two cases the mischief occurred in one in the face and in the other in the neck.

CASE 14.—A woman, aged 27 years, a patient of Dr. D. A. Davies, who was sent to me by Dr. J. Mitchell Bruce, was admitted to the hospital in December, 1894. She came of a highly tuberculous family and had tuberculous disease at the apex of the left lung. A year previously the teeth had been stopped and at that time there was great swelling of the face. She thought that she went to the dentist because of a slight toothache and not because of any ulcer of the gums. The swelling of the face was present before she went to the dentist, but it increased very much afterwards. The stoppings were therefore removed and the nerve was killed, and ultimately, six weeks before I saw her, the left canine, two bicuspids, and the first molar of the upper jaw were removed. The swelling broke on the surface of the cheek and discharged from time to time and when she came to London there were two or three openings in the indurated tissue of the left cheek from which exuded pus in which Dr. Bruce at once detected the characteristic yellow masses of actinomycosis. The patient lived outside Swansea and was very fond of chewing corn and straw. I scraped the cheek with great thoroughness on Dec. 17th. The only place that gave any trouble from hæmorrhage was the outside of the upper jaw above the place whence the teeth had been removed, and this very soon stopped. The wounds were plugged with lint soaked in pure carbolic acid. She was at once put on iodide of potassium, being given five grains three times a day, and the wounds rapidly healed. The ominous note was made when she left that there were tubercle bacilli but no actinomyces in the expectoration. She died from pulmonary tuberculosis and rectal fistula some months afterwards; there was no return of mischief in the cheek.

CASE 15.—A woman, aged 33 years, was brought to me on June 18th, 1898, with a swelling near the angle of the jaw, apparently involving the sterno-mastoid. It was very hard, red on the surface, and it involved the skin. She had first noticed pain in the autumn of 1897, which gradually got worse, and the swelling appeared in February, 1898. She had had all the teeth of the upper jaw removed, but I discovered no evidence that they could have had anything to do with the disease. She had had no sore-throat. She had lived on a farm and was very fond of chewing grass and corn. The swelling did not look exactly like a tuberculous gland, but I thought it probable that it was one. It was opened on June 18th and I was much astonished to find that it had all the appearance of a gumma involving the sterno-mastoid, so I cut and scraped away as much as I could and made a careful microscopical examination of a part of the tissue removed. It showed simply inflammatory tissue and on examining the section now I can find no trace of the fungus. I accordingly put her on a course of iodide of potassium and, as I expected, the wound slowly but soundly healed. After stopping the iodide, however, two small nodules appeared at the lower part of the scar and a minute opening occurred at the extreme lower part, after which these nodules disappeared. Another nodule, however, appeared soon afterwards in the middle of the scar and, now being on the look-out, I carefully examined what came away and at once detected some yellow granules which showed typically the fungus of actinomyces.

This is perhaps the most instructive case of the whole series because the true nature of the disease was not recognised for a long time, but the treatment was appropriate though founded on an incorrect diagnosis.

I may point out that of these 15 cases 10 of the patients were males and five were females. Their ages were respectively nine years, 14 years, 15 years, 17 years, 17 years, 18 years, 22 years, 25 years, 26 years, 27 years, about 30 years, 33 years, 38 years, and 45 years. In four cases the lungs and pleura were principally affected; in six cases the liver and pleura were principally affected; in two cases the cæcum or appendix was principally affected; in one case the rectum was principally affected; in one case the jaw was affected; and in one case the neck was affected. The occupations of the males were as follows: one was the son of a dairyman, two were clerks, one was a florist, one was a butcher, one was an errand boy, one was a gentleman, one was a cellar-boy, one was a bricklayer, and one was a railway porter. Of the females there is nothing to be said about the occupation. Four of the 15 recovered, although one died subsequently from pulmonary consumption, and one has had a relapse but is now well. The others all died although several of them were treated vigorously with iodide of potassium. Three had embolic abscesses in the brain or in other parts of the body.

With regard to treatment I would again emphasise the necessity of carrying out active surgical treatment as well as of administering iodide of potassium. How active this treatment should be must be decided according to the merits of each case. I have not yet met with a case in which such an extensive operation as removal of the cæcum offered any chance of success—except, indeed, in one who recovered after the adoption of milder measures. But the inveteracy of the disease and the fact that this operation has once at all events been successfully performed would, I think, warrant its performance under favourable circumstances. The appearances seen in the lungs and liver of several of the cases that ended fatally do not encourage one to attempt much active surgery when these organs are attacked.

The special points which this paper brings out are the following. 1. The probability that this uncommon disease may be mistaken for others of everyday occurrence. 2. The possibility that for long periods and even after death no signs of the ray fungus may be present in the discharges or discoverable in the tissues. 3. The characteristic appearances of the abscess when opened. 4. The possibility of true embolic pyæmia resulting, the secondary abscesses containing the ray fungus. 5. The fact that if the liver or lungs are affected a lateral curvature of the spine is likely to occur, the concavity being towards the affected side.

I must conclude by expressing my sense of obligation to the physicians who have kindly allowed me to describe the cases which in many instances were previously, and in some instances continuously, under their care in hospitals. In the foregoing descriptions I have frequently made use of the plural "we" when the singular pronoun "I" might have been expected. This refers to occasions when questions of diagnosis were discussed between us, and I trust that I have in no case misrepresented the opinion of any of my colleagues.

I also desire to point out to anyone who may consult this paper for the sake of collating cases that some of them have been previously published, one by myself, and others by other writers. In each case, where I am aware of the fact, such previous publication is indicated in the text.

THE AFTER-RESULTS IN 40 CONSECUTIVE CASES OF VAGINAL HYSTERECTOMY PERFORMED FOR CANCER OF THE UTERUS.[1]

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THE series of 40 cases recorded in this paper includes all the cases in which I have performed vaginal hysterectomy for cancer of the uterus up to the end of April, 1899, when I completed my fortieth case. Up to the year 1893 I had for the most part treated cases of cancer of the cervix that appeared suitable for operation by the supra-vaginal amputation of the cervix, and reserved total extirpation of the uterus for cases of primary cancer of the body of the uterus. Since that time, however, I have been more and more convinced that to perform the supra-vaginal amputation of the cervix in such a way as to give the patient the utmost chance that the disease will not recur is, in the majority of

[1] A paper read before the Royal Medical and Chirurgical Society on Nov. 13th, 1900. The author is much indebted to the Council for permission to publish the paper and some of the illustrations before they have appeared in the Transactions of the Society.

cases, a more difficult matter than to perform the operation of vaginal hysterectomy. I have for some time past only performed the supra-vaginal amputation of the cervix for very early cases of cancer of the vaginal portion in which there is a limited and superficial growth. Up to April, 1899, I have had 33 cases of the supra-vaginal amputation of the cervix for cancer, but I do not propose to deal with these cases in this paper.

THE CASES THAT REMAIN FREE FROM RECURRENCE.

Among the 40 cases of vaginal hysterectomy there are 14 cases in which the disease has not recurred. In two of these, Cases 3 and 4 in the series, although the clinical evidence convinced me that they were really examples of cancer, this cannot be proved by examination of the specimens. In the remaining 12 cases there can be, I think, no doubt whatever on this point. The specimens have been carefully examined and are here for inspection to-night, as also are sections of the growth in each case. This appears to me an important point.

My object in the present paper has been to inquire more especially into the *after-results* in the cases of cancer of the uterus in which I have performed vaginal hysterectomy. In such an inquiry it is essential, first of all, to prove that in those cases in which the disease has not recurred the growth was really malignant. In order to satisfy this condition I have in each case had an independent report on the growth by Mr. Targett of the Clinical Research Association, and his report will be found verbatim in the account of each of the cases. The necessity of a careful microscopical examination of the growth in each case is almost self-evident, and when the microscopical examination confirms the opinion based on the clinical features and physical examination there can, I think, be no hesitation in accepting the result as fully proved. In three cases in this series, Cases 3, 4, and 25, the microscopical examination did not confirm the diagnosis of malignancy based on the physical examination. In Cases 3 and 4, though I have excluded them as "non-proven," I feel little doubt that they were cases of cancer. I have myself met with an example of cancer of the cervix in which the appearance of the growth under the microscope would certainly not have warranted a diagnosis of cancer, but in the case in question, one treated by the supra-vaginal amputation of the cervix, the malignant nature of the growth was proved by recurrence. As regards Case 25 in this series, the clinical features and the physical examination led me to believe without any hesitation that the case was one of malignant ulcer of the cervix, but on examination of the cervix by the microscope Mr. Targett reported that the case was one of tuberculous ulceration. To make quite certain he examined two portions, each taken from a different part of the cervix. I think this case is an important one, as clinically it exactly resembled one of cancer of the cervix. Tuberculous ulceration of the cervix as a primary condition must be extremely rare. Very little is to be found about the subject in works on gynæcology, and it has not been regarded as a condition ever likely to give rise to difficulty when the diagnosis of cancer is being considered. Yet in my case (Case 25) primary tuberculous ulceration of the cervix produced a condition identical, as far as physical examination was concerned, with that resulting from malignant ulceration. I have seen a very large number of cases of cancerous ulcer of the cervix, certainly some hundreds, and I am sure that in the case in question the clinical features of the cervix were precisely similar to those produced by the ulceration of a cancerous growth. The occurrence of such a case emphasises the importance of always examining growths supposed to be cancer under the microscope before accepting them as really malignant. Again, one has occasionally heard of a case pronounced by a competent authority to be one of cancer of the cervix where after a long time the patient gradually improved and ultimately made a good recovery, to the surprise of everyone connected with the case, and no doubt to the discredit of the gynæcologist who had made the diagnosis. It seems to me, in the light of the case above referred to (Case 25), that not improbably the patients in some such cases may have really been suffering from tuberculous ulceration of the cervix, which presumably may occasionally get well spontaneously. However that may be, in Case 25, believing it to be a typical example of cancer of the cervix, I performed vaginal hysterectomy and the patient remains quite well. It is more than four years since the operation but I have, of course, excluded the case from Table II.—the list of cases proved to be cancer of the uterus and treated by vaginal hysterectomy which remain free from recurrence at the present time.

To return to the question of the after-history of patients suffering from cancer of the uterus and treated by vaginal hysterectomy, in addition to proving the malignancy of the growth in each case there is the necessity of ascertaining the state of the patient after the operation. It is not an easy thing to do. To have any real value inquiries have to be made from time to time over long periods; for instance, two cases in this paper have been kept under observation for more than seven years. The evidence of non-recurrence may be obtained either by actual vaginal examination or by seeing the patient at intervals and observing that she continues in good health, or by hearing at intervals from her medical attendant that she continues well, or in some cases by hearing from the patient herself at intervals that she continues well. No doubt the most satisfactory thing is to examine the patient; in eight out of the 12 cases in Table II. I have myself examined the patients from time to time. In some cases, however, when the patient continues well she may not be unwilling to come to see you, but she will object to be examined, as she has nothing the matter. Two cases (Cases 7 and 24, Table I.) are in this category. In some cases one can only hear by letter from the patient or from her medical attendant from time to time. This evidence is not so unsatisfactory as it might appear, and for this reason; in those cases in which recurrence takes place the downward progress to a fatal issue is generally fairly rapid—a matter of months, so that if inquiries made at long intervals—once a year, for instance—result in a favourable report there can be no reasonable doubt that the disease has not recurred.

Numerous cases of vaginal hysterectomy and series of cases of vaginal hysterectomy for cancer have been published from time to time; but I am not aware of any considerable series of such cases in which the proof both of the malignancy of the growth, and especially of the condition of the patients many years after the operation, has been given so rigorously and in such detail as in the present series of cases. As regards the after-histories especially, it will be seen that I have given the date on which I either examined the patient or saw her without examining her, or heard from herself by letter, or heard from her usual medical attendant by letter.

As regards the intervals that have elapsed since the operation without recurrence in the 12 cases referred to.—In Case 7 more than seven years have passed and the patient is known to be well, and in Case 8 seven years have also passed without recurrence. Both of these cases were examples of primary carcinoma of the body of the uterus. In Case 15 six years passed without recurrence; in Case 19 five and a half years; in Case 23 five years; in Case 24 nearly five years; in Case 26 nearly four years; in Case 29 more than three years; in Case 32 two years and 10 months; in Case 33 two and three-quarter years; in Case 36 more than two years; and in Case 39 more than one year. Omitting Case 39 it will be seen, therefore, that there are 11 cases out of the 40 remaining free from recurrence from two to seven years after the operation—that is, 27·5 per cent. This result appears deserving of close attention, since at the present time some gynæcologists have been so much discouraged by their experiences as to doubt if it is worth while to operate on cases of cancer of the uterus at all.

The comparatively high percentage of patients remaining free from recurrence in my series is, I believe, largely due to the careful selection of cases. My practice has been generally to examine the cases carefully under anæsthesia and only to operate when the disease has appeared, so far as physical examination can decide, to be limited to the uterus.

As regards the cases in which recurrence is known to have taken place.—The disease is known to have recurred in 18 cases. In 12 of them recurrence took place during the first year; in two during the second year; in two during the third year; and in two during the fourth year. The 40 cases may be divided into groups as follows. In 12 cases there has been no recurrence; in 18 cases there has been recurrence; four patients died; in two cases the nature of the disease cannot be proved by examination of the specimens; in three cases I have no definite information as to whether the disease recurred or not; and in one case the disease proved to be primary tuberculous ulceration of the cervix and not

TABLE I.—40 CONSECUTIVE CASES OF VAGINAL HYSTERECTOMY PERFORMED FOR CANCER OF THE UTERUS.

Case.	Disease.	Date of operation.	Immediate result.	Remarks.	Years of age.	Remote result.
1	Cancer of body.	March 1st, 1886.	Recovered.	Ligatures only used to secure broad ligaments.	58	Recurrence early in 1887. Died July 7th, 1887, 15 months after operation. Recurrence during the first year.
2	Cancer of cervix.	Oct. 4th, 1886.	Died 48 hours after operation.	Pus set free in the operation (pyometra). Wall of right ventricle very thin and heart fatty. Died from œdema of lungs and heart failure. Ligatures only to broad ligaments.	62	—
3	Cancer of body.	Nov. 7th, 1889.	Recovered.	Large soft "cauliflower" mass protruding through widely dilated os on admission. This was removed immediately and vaginal hysterectomy performed on a subsequent occasion.	42	Seen and examined Oct. 5th, 1893—i.e., nearly four years after operation—when there was no recurrence. Not seen since.
4	Cancer of cervix.	Oct. 23rd, 1890.	Recovered.	Definite "cauliflower" growth on posterior lip of cervix. Hæmaturia soon after the operation, lasting five days. Blood casts present. Pressure forceps used to broad ligaments. Clinical signs and symptoms seemed conclusive as to malignancy, but the microscopical examination not so.	41	This patient has been regularly seen up to and including the present year 1900. There has been no sign of recurrence.
5	Cancer of body.	March 17th, 1892.	Recovered.	Soft papillary growth projecting in cavity of body of uterus.	44	Free from recurrence for more than two and a half years after operation. Case fully recorded in the Transactions of the Obstetrical Society of London, vol. xxxvi., p. 374. Recurrence during the third year.
6	Cancer of cervix.	June 16th, 1892.	Recovered.	Little of the growth to be seen at the os uteri. The whole of the cervical canal up to the internal os was affected by the malignant growth. The cervix, in fact, converted into a thin shell lined with the growth.	59	Good health for two and a half years after operation, then recurrence took place in the scar. Recurrence during the third year.
7	Cancer of body.	Feb. 1st, 1893.	Recovered.	An example of "hard" cancer of the body of the uterus—the rarer variety.	53	Still quite well—more than seven years since the operation.
8	Cancer of body.	June 8th, 1893.	Recovered.	An example of "hard" cancer of the body of the uterus.	57	Still remains quite well. Last examined at the London Hospital July 19th, 1900. No sign of recurrence.
9	Cancer of cervix.	July 20th, 1893.	Recovered.	—	35	Recurrence during the second year.
10	Cancer of cervix.	August 4th, 1893.	Recovered.	—	38	Died. Recurrence during the second year.
11	Cancer of body.	August 21st, 1893.	Recovered.	Soft papillary growth. Perineum had to be incised. After one side of uterus freed it was brought into the vagina by forceps like small midwifery forceps.	54	Came up to the hospital and was examined November, 1893, three months after operation. Quite well and no sign of recurrence. All efforts to trace her since failed as she had left the former address.
12	Cancer of cervix.	August 28th, 1893.	Recovered.	Soft mushroom-like growth affecting both lips. I thought at the time of operation that the left broad ligament and left utero-sacral ligament were somewhat infiltrated and that probably, therefore, removal of the uterus had not removed all the diseased tissue.	42	She was seen and examined on Nov. 30th, 1893, when there was distinct evidence of recurrence in the top of the vagina. I think most probably that the whole of the cancerous tissue had not been removed by the hysterectomy. Recurrence during the first year.
13	Cancer of cervix.	Feb. 1st, 1894.	Died.	Deep laceration of cervix left side. Fatal amount of blood lost at operation.	48	—
14	Cancer of cervix.	Feb. 22nd, 1894.	Recovered.	A case of large "cauliflower" growth.	52	Recurrence took place in August, 1894. Recurrence during the first year.
15	Cancer of cervix.	Feb. 27th, 1894.	Recovered.	An extensive "cauliflower" growth. It was not till the patient was under an anæsthetic that the operation seemed worth trying.	57	This patient remained free from any sign of recurrence till she died in February, 1900. Mr. Howse, Barking-road, E., saw her several times in her last illness. She died from phthisis.
16	Cancer of cervix.	August 13th, 1894.	Recovered.	"Cauliflower" growth of the cervix. Round nodule of the size of a cobnut in left broad ligament. As the uterus could be easily drawn down it seemed worth trying whether removal of the uterus and also of the nodule would be effectual.	43	I believe recurrence took place not very long after the operation, but I had not the opportunity of examining the patient after she left London. Recurrence during the first year.
17	Cancer of cervix.	August 16th, 1894.	Recovered.	An example of the nodular and infiltrating form of the disease, the whole cervix being much thickened by it. Little or no growth projecting from the vaginal portion.	32	Recurrence during the first year.
18	Cancer of cervix.	August 30th, 1894.	Died on seventh day from peritonitis.	A large "cauliflower" growth. Patient doing well till pressure forceps were removed at the end of the second day, when she complained of pain, and within a few hours symptoms of peritonitis appeared. In removing forceps the general cavity of the peritoneum must have been reopened. Since this case I leave on forceps at least three days.	39	—

TABLE I.—40 CONSECUTIVE CASES OF VAGINAL HYSTERECTOMY PERFORMED FOR CANCER OF THE UTERUS—(*Continued*).

Case.	Disease.	Date of operation.	Immediate result.	Remarks.	Years of age.	Remote result.
19	Cancer of cervix.	Oct. 13th, 1894.	Recovered.	Cancer involving the substance of the cervix; little projecting growth. Patient had been told at another hospital that the case was too far advanced for operation.	52	Has been seen at frequent intervals at London Hospital since operation and has remained quite well; last examined March 15th, 1900.
20	Cancer of cervix.	December, 1894.	Recovered.	The removal of the uterus probably did not remove all the tissue infiltrated by the malignant growth.	45	Recurrence during the first year.
21	Cancer of cervix.	Feb. 14th, 1895.	Recovered.	Large "cauliflower" growth.	26	Recurrence during the first year.
22	Cancer of cervix.	April 25th, 1895.	Recovered.	Large "cauliflower" growth especially affecting the posterior lip of cervix. Was doubtful at time of operation if all infiltrated tissue was removed.	35	Seen and examined on several occasions, the last time on June 16th, 1898, when the scar was quite healthy. Heard that she went to America and died either at the end of 1898 or early in 1899; no information as to cause. As there was no sign of recurrence on June 16th, 1898, it seems at least equally likely that she may have died from some independent cause.
23	Cancer of cervix.	June 1st, 1895.	Recovered.	Large "cauliflower" growth, the part of the growth in the cervical canal just reaching internal os. There was a very large pyometra, the pus being horribly offensive.	55	She has remained well since the operation. She has gone to Australia, but writes to me on each anniversary of her operation. The last letter, dated June 11th, 1900—five years after the operation—says she was then quite well.
24	Cancer of body.	August 30th, 1895.	Recovered.	A large papillary growth projected into the cavity of the endometrium.	48	Well May 18th, 1897: also heard from her in May, 1900, that she was quite well.
25	Primary tuberculous ulceration of cervix.	Jan. 30th, 1896.	Recovered.	At time of operation growth was believed to be cancer of cervix.	36	Quite well in November, 1899.
26	Cancer of cervix.	April 16th, 1896.	Recovered.	Large "cauliflower" growths of cervix.	35	Examined Jan. 11th, 1899; a granular mass, size of raisin, at upper part of vagina. Seen recently, mass just the same, and evidently not malignant. Quite well March 15th, 1900.
27	Cancer of cervix.	Sept. 7th, 1896.	Recovered.	Nodule of malignant growth; size cob-nut or thereabouts, posterior lip. Anterior lip appeared quite healthy. Supra-vaginal amputation done first, then on slitting up cervix the growth found to extend up to internal os, so body of uterus was then also removed.	45	Well up till three years after operation. Then came to London hospital in February, 1900, with moveable mass size of fœtal head in hypogastric region. Evident recurrence in scar and under vaginal walls. The glands in right groin enlarged. Cachectic; no projection growth in region of scar, and only slight bleeding on examination. Recurrence during the fourth year.
28	Cancer of body.	Nov. 12th, 1896.	Recovered.	Secondary hæmorrhage in third week after operation requiring application of Wells's forceps. Ureteral fistula persisting for some three or four months, then healed spontaneously.	49	Recurrence in the recto-vaginal septum during the first half of 1900. Recurrence during the fourth year.
29	Sarcoma of body.	Feb. 11th, 1897.	Recovered.	See Transactions of the Obstetrical Society of London for full report of case.	24	Quite well March 24th, 1900.
30	Cancer of cervix.	June, 1897.	Recovered.	—	About 60	Recurrence took place about a year after the operation. Recurrence during the first year.
31	Cancer of cervix.	August, 1897.	Recovered.	—	60	Recurrence took place and she died May 19th, 1898. Recurrence during the first year.
32	Cancer of body.	Sept. 4th, 1897.	Recovered.	There were some mucous polypi attached to the lower part of cervix. The malignant growth was in the body.	61	Last examined July 7th, 1900. No sign of recurrence.
33	Cancer of cervix.	Sept. 6th, 1897.	Recovered.	—	38	Well June 21st, 1900.
34	Cancer of cervix.	Sept. 23rd, 1897.	Died three weeks after the operation from pneumonia.	The only case I have had in which cancer of the cervix affected a procident uterus. This patient was mentally feeble and very difficult to manage after the operation. At the post-mortem examination the pneumonia was said to be not septic and the parts in the neighbourhood of Douglas's pouch were looking healthy.	53	—
35	Cancer of cervix.	Oct. 5th, 1897.	Recovered.	A rather advanced case.	52	Died from recurrence July, 1898, the scar remaining unaffected to the last. Recurrence during the first year.
36	Cancer of cervix.	Dec. 2nd, 1897.	Recovered.	—	46	Examined and found quite well March 22nd, 1900, more than two years since the operation.
37	Cancer of cervix.	May 12th, 1898.	Recovered.	A rather advanced case, with large conical ulcer.	38	Recurrence took place March, 1899. She became much worse June 5th, 1899, and died soon after. Recurrence during the first year.

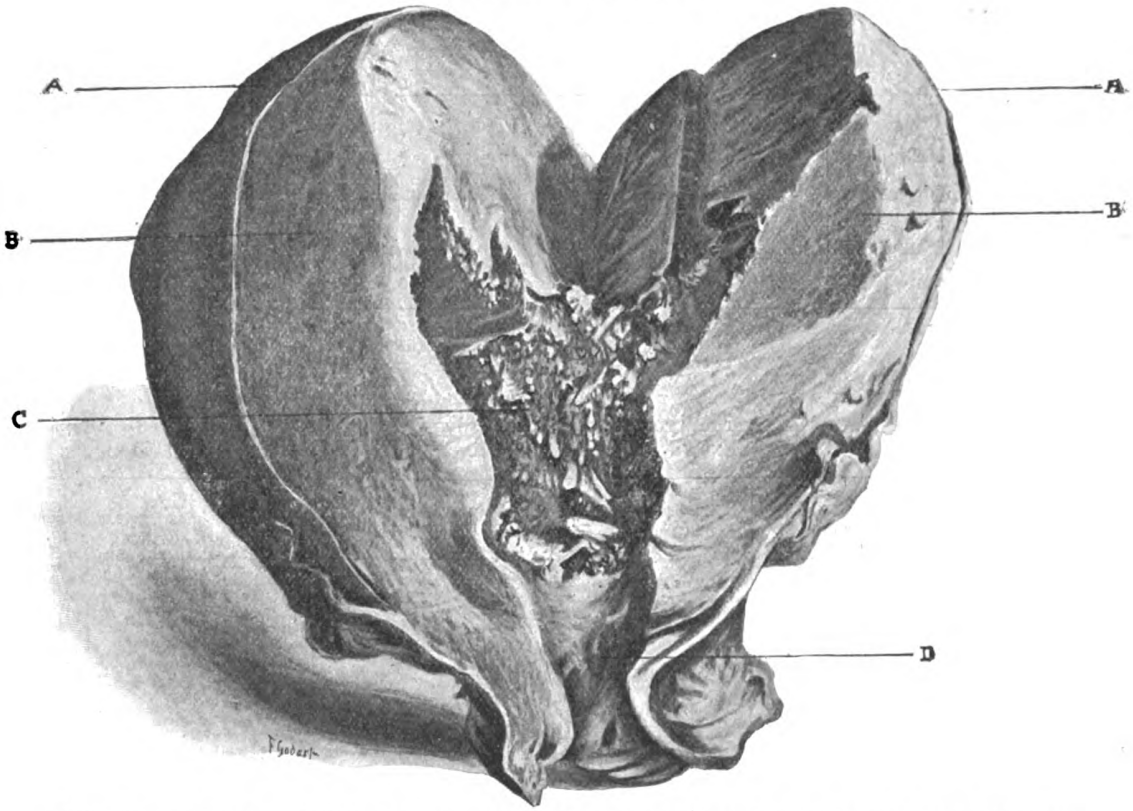
TABLE I.—40 CONSECUTIVE CASES OF VAGINAL HYSTERECTOMY PERFORMED FOR CANCER OF THE UTERUS—(*Continued*).

Case.	Disease.	Date of operation.	Immediate result.	Remarks.	Years of age.	Remote result.
38	Cancer of body.	May 14th, 1898.	Recovered.	—	About 50	—
39	Cancer of cervix.	Feb. 16th, 1899.	Recovered.	Bleeding on taking off forceps, requiring application of one pair more for another two days.	36	Quite well July 26th, 1900.
40	Cancer of cervix.	April 27th, 1899.	Recovered.	The disease affected both the vaginal and supra-vaginal portions of the cervix.	36	Recurrence early in 1900. Recurrence during first year.

TABLE II.—12 CASES OF VAGINAL HYSTERECTOMY FOR CANCER OF THE UTERUS IN WHICH THE DISEASE IS KNOWN NOT TO HAVE RECURRED.

Case.	No. of case in Table I.	Disease.	Date of operation.	Place of operation.	Interval since operation without recurrence.	Microscopical characters of growth.
1	7	Cancer of body.	Feb. 1st, 1893.	Private; with Mr. Stott, of High-gate-road, and Dr. C. Godson.	Seven years and four months. I saw her on June 18th, 1900.	Extract from Clinical Research Association's Report (Mr. Targett): "The growth may be described as a villous carcinoma."
2	8	Cancer of body.	June 8th, 1893.	London Hospital; sent to me by Mr. Best of Dover.	Seven years. Examined July 19th, 1900, at the London Hospital. No recurrence.	Extract from Clinical Research Association's Report (Mr. Targett): "A soft columnar-celled carcinoma."
3	15	Cancer of cervix, large "cauli-flower."	Feb. 27th, 1894.	Private; with Mr. Howse, then of Barking-road, E., now of Reading.	Six years.	Extract from Clinical Research Association's Report (Mr. Targett): "The nature of the growth is undoubtedly squamous-celled epithelioma."
4	19	Cancer of cervix.	Oct. 13th, 1894.	London Hospital. Sent to me by Mr Howse of Reading.	Five and a half years (up to March 15th, 1900, when the patient was last examined).	Extract from Clinical Research Association's Report (Mr. Targett): "The substance of the cervix is infiltrated with branching processes of squamous-celled epithelioma."
5	23	Cancer of cervix; large "cauli-flower" Pyometra.	June 1st, 1895.	Private; sent to me by Mr. Garry Simpson of Acton.	Five years. Heard from her in letter dated June 11th, 1900, that she was quite well.	Extract from Clinical Research Association's Report (Mr. Targett): "Solid branching columns of squamous-celled epithelioma are shown infiltrating the substance of the cervix uteri."
6	24	Cancer of body.	August 30th, 1895.	London Hospital.	Four and three-quarter years (up to May, 1900, when I heard from her that she was quite well).	Extract from Clinical Research Association's Report (Mr. Targett): "The growth from the body of the uterus is a soft, glandular-celled carcinoma, which has extensively infiltrated the muscular substance."
7	26	Cancer of cervix.	April 16th, 1896.	London Hospital; sent to me by Dr. Dunlop of Purfleet.	Nearly four years. I saw her on March 15th, 1900, and she was quite well.	Extract from Clinical Research Association's Report (Mr. Targett): "This portion of the cervix uteri is thickly infiltrated with a soft squamous-celled epithelioma."
8	29	Sarcoma of body, "deciduoma malignum."	Feb. 11th, 1897.	London Hospital.	More than three years (up to March 24th, 1900, when I last examined her).	For full report of this case see the Transactions of the Obstetrical Society of London, vol. xxxix., for 1897, p. 246.
9	32	Carcinoma of body.	Sept. 4th, 1897.	Private; with Dr. Pope of Kington, Hereford.	Two years and 10 months (up to July 7th, 1900, when I last examined her).	Extract from Clinical Research Association's Report (Mr. Targett): "The tissue from the body of the uterus is extensively infiltrated with a soft columnar-celled carcinoma."
10	33	Cancer of cervix.	Sept. 6th, 1897.	London Hospital.	Two years and nine months (up to June 21st, 1900, when I last examined her).	Extract from Clinical Research Association's Report (Mr. Targett): "The substance of the cervix uteri is extensively invaded with thick branching processes of squamous-celled epithelioma."
11	36	Cancer of cervix.	Dec. 2nd, 1897.	London Hospital.	Two years and nearly four months (up to March 22nd, 1900, when I last saw her).	Extract from Clinical Research Association's Report (Mr. Targett): "The growth in the cervix uteri is a malignant adenoma—that is, a columnar-celled carcinoma in which the cells preserve their tubular arrangement."
12	39	Cancer of cervix.	Feb. 16th, 1899.	London Hospital.	One year and five months (up to July 26th, 1900, when I last examined her).	Extract from Clinical Research Association's Report (Mr. Targett): "The cervix is very extensively invaded with squamous-celled epithelioma. Some of the epithelial processes are large and the central cells have undergone granular degeneration. In others there are small cell-nests."

FIG. 1 (CASE 8, TABLE I.).



Vaginal hysterectomy, June 8th, 1893. The patient was seen and examined at the London Hospital on July 19th, 1900, and found to have no sign of recurrence. A, Peritoneum. B, Cut surface of uterine wall. C, Growth in endometrium, "a soft columnar-celled carcinoma." D, Cervical canal.

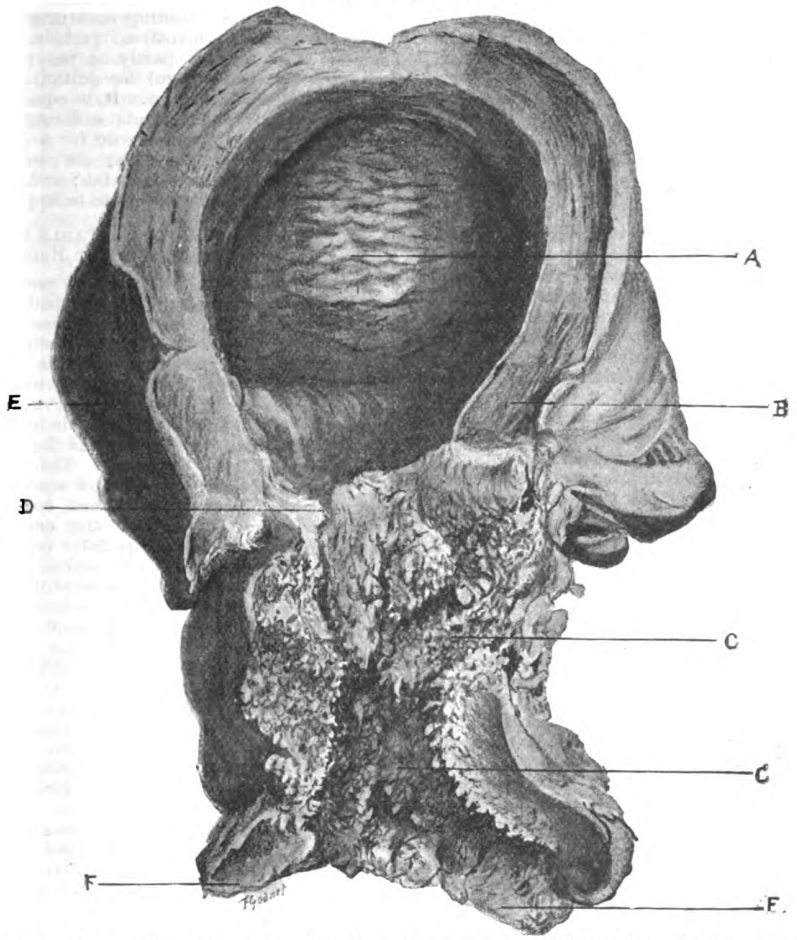
FIG. 2 (CASE 8, TABLE I.).

High power. In this figure the columnar character of the cells is shown, and although the tubules and alveoli everywhere exhibit a central cavity or lumen, yet there are abundant signs of epithelial proliferation, and the cells encroach on the central space. In the well-marked tubular structure of the growth this specimen resembles the so-called malignant adenoma. (Mr. Targett's description.)

FIG. 3 (CASE 8, TABLE I.).

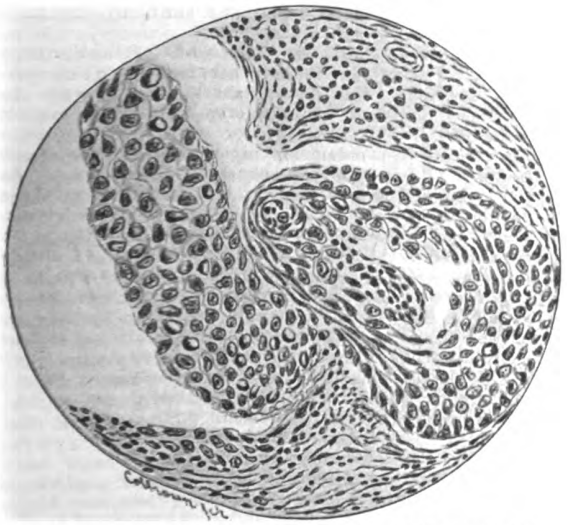
Low power. The figure represents a portion of uterine wall composed of interlacing bundles of muscular tissue and extensively invaded by a soft columnar-celled carcinoma. The cells are arranged in tubules and elongated spaces which have a definite lumen, and the stroma consisting of uterine muscle is very scanty. (Mr. Targett's description.)

FIG. 4 (CASE 23, TABLE I.).



Vaginal hysterectomy, June 1st, 1895. I heard from the patient (who is in Australia) in a letter dated June 11th, 1900, that she is quite well. A, Cavity of the body of the uterus enormously dilated; it contained fœtid pus (pyometra), which escaped during the operation. B, Cut surface of the wall of the body of the uterus. C, Growth in the cervix, "squamous-celled epithelioma." D, Internal os. E, Peritoneal surface of the uterus. F, External os.

FIG. 5 (CASE 23 TABLE I.).



High power. The squamous character of the epithelial cells is here represented, and in the centre keratoid and other degenerative changes have taken place. The cells have separated from the stroma by shrinkage. (Mr. Targett's description.)

FIG. 6 (CASE 23, TABLE I.).

Low power. Solid branching columns of squamous-celled epithelioma are shown infiltrating the substance of the cervix uteri. Large cell-nests are present as well as areas of granular degeneration in the centres of the epithelial processes. (Mr. Targett's description.)

malignant disease. It will be seen that there were no recurrences later than during the fourth year after operation, so that when a patient has passed through four complete years without recurrence there seems to be some probability that she may remain perfectly well.

[Dr. Lewers here referred to the mortality of the operation and discussed some points in the technique. He believed it to be a good plan when operating for cancer of the cervix, after the cervix has been freed, to apply Paquelin's cautery to the cut surfaces adjacent to the growth. He then discussed some complications of vaginal hysterectomy—secondary hæmorrhage and injuries of the bladder and ureters.]

CASES SUITABLE FOR VAGINAL HYSTERECTOMY.

When there is evidence that the disease has spread beyond the anatomical limit of the uterus in any direction it is, I believe, hopeless to expect any permanent benefit from vaginal hysterectomy, even if it is possible to perform the operation. In many cases it is at once evident on examination that the growth has spread far beyond the uterus. No difficulty arises in coming to a conclusion in such cases. In other cases where on an ordinary examination the mobility of the uterus appears to be unimpaired it is not so easy to decide. The uterus may be freely moveable, yet the base of the bladder may be involved. Again, the mobility at an ordinary examination may seem normal, yet when an attempt is made to draw the cervix down to the vulva a check is felt at one side or the other in the region of the broad ligaments or of the utero-sacral ligaments due to the extension of the malignant growth in the corresponding direction. This extension can generally be best appreciated by examining per rectum while the cervix is being drawn down with a volsella. Cases of this kind are certainly unsuitable for radical operation. It may be possible to remove the uterus, but that is of little use if a portion of broad ligament or utero-sacral ligament infiltrated with the malignant growth is left behind. In most of these doubtful cases the best plan is to make a careful examination under anæsthesia before deciding as to operation. For my own part, I have never felt it to be justifiable to perform an operation like vaginal hysterectomy as a palliative operation—in other words, to perform it where one feels certain that the patient has not even a chance of obtaining any permanent benefit. On the other hand, there may be a very extensive growth and yet, if it does not seem to have extended beyond the uterus, operation is advisable. One must not be too ready to reject cases as hopeless. Case 22 in this series is a good example of this. The growth from the cervix was a very large one of the "cauliflower" type and yet the patient certainly remained well for more than three years after the removal of the uterus. I am not even certain that she had recurrence, as, though she is dead, she died in America a comparatively short time after I last examined her and there was then no sign of recurrence. Again, in Case 19 the patient had been told at another hospital that her case was too advanced for operation, yet she remains well more than five years after the operation. In Case 15 also, though the growth is obviously a large one, the patient remained free from recurrence for six years, when she died from phthisis. Case 23 is another instance in point; the growth is a large one, but the patient remains well five years after operation. These cases, then (Cases 15, 22, and 23), go to show that the size of the growth from the cervix is relatively of small importance and that the essential point is whether there is any extension to the tissues outside the uterus itself.

Table I. is a list of the 40 vaginal hysterectomies for cancer which I had performed up to April, 1899, with some of the more important details of the cases. Table II. is a list of the 12 cases in which the disease is known not to have recurred.

CONCLUSIONS FROM THE TABLES.

The conclusions that appear to follow from a consideration of the facts in this paper are: (1) that in a certain proportion of cases patients suffering from cancer of the uterus may be relieved by operation for periods of many years—in some cases for so long a time, seven years and upwards, that there seems some probability that the relief may be permanent; (2) that the proportion of cases in which this result can be expected must remain very small so long as patients generally only seek advice at a late stage of the disease; and (3) that consequently the great desideratum is early diagnosis. Improvement in this direction depends to some extent on a better appreciation on the part of women themselves of the early symptoms of the disease, and especially of the significance of bleeding after the menopause, or of bleeding occurring at an earlier time of life between the menstrual periods. Early diagnosis, of course, also depends partly on the profession. Especially important is the general recognition of the gravity of the symptom just mentioned. It is equally important also to bear in mind that patients suffering from cancer of the uterus may, and generally do for a relatively long period, look quite well. They may be well nourished, or not infrequently even excessively fat; and, as regards the aspect of the face, they may appear to be in perfect health.

NOTES OF THE 12 CASES (TABLE II.) IN WHICH THE DISEASE HAS NOT RECURRED.

CASE 7.—The patient was 53 years of age. She had been married 21 years; she had had no children, but two miscarriages, each at about three months, the last 13 years before I saw her. I was asked to see her in consultation with Dr. Clement Godson and Mr. T. S. Stott of Highgate-road. The symptoms were continued hæmorrhage for seven or eight months, with occasional profuse losses of blood and severe pain in the hypogastric region. On examination the uterus was found to be moderately enlarged and freely moveable. The vaginal portion of the cervix was normal. The sound occasioned very free bleeding. It was agreed that the best course would be to dilate the cervix and to examine the endometrium. This was accordingly done. Two specially prepared laminaria tents were inserted, and on the next afternoon the dilatation of the cervix was completed with Hegar's dilators under anæsthesia. There was a hard, irregular condition of the inside of the body of the uterus. Nothing could be detached either with the finger or with a curette. The diagnosis rested on the symptoms, and on the fact that the condition of the endometrium could not be classified as belonging to any non-malignant state. I advised that vaginal hysterectomy should be performed, and I carried out the operation on Feb. 1st, 1893, assisted by Dr. Godson, Mr. Stott, and Dr. J. H. Sequeira, the last of whom was resident accoucheur at the London Hospital at that time. Mr. F. W. Braine gave the anæsthetic. The patient made a good recovery.

A section from the uterus was made by the Clinical Research Association and reported on by Mr. Targett as follows: "The growth of the uterus is a columnar-celled carcinoma of the body of the villous type. It has deeply invaded the muscular substance."

The patient came to see me on June 8th, 1900, to show me that she was quite well. The interval in this case without recurrence is, therefore, seven years and four months. Her present medical attendant is Dr. Andrew Brown of Lancaster-road, Belsize-park.

CASE 8 (see Figs. 1, 2, and 3).—A married woman, aged 57 years, was admitted under my care into the London Hospital on May 1st, 1893. She was sent up to me by Mr. W. G. Best of Dover.

Previous history.—She was born at Blackburn in Lancashire. During her infancy her family removed to Crayford, in Kent. Her circumstances had always been comfortable. She had scarlet fever in childhood and cholera in 1849.

Menstruation.—The catamenia began when the patient was between 14 and 15 years of age. There was some irregularity for the first 10 months, but after that she was very regular every four weeks, and did not lose very much. She always suffered a great deal of pain after the periods. She was married at the age of 33 years and had six children, but no miscarriages. The last confinement was 14 years ago.

Present illness.—About two years ago the periods began to be irregular. She would "see nothing" for two or three months, and then a period would come on with an excessive loss, containing clots. During the last 18 months she had been losing blood constantly, and for the same time had suffered a good deal of pain, more severe at night, in the lower part of the abdomen. She was closely questioned as to the time when the various symptoms arose, and it became clear that as long ago as two years there was a red discharge between the periods, and that for the greater part of the last two years she had had a good deal of pain in the back and lower part of the hips. She said, also, that she always had suffered a great deal of pain during her periods from the time they began. As she grew older the pain at the periods was not so severe until

about two years ago, when it re-commenced. The pain during these two years had been constantly present, and had increased in severity. Her state on May 1st, 1893, was as follows. She was a stout, heavy woman and as regards the appearance of the face she did not look very ill. There was no cachexia. Her weight on admission was 12 st. 13½ lb. Nothing abnormal could be felt on examination of the abdomen. On vaginal examination there was a considerable descent of the anterior vaginal wall, which protruded from the vulva. There was an extensive rupture of the perineum, reaching back to the edge of the sphincter. There was also slight prolapse of the rectal mucous membrane. Through the speculum the vaginal portion of the cervix appeared to be healthy. The uterus was fairly moveable and in the normal position. The body of it was somewhat enlarged and the sound passed three and a quarter inches, causing rather free bleeding. She was kept under observation in the hospital during the whole of May, and during that time there was a constant red vaginal discharge, and she complained of pain about the lower part of the abdomen, more severe at night. On May 31st, at 5 P.M., two specially prepared laminaria tents were inserted into the uterus with strict antiseptic precautions, and on the following day (June 1st), at 2 P.M., she was anæsthetised with ether. The tents were removed, and it was found that the cervix admitted the index finger easily. The uterus was drawn down to the outlet with a volsella. The finger when passed into the uterus detected a hard, irregular condition of the endometrium; this was particularly marked at the upper part and to the right. I could not classify the condition as resembling any non-malignant pathological state, and I came to the conclusion that the case was one of primary carcinoma of the body of the uterus. I should have mentioned that nothing could be scraped away from the endometrium with a curette.

Operation.—On June 8th, 1893, the patient was anæsthetised with ether and placed in the lithotomy position. The vulva and vagina were thoroughly disinfected with percbloride lotion 1 in 1000. Having drawn down the cervix the anterior fornix was incised first and the bladder was separated from the cervix as high as the internal os. The posterior fornix was then similarly incised, and Douglas's pouch was opened. The cervix was cleared laterally as high as the level of the internal os, pressure forceps being used to control the bleeding where necessary. The utero-vesical pouch of the peritoneum was then opened. The remaining lateral attachments were clamped piece by piece, the left broad ligament being first secured and divided. The uterus was then, as it were, delivered, the left side of it first, so that at this stage it was hanging by the right broad ligament. The latter was then secured with pressure forceps and divided. The uterus was then removed. The vagina was filled with iodoform gauze, the upper part of the plug projecting for an inch or so into Douglas's pouch. The patient's progress after the operation was very satisfactory. The highest temperature in the first week was 100·8° F. on the evening of June 11th. On one occasion in the second week (June 16th) it reached 101·4°. After June 20th the temperature was practically normal, only once after that date reaching 100°. The pressure forceps were removed on the afternoon of June 10th. The patient went home on July 21st, 1893. I have seen her every summer since the operation and have examined her. The last time the patient was examined was on July 19th, 1900, at the London Hospital. So far she has remained free from any sign of recurrence and appears to be in perfect health.

Sections for examination under the microscope were prepared by the Clinical Research Association, and reported on by Mr. Targett as follows: "This growth from the body of the uterus is a columnar-celled carcinoma, in which the tubular arrangement of the cells is well preserved. The tissues have shrunk in hardening, but the sections are sufficiently good for microscopic drawings."

CASE 15.—A married woman, aged 57 years, was seen by me in consultation with Mr. P. W. M. Howse, then of Barking-road, E., but now of Reading, in February, 1894. She had had 13 children, the last 15 years ago, and two miscarriages some time before the last confinement. The complaint when I saw her was that she had been losing blood from the vagina for the last eight weeks. Before this appeared there had been a yellow vaginal discharge for nine months. She had had no pain. She thought that she had lost flesh and said that her appetite was bad. The menopause occurred at 51 years of age. On examination there was found a large "cauliflower"-like growth springing from the vaginal portion of the cervix, forming a ring of soft projecting growth round the os uteri, and bleeding readily on examination.

It was decided to make a thorough examination under anæsthesia, with the understanding that if the conditions were found favourable the uterus should be removed. Accordingly, on Feb. 27th, 1894, the patient was anæsthetised. It was then found that the uterus could be drawn easily down to the vulva and that the growth did not seem to have spread beyond the limits of the cervix. There was a ring of apparently healthy vaginal portion outside the malignant growth all the way round it. This can be well seen even now in the specimen. The uterus was accordingly removed, the steps of the operation being much the same as in the preceding case, except that Paquelin's cautery was very freely applied to the cut edges of the vaginal fornices and neighbouring tissue from which the cervix had been detached. The patient made a very good recovery. I heard of her from time to time from Mr. Howse. She remained free from recurrence. Mr. Howse saw her several times in the course of her last illness (phthisis) and there was no return of the cancer up to the time of her death, which occurred in February, 1900, and was due to phthisis. Mr. Howse had attended her many times in former years for lung trouble. The interval since the operation without recurrence is, therefore, in this case six years.

Sections of the growth for the microscope were prepared by the Clinical Research Association and reported on by Mr. Targett as follows: "The second portion of this growth has been examined, but the tissue is so necrotic that the sections are not worth drawing. The nature of the growth is undoubtedly squamous-celled epithelioma, but owing to decomposition the cells are much vacuolated and the tissue has, therefore, an unnatural spongy appearance. It is not worth the expense of a drawing." I may add that the uterus had been more than five years in spirit before Mr. Targett had a piece of the growth for sections.

CASE 19.—The patient, a married woman, 52 years old, was admitted under my care into the London Hospital on Oct. 9th, 1894. She had had two children, the last one 26 years ago, but had never had any miscarriages. For the last eight years she had been a monthly nurse. She had always enjoyed good health and there was no history of any previous illness. She had always had a comfortable home. She had been a teetotaler all her life and had always lived in or near the East-end of London. Her two children were born within three and a half years of her marriage.

Menstrual history.—The catamenia appeared when she was 13 years old and she was always regular every four weeks except when she was pregnant. She always suffered very much from headache at the menstrual periods. The menopause occurred five years previously—i.e., in 1889. After the menopause she "saw nothing" till the end of June, 1894, when on awaking one morning she found that she had lost a considerable quantity of blood during the night. Throughout the whole of July, 1894, she continued to have a series of losses which occurred irregularly, the discharge being blood-stained and offensive. Occasionally it ceased altogether for two or three days. In August there was much less discharge, but since then it had continued more or less. She had been able to continue at her work. She consulted Mr. Howse in September, 1894, and afterwards was an in-patient at the Samaritan Hospital for four days. She said that she was told there that the disease was too far advanced for any operation to be advisable.

A month before her admission to the London Hospital—i.e., October, 1894—she first noticed a pain in the left iliac and in the hypogastric regions. It was of a burning character, not relieved by lying down, and not worse at night. The pain had gradually become more severe. A week before her admission she began to feel a pricking and shooting sensation in the left breast. She said that she had not been getting thinner.

On admission she was fairly well nourished but rather sallow. On Oct. 11th (1894) she was examined under anæsthesia. On vaginal examination there was no obvious projecting growth, the only suggestive point on gentle examination being that the external os was unusually patulous. On pressing the finger firmly into the os a soft friable growth could be felt occupying the cervical canal. The uterus was drawn down to the vulva with a volsella and came down easily. The vaginal fornices seemed to be free from any infiltration. On examining bimanually no

extension of the disease into the broad or utero-sacral ligaments could be made out.

Operation.—On Oct. 13th, 1894, the patient was anæsthetised with ether and placed in the lithotomy position. Vaginal hysterectomy was then performed. Wells's forceps were used for securing the vessels. The vagina was packed with iodoform gauze and the upper part of the gauze plug was pushed into the pouch of Douglas. The gauze and forceps were removed 96 hours after the operation, but no vaginal douches were given till the 24th, when she was ordered vaginal douches of weak iodine water twice daily. The temperature after the operation did not rise above 100·4° F. and the patient made an uninterrupted recovery.

Examination of the uterus after removal.—The body of the uterus was not appreciably enlarged, and, so far as could be judged by the naked eye, the disease had not extended into it. An interesting point, however, was that at one part of the fundus there was a white nodule of circular shape of the size of a pea in the thickness of the uterine wall. Microscopical examination of this nodule subsequently showed that it was a small fibro-myoma.

Sections of the cervix were prepared by the Clinical Research Association and were reported on by Mr. Targett as follows: "The substance of the cervix uteri is infiltrated with branching processes of squamous-celled epithelioma. There are a few cell-nests and some of the larger processes show granular degeneration of the central cells. The section is suitable for drawing."

I saw this patient last on March 15th, 1900, at the London Hospital, and examined her. The scar was quite healthy and she was herself perfectly well. The interval since the operation in this case is, therefore, five and a half years.

CASE 23 (see Figs. 4, 5, and 6).—The patient, who was 55 years of age, was brought to see me by Mr. Garry Simpson of East Acton on May 17th, 1895. She had had six children, the last 17 years previously, and two miscarriages, both before the date of the last confinement. The menopause occurred at the age of 50 years. Since then she had "seen nothing" till August, 1894. Since that time there had been a constant red discharge from the vagina and for the last two or three weeks the discharge had been offensive. She felt ill and worn out at the time when the vaginal discharge commenced. For some time she had suffered from continuous pain in the lower abdomen; the date of its commencement could not be fixed. Of late she had been getting rapidly thinner. On examination of the abdomen nothing abnormal could be felt. On vaginal examination a large "cauliflower" growth was felt springing from the vaginal portion of the cervix. The uterus seemed freely moveable and the body of the uterus seemed considerably larger than normal in a woman past the menopause. She went into Fitzroy House for the purpose of having the uterus removed and during the time—a few days—she was there before the operation the temperature at night was 100° F. or thereabouts as a rule.

Operation (June 1st, 1895).—Vaginal hysterectomy was performed in a manner similar to that already described in the preceding cases. At one stage of the operation the whole field became suddenly inundated with horribly fœtid pus. This came from the body of the uterus and had been let out by a laceration about the junction of the cervix and body caused by traction with the volsella. The pus had previously been pent up in the body of the uterus by occlusion of the os internum, constituting the condition known as "pyometra." In spite of the fact that the whole region of the wound was fouled with this fœtid pus the convalescence was quite uninterrupted.

A portion of the cervix was sent to the Clinical Research Association for microscopical examination and Mr. Targett reported on it as follows: "The growth from the cervix uteri is a squamous-celled epithelioma of the papillary type. There is a considerable amount of keratoid change in the epithelial processes."

A drawing of the uterus and two drawings of the section accompany this paper.

This patient writes to me every year on the anniversary of her operation. As she is now living in Australia I do not actually get the letter for some weeks afterwards. I have had a letter from her this year (1900) dated June 11th, and in it she says that she still continues quite well. The uterus shows well the enormous distension of the cavity of the body by the pus referred to above and it also shows an extensive cauliflower-like growth from the cervix extending up the cervical canal to the internal os.

CASE 24.—A married woman, aged 48 years, was admitted under my care into the London Hospital on August 21st, 1895, at the request of Dr. W. H. G. Aspland.

Previous history.—She had been married 21 years but had been a widow for 15 years. She had never been pregnant. The catamenia appeared when she was about 15 years old. She had dysmenorrhœa when she was single but suffered much less from this after her marriage. The menopause occurred about three years previously.

Present illness.—She had not been well for some time. For the last seven or eight months she had had a yellow vaginal discharge mixed with blood more often than not. She had no pain when the discharge began, but for the last two months she had pain in the left iliac region occasionally. It gradually became more severe and was also felt at times across the lower abdomen and in the lower part of the back. It was clear, however, that a blood-stained discharge and a feeling of not being in good health were for some months the only symptoms. She said on admission that she felt weaker than formerly but did not think that she had lost flesh. Her appetite latterly had not been good.

On admission nothing abnormal was detected on examination of the abdomen. On vaginal examination some blood-stained discharge was seen about the vaginal orifice and in the vagina. It was not offensive. The uterus was found to be strongly retroverted; the vaginal portion of the cervix was rather soft but otherwise normal. The uterus was easily replaced with the sound, which passed three and a quarter inches. On bimanual examination the uterus was found to be freely moveable and the body of it uniformly enlarged. On August 23rd two small laminaria tents were put into the cervix, and on the next day the dilatation of the cervix was completed under anæsthesia with Hegar's dilators up to No. 19. On passing the finger into the uterus a growth of about the size of a walnut was found projecting from the posterior wall. It had a papillary surface and was very friable, portions being easily broken off with the finger.

Operation.—Vaginal hysterectomy was performed on August 30th, 1895, the steps of the operation being similar to those adopted in the preceding cases. The pressure forceps and gauze were removed on the fourth day, and the patient made an uninterrupted recovery, leaving the hospital on Sept. 23rd.

A portion of the growth was sent to the Clinical Research Association for microscopical examination and Mr. Targett reported on it as follows: "The growth from the body of the uterus is a soft glandular-celled carcinoma which has extensively infiltrated the muscular substance. The growth is of the columnar-celled type, though the tubular arrangement of the cells is not recognisable in the section."

I had a letter from this patient in May, 1900, to say that she was still quite well. The interval since the operation is, therefore, nearly five years.

CASE 26.—A married woman, aged 35 years, was admitted into the London Hospital under my care on April 6th, 1896. She was sent to me by Dr. J. Dunlop of Purfleet. She had been married 16 years and had had eight children; the last was eight months old. She had had one miscarriage five years previously. Menstruation had always been natural.

History of the present illness.—She had found herself getting thinner lately and had had a bad appetite. About three months previously she consulted a medical man on account of a yellow vaginal discharge which she had had for some months. During the last two months the discharge had increased in quantity and had been sometimes blood-stained. She had sometimes felt a pain in the lower abdomen and back, but pain did not seem to have been a marked feature in her present illness. On April 10th she was examined under anæsthesia. On vaginal examination a "cauliflower like" growth was seen springing from the vaginal portion of the cervix. The cervix could be easily drawn down to the outlet of the vulva with a volsella, and there was a good margin of apparently healthy tissue round the growth. The body of the uterus was not enlarged. The case seemed a suitable one for radical operation.

Operation (April 16th, 1896).—The patient was anæsthetised with the A.C.E. mixture. Vaginal hysterectomy was then performed, the method adopted being similar to that described in the preceding cases. The cut margin of the vaginal wall round the cervix was thoroughly seared with Paquelin's cautery. The patient made an uneventful recovery and went home on May 23rd, 1896.

A portion of the growth was sent to the Clinical Research Association for microscopical examination and Mr. Targett

reported on it as follows: "This portion of the cervix uteri is thickly infiltrated with a soft squamous-celled epithelioma. There are no typical cell-nests but a considerable number of cell-inclusions." I have seen this patient several times since the operation; the last time I examined her was on Oct. 12th, 1899, when there was no evidence of recurrence. I have also seen her on March 15th, 1900, when she said that she was quite well, but I did not examine her on that occasion. The interval since the operation in this case is, therefore, nearly four years.

CASE 29.—This was the case of primary sarcoma of the body of the uterus which formed the subject of a communication read before the Obstetrical Society of London, and which was published in Vol. xxxix., p. 246, of the Transactions of the Society. I only refer to it here for the purpose of recording the patient's subsequent progress. I have seen her this year (March 24th, 1900), more than three years since the date of her operation, and she remains free from any sign of recurrence.

CASE 32.—The patient, aged 61 years, was sent to me by Dr. H. B. Pope of Kington, Herefordshire. She had been married many years and had had two children, the last 28 years previously. I saw her on August 19th, 1897. She gave a history that nine years previously she had a fall and that there had been more or less discharge, occasionally blood-stained, from the vagina since. For the last two months there had been a constant discharge of blood every day. About a week before I saw her she had had a flooding and was said to have lost about a pint of blood. The menopause was said not to have occurred. She had not been getting thinner. On August 20th she was examined under anæsthesia. There were several mucous polypi hanging from the cervix. The uterus was considerably enlarged and was freely moveable. As I did not think the mucous polypi could have accounted for the flooding mentioned above I dilated the cervix and found a growth in the endometrium, a portion of which was detached for examination and sent to the Clinical Research Association. Mr. Targett reported on it as follows: "The tissue from the body of the uterus is extensively infiltrated with a soft columnar-celled carcinoma. The tubular arrangement of the cells is generally well preserved, but in certain parts of the section the growth has undergone caseation." The patient was accordingly advised to have the uterus removed.

Operation (Sept. 4th, 1897).—Vaginal hysterectomy was performed as in the preceding cases; the patient made a good recovery. I examined her last on July 7th, 1900. She was quite well and there was no sign of recurrence. The interval since the operation is, therefore, two years and 10 months.

CASE 33.—A married woman, aged 38 years, was admitted under my care into the London Hospital on Sept. 4th, 1897. She had been married 19 years and had had six children, the last three years previously, and two miscarriages, the last nine years previously. The catamenia appeared when she was 16 years old. The periods lasted four days and were preceded by severe pain for three days, which was relieved on the appearance of the flow. She was never regular every four weeks till the last four years, but since the last confinement she had been fairly regular till recently.

Present illness.—This began nine weeks previously, when bleeding occurred and continued for nearly five weeks. After an interval of three or four days she had a flooding and the loss of blood continued for eight days. She had had no pain but had been getting thinner the last six weeks, and her appetite during that time had been poor.

On examination (Sept. 5th, 1897) there was seen some blood about the external genitals. There was slight prolapse of both vaginal walls. There was marked enlargement of the anterior lip of the cervix, which was three or four times as thick from before backwards as the posterior lip. The growth on the anterior lip was raised and in shape like a horseshoe with the convexity forwards. The growth bled easily on examination and the sound pressed against it readily penetrated its substance. The body of the uterus was of normal size and the uterus was freely moveable.

Operation (Sept. 6th, 1897).—Vaginal hysterectomy was performed as in the preceding cases. She made a good recovery and left the hospital on Oct. 1st, 1897. Sections of the growth were prepared by the Clinical Research Association and reported on by Mr. Targett as follows: "The substance of the cervix uteri is extensively invaded with thick branching processes of squamous-celled epithelioma."

I last examined this patient on June 21st, 1900, at the London Hospital. She was then quite well and there was no sign of recurrence. The interval since the operation without recurrence is, therefore, two years and nine months.

CASE 36.—A married woman, aged 46 years, was admitted into the London Hospital under my care on Nov. 27th, 1897. She was sent to me by Mr. A. O. Honnywill of Sutton, Surrey. She had been married 27 years and had had four children, the last 19 years previously. She had a flooding in the last week of August, 1897; the loss of blood continued for three weeks; there was then an interval of three weeks without any loss. The bleeding then began again, and since then she had been losing blood almost constantly. She thought that she had been getting stouter.

On examination it was found that the anterior lip was the seat of a growth about equal to half-a-crown in area. The growth was raised and had an overhanging margin. The whole anterior lip from before backwards measured one inch and three eighths, the posterior lip similarly only three-eighths of an inch. The sound pressed against the growth readily penetrated its substance. Two small hard nodules were felt under the mucous membrane, one to the right of and the other above the growth. The uterus was freely moveable and there was no evidence of extension of the disease to the broad ligaments or utero-sacral ligaments.

Operation (Dec. 2nd, 1897).—Vaginal hysterectomy was performed, the method adopted being the same as in the preceding cases. Paquelin's cautery was used to sear the cut edges of the vaginal walls. There was slight pyrexia for the first fortnight after the operation, the highest point reached being 101° F. on the evenings of Dec. 6th and 7th. After the 7th the temperature was normal. The patient did well and went home on the 29th.

A portion of the cervix was sent to the Clinical Research Association for examination and Mr. Targett reported on it as follows: "The growth in the cervix uteri is a malignant adenoma, that is, a columnar-celled carcinoma in which the cells preserve their tubular arrangement. The tissues are deeply invaded and there is much small-celled growth around the proliferating tubules." I last examined the patient on March 22nd, 1900, at the London Hospital. There was no sign of recurrence and she expressed herself as feeling quite well. The interval since the operation is therefore two years and nearly four months.

CASE 39.—The patient, a married woman, aged 36 years, was admitted under my care into the London Hospital on Feb. 4th, 1899. She had had eight children, the last 11 months prior to her admission. She had also had two miscarriages. Her chief symptom had been a red vaginal discharge which had been present for 15 months. At times the bleeding had been severe. She had also had pain in the left iliac region for 10 months. She was suckling at the time of her admission. On Feb. 9th, 1899, the following note was made: "On the vaginal portion of the cervix is a raised and slightly irregular crescentic growth. It involves chiefly the left side of the vaginal portion immediately adjacent to the external os and about two-thirds of the posterior lip. It has an overhanging margin. About the middle of the anterior lip a little nodule, the size of a shot, is felt under the mucous membrane, the surface of which over the nodule is healthy. There is another similar nodule to the left of the first. There are also two nodules to the right under the mucous membrane of a similar character. The sound pressed against the crescentic growth enters its substance to the depth of an inch. The uterus is freely moveable, retroverted, and its body not enlarged. There is no evidence that the growth has extended beyond the limits of the cervix."

Operation.—On Feb. 16th, 1899, vaginal hysterectomy was performed in the same way as in the preceding cases, Paquelin's cautery being used to sear the cut edges of the vaginal wall. The forceps were removed on the 20th. Slight bleeding occurred, so that the region of the wound was exposed with Sims's speculum. A pair of Wells's small pressure forceps was used to secure the bleeding point. This pair was left on for two days and then removed. No further bleeding occurred. The temperature only rose above 99·5°F. on two occasions; one was on the evening of the 20th and the other was on the evening of the 22nd, when the temperature was 100·2° and 100° respectively. The patient went home on March 15th.

A portion of the growth was sent to the Clinical Research Association for microscopical examination and Mr. Targett reported on it as follows: "The cervix is very extensively

invaded with squamous-celled epithelioma. Some of the epithelial processes are large, and the central cells have undergone granular degeneration. In others there are small cell-nests."

I examined this patient on July 26th, 1900, and found no sign of recurrence. The interval since the operation in this case is therefore one year and five months.

Harley-street, W.

A CASE OF DEFORMITY OF THE SKULL SIMULATING LEONTIASIS OSSEA, ASSOCIATED WITH A CONDITION OF SYRINGOMYELIA; NO PHYSICAL SIGNS OF SYRINGOMYELIA PRESENT.

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THE following case is of peculiar interest as it exemplifies (1) the presence of syringomyelia in the absence of all the usual signs of that condition, and (2) a close simulation both in signs and symptoms of leontiasis ossea by a thin, deformed skull and meningeal ossification. I am indebted to Sir William Gowers and to Mr. Victor Horsley for permission to publish the notes, and to Dr. F. E. Batten for the pathological report.

A man, aged 36 years, was admitted into the National Hospital for the Paralysed and Epileptic, under the care of Sir William Gowers and Mr. Horsley, on March 7th, 1899, complaining of paralysis of the right arm, of fits commencing in the right arm, and of gradually increasing deafness. He was the youngest of a family of 13 and there was no history of hereditary disease. When four years of age he fell from a window, a distance of 20 feet, upon his head. He was unconscious for some days and was ill for two years after the accident, and from the time of its occurrence his head was noticed slowly to become deformed. The deformity of the head, which I shall subsequently describe, was plainly visible in a photograph of the patient at the age of five years. In childhood he broke each femur on separate occasions, and since the right femur was broken he had always walked with a limp. He learned the trade of a carpenter and earned a good wage for many years. At the age of 26 years he began to suffer with occasional fits, commencing in the right hand and these occurred at long intervals till the time of his admission into the hospital. Ten years before admission progressive deafness came on, and six years before admission his right shoulder became stiff and later the elbow and wrist became similarly affected and the muscles of the right arm wasted. After three years the right arm had become so useless as to necessitate his giving up work. At this time he was a patient at Guy's Hospital under the care of Dr. Hale White, who published a full account of his case.[1] Two years before admission he had entirely lost the use of the right upper limb and the left upper limb became slightly weak. When admitted into the hospital the patient was seen to be a man of very small stature, his height being 56¼ inches. He was very intelligent and had no speech defect. He occasionally had fits, commencing in the right hand, in which consciousness was lost late, the convulsion becoming general, with biting of the tongue and enuresis. He was extremely deaf to both aerial and perosteal conduction, but otherwise the special senses and cranial nerves were normal. The pupils were equal and reacted normally. There were slight nystagmus and slight weakness of conjugate deviation of the eyes on looking to the left. There was no optic neuritis, headache, or vomiting.

Cranium.—The head was much flattened vertically and it was very broad, there being a roll-like projection which commenced in the upper and posterior part of the temporal fossa on each side and ran backwards, overhanging the ears and becoming more and more prominent until it involved the whole occipital region. This projected backwards and downwards, forming a sharp angle with the neck, which did not disappear when the head was fully flexed on the neck. It was as if the posterior two-thirds of the vertex of the skull had been telescoped on to the base by pressure from above, leaving this remarkable calvarial fold along the line of bending. With the face vertical the posterior part of the skull projected backwards 7·5 centimetres from the posterior mid-line of the neck. The upper part of each pinna was pushed down almost to the horizontal, and the lumen of each external auditory meatus was much reduced in size. The deformity of the skull was symmetrical. There was neither deformity nor asymmetry of the face (Figs. 1 and 2).

The patient's height was 4 feet 8¼ inches. The body was well formed and symmetrical, there were no lateral curvature of the spine and no pes cavus. There was slight weakness of the right lower face. The right upper extremity was very rigid, the elbow being pressed into the side and flexed at a right angle, and the fingers were rigidly flexed into the palm. The rigidity was chiefly muscular, but there were adhesions with grating on passive movement in the shoulder and elbow joints. There was marked wasting of all the muscles with no change in electrical reaction. There was complete paralysis of the fingers and wrist, but the patient could flex and extend the elbow and could move the shoulder feebly and slowly. The left upper extremity presented no abnormality. Power in the lower extremities was good, the muscles were well developed, and there was no ataxy. The man walked with a slight limp and had done so ever since the fracture of the right femur in childhood. He complained of no pain. Sensibility to touch, to pin-pricks, and to heat and cold was carefully tested over the right upper limb, and the rest of the body was roughly tested with touches and pin-pricks, but no abnormality was found. There were no sphincter trouble and no vaso-motor or trophic disturbance. The knee-jerks were brisk, the right arm jerks were exaggerated, and the left were present. There was no foot clonus. The plantar reflexes were extensor responses.

On April 10th Mr. Horsley opened the skull over the right arm centre. The bone was found to be very thin and tough and there were apparently several separate bony masses in connexion with the inner surface of the dura mater, which showed white through it. Enough of the calvarium was taken away to allow of the removal of the bony masses at a subsequent operation. The wound was then closed without the dura mater having been opened. The patient was under the anæsthetic (chloroform) for 35 minutes. He recovered well from the anæsthetic, but three hours later his respiration suddenly became embarrassed and he became cyanosed. Stimulants and artificial respiration were at once resorted to and the wound was opened, but no hæmorrhage had occurred. He rapidly became unconscious and he died about ten minutes after the respiratory failure had set in.

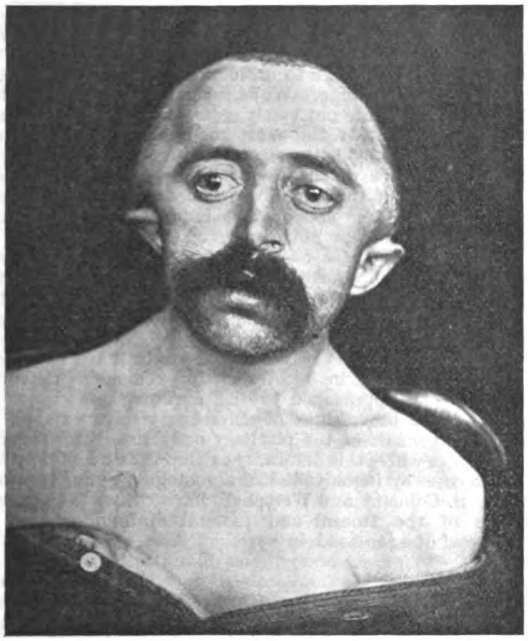
Post-mortem examination.—Permission to examine the thorax and abdomen was not obtained. The right shoulder-joint and inter-phalangeal joints of the right index finger were examined and no adhesions or other abnormalities were found. The spine was normal. On removing the spinal cord and dividing it below the medulla a large central cavity was seen lined by a smooth membrane. On opening the skull the dura mater, which was not adherent to the convolutions, was found to be much thickened, especially at its junction with the tentorium, and was of a dark colour. Over the whole of the left parietal region it was hard and contained several eggshell-like bony plates, the largest of which measured 8 centimetres by 6 centimetres, and was situated over the central convolutions. The brain, of a similar peculiar shape to the skull, was soft, and after hardening in formalin it showed no other abnormality than slight dilatations of the lateral ventricles, especially at the anterior horns.

Microscopical examination.—The cavity in the medulla and spinal cord was first noticeable in transverse sections, immediately below the inferior olive on the left side. Traced downwards it became rapidly larger, and in the upper cervical region it measured 10 millimetres in the transverse and 2 millimetres in the antero-posterior direction. It attained its maximum size at the fifth cervical segment, below which level it became smaller and occupied the posterior horn on the left side and disappeared at the level of the eighth cervical segment to reappear at the fourth dorsal segment in the left posterior horn. It disappeared at the sixth dorsal segment. From the medulla to the sixth dorsal segment the cord was much flattened, but below this level it was of normal appearance. The large cavity in the cervical region

[1] Brit. Med. Jour., 1896, vol. i., p. 1377.

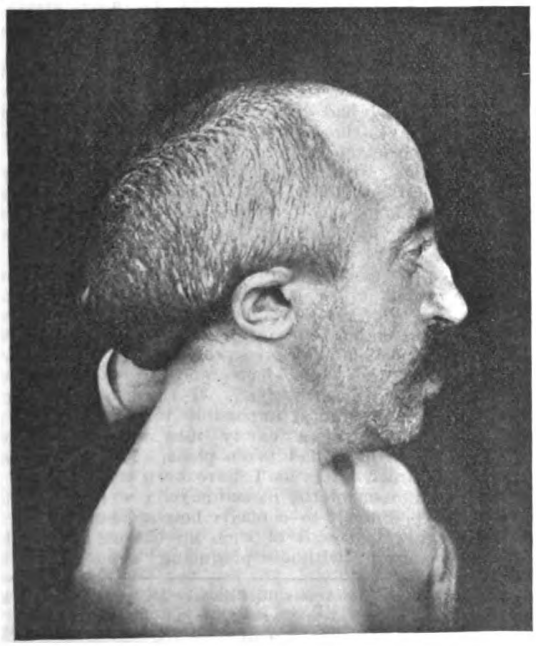
was lined by columnar epithelium; the smaller cavity in the left posterior horn had no such lining, but was surrounded by a simple structureless membrane. The cortex of the left central convolutions was normal. A few recently degenerate fibres were found in either pyramid, and more numerous recently degenerate fibres were seen in the antero-lateral tracts of the cord. There was marked old degeneration in the right pyramid, which could be traced down as far as the lumbar region. No abnormality was found in the nerve cells by Nissl's method.

FIG. 1.



Front view of head, showing the prominence above the ears, which are displaced.

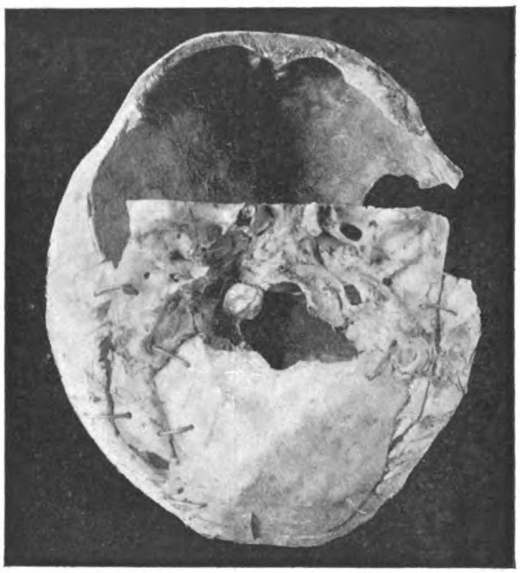
FIG. 2.



Side view of head, showing deformity posteriorly.

Description of the macerated skull.—The whole skull was very shallow, its maximum height when resting on the table being 12 centimetres. It was very broad, the breadth increasing abruptly at the coronal suture, and being greatest in the region of the parietal eminences (Figs. 3 and 5).

FIG. 3.



Macerated skull seen from below, showing the flattening of the base and the abnormal breadth.

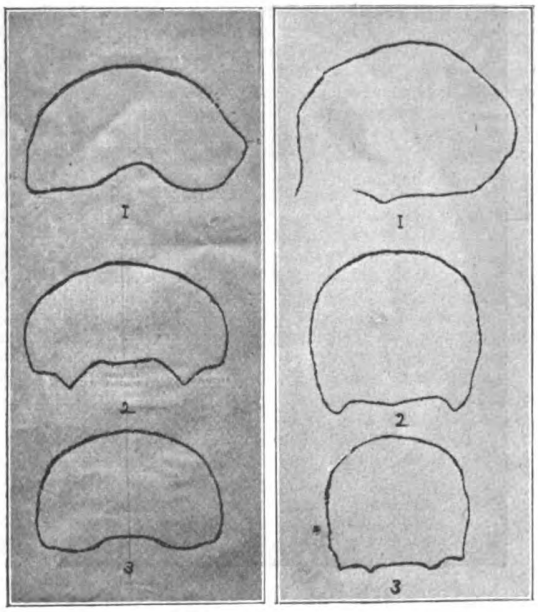
The maximum breadth was 17 centimetres and the maximum length was 20 centimetres. The posterior extremity of the skull was the lambda which projected sharply as a broad blunt beak (Fig. 4). The base was extremely large and flat and it included the whole of both squamosal bones and almost the whole of the occipital bone. The external auditory meati, which looked directly downwards, were situated 5 centimetres internal to the lateral edge of the base of the skull. In the centre of the base was a large depression, 7 centimetres by 6 centimetres, in which were situated the foramen magnum, occipital condyles, and basi-occipital bone, with the anterior condylar

FIG. 4.

Macerated skull seen from the side, showing the projection in the lambdoid region.

and posterior and middle lacerated foramina. The shape of the whole skull may be compared with that of a mushroom from its round shape, its flat base with central depression and the overhanging bluntly rounded edge at the junction of the vertex and base. The bony processes at the base were poorly developed. The superior surface of the base showed a marked projection corresponding with the above-mentioned depression. Seen from within, the junction of the vertex and base formed an acute angle from the spheno-squamosal suture backwards. The line of this angle extended from the uppermost limit of the parieto-squamosal suture on either side to the lambda. The mastoid and pterygoid processes were very small. Large anterior and posterior interparietal bones were present. The parietal bones were unduly large, whereas the occipital and temporal bones were very small. Along the line of the coronal suture were several large Wormian bones, and in the squamo-parietal and occipito-parietal suture were hundreds of Wormian bones forming a continuous band from 3 centimetres to 5 centimetres broad (Fig. 6). In the lower parietal region, in the squamosal region, and in the ex-occipital region the bones were very thin, but in the region of the sagittal suture and in the frontal and lambdoid regions they were of normal thickness.

FIG. 5.



A. Tracings of the outline of the skull. 1, Antero-posterior diameter. 2, Coronal at the level of the mastoid processes. 3, Coronal at the level of the occipital condyles.
B. Tracings of the outline of a normal adult skull. 1, Antero-posterior diameter. 2, Coronal at the level of the mastoid processes. 3, Coronal at the level of the occipital condyles.

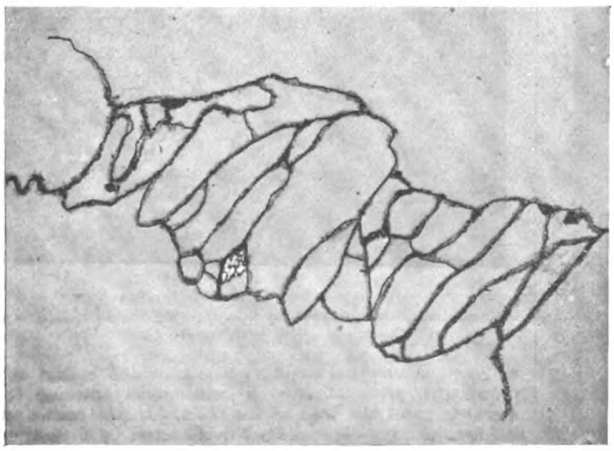
There are several points of considerable interest and still greater difficulty in this case:—

1. The usual signs of syringomyelia were absent, though it must be allowed that the examination of sensibility was not sufficiently thorough to exclude absolutely the presence of some sensory change. While fissuring and central gliosis of the spinal cord are not rarely met with in the absence of symptoms, they are found most commonly in children and are accompanied by little or no distension of the cavities present. Absence of the usual symptoms, where there is such distension of the spinal cord as occurred in this case, is very rare. Baumler[2] collected 25 recorded cases in which the syringomyelia was not discovered till the necropsy, but in only a few of these cases was the clinical record complete. Turner and Mackintosh[3] record a case with necropsy in which, as in this case, there was left hemiparesis without local muscular wasting, but in this case the condition of sensibility was orthodox.

2. Deformities of the skull appear to be rare in cases of syringomyelia and in most of the recorded cases the deformity has approached to the acromegalous type.[4] In some of these other signs of acromegaly have existed, and since enlargement of the pituitary body has been found in several cases where this deformity existed it is considered that in these cases syringomyelia and acromegaly occur together.[5] Dr. W. S. Colman[6] and Westphal[7] have drawn attention to bossing of the frontal and parietal eminences and prominence of the forehead in syringomyelia. During the last three years four cases of syringomyelia in the wards of the National Hospital for the Paralysed and Epileptic presented marked cranial deformity, which was said to have come on after the symptoms of syringomyelia were declared. One of these patients had well-marked signs of acromegaly and the deformity of the skull was of the acromegalous type; the other three cases presented steep overhanging foreheads with frontal and parietal bosses, closely corresponding to Dr. Colman's description. In two of the cases the diagnosis was verified. Owing to the severity of the pain laminectomy and puncture of the spinal cord, to relieve pressure, were performed with the most successful result.

The skull in this case presented features altogether different from those just mentioned, and since the deformity was plainly visible at the age of five years and had not appreciably altered, to the patient's knowledge, since that time, one is led to look for the cause of the deformity in the severe injury which had occurred in infancy. The calcified plates in the dura mater might also have resulted from hæmorrhage occurring at the time of this injury. Could the condition of syringomyelia have been caused by this injury? The cavities in the cord involved the posterior horns—regions where hæmorrhage takes place most commonly and spreads most easily in the spinal cord. A lining membrane of columnar epithelium present in the upper cavity and absent in the lower cavity of this spinal cord is said to be no criterion as to the mode of origin of such cavities. Cases in which typical progressive syringomyelia developed from hæmatomyelia are on record and have been verified. In these cases, however, it seems almost impossible to exclude the pre-existence of a cavity into which subsequent hæmorrhage had taken place. Moreover, in such recorded cases as I have been able to find the symptoms of the hæmatomyelia were permanent. It is difficult to conceive how a hæmorrhage into the spinal cord of such an extent should have occurred without producing some permanent

FIG. 6.



Some of the Wormian bones in the lambdoid suture. (Natural size.)

[2] Deutsches Archiv für Klinische Medicin, Band xl., 1887.
[3] Brain, 1896, vol. xix., p. 322.
[4] Hotschewnikoff and Recklinghausen, Archives de Virchow, tome cxix., 1890.
[5] Ibid.
[6] THE LANCET, May 6th, 1899, p. 1205.
[7] Brain, vol. vi., p. 154.

alteration of the functions of the spinal cord, and this patient led an active artisan's life for 15 years, having no signs of paraplegia. Another difficulty present is that no local pathological condition in the brain was found to account for the occurrence of the localised epilepsy.

It has been several times noted that some patients with syringomyelia bear operations and anæsthetics badly, and in a few reported cases, as in this one, an unexpected and rapid fatal result has occurred.

Wimpole-street, W.

FILARIASIS AND ITS CONSEQUENCES IN FIJI.

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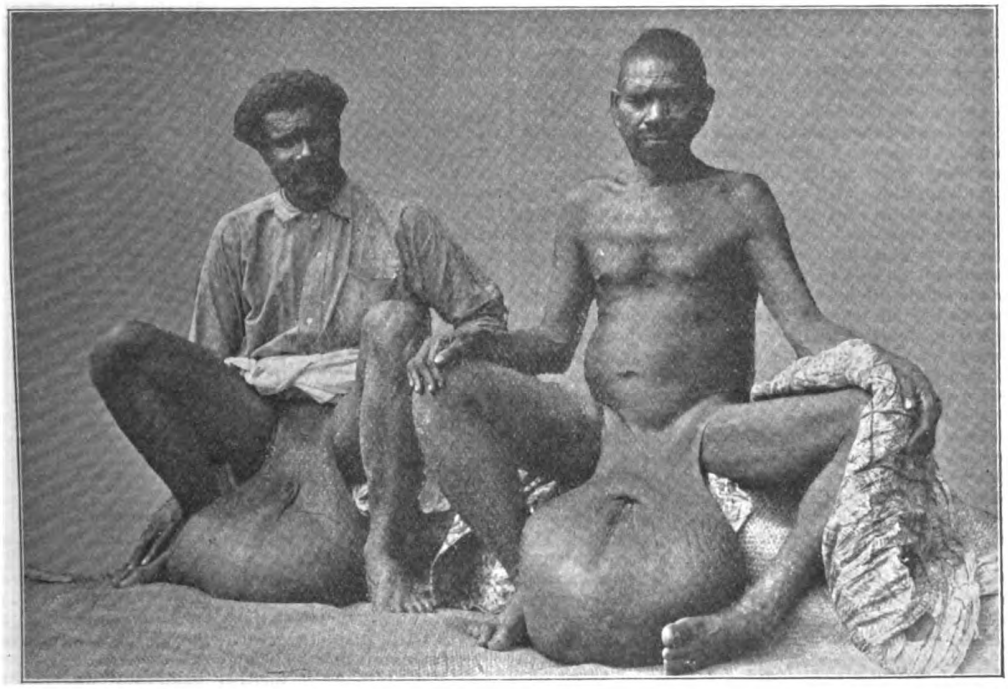
GOVERNMENT MEDICAL OFFICER AND PROVINCIAL INSPECTOR OF THE PROVINCES OF TAILEVU AND RA.

THE prevalence of filariasis amongst natives and Europeans and its commonest result, elephantiasis of the scrotum, in the South Seas, and especially in Fiji, lead me to think that a description of the operation as usually performed in the Colonial Hospital at Suva, Fiji, would be of interest to your European readers. The illustrations[1] which accompany these notes will show the formidable nature of the condition.

The patient being placed under deep anæsthesia—chloroform is invariably used in Fiji with good results—the scrotal tumour is well lifted up by an assistant and an Esmarch's elastic tourniquet is tightly pulled around the base or pedicle of the tumour; a couple of turns are necessary. The ends of the elastic tourniquet are brought obliquely across Poupart's ligament above the crest of the pelvis to unite behind or at the side, and undue pressure is prevented by padding near the various bony points with cotton-wool. There is now before the operator a huge scrotal mass, in the upper and central portion of which there is a circular depression, the preputial orifice, at the bottom of which is the penis deeply buried in the surrounding elephantoid growth. The index finger of the left hand is now introduced into this circular opening and the glans penis is felt. A curved, blunt-pointed bistoury is now passed along a grooved director or the finger above the glans penis, which is thus avoided, and the skin and subcutaneous tissues freely divided for from one and a half inches to two inches. The glans penis is then seized and drawn forward and isolated and a No. 8 silver catheter is passed, an assistant holding the penis well dragged forward on the catheter and raised towards the abdomen. The penis is then dissected out, the surgeon removing freely all elephantoid prepuce and in clearing it the catheter acts as a safe guide in avoiding the urethra, a wound of which might readily be made in its absence. When this is completed the penis with catheter *in situ* is held well up by an assistant over the abdomen. A long incision is then made from the external abdominal ring over the centre of each testicle almost to the lower margin of the scrotum. A largish strong scalpel or small-sized amputating knife will be found best for dividing the large, thick, and indurated elephantoid scrotum which is so commonly found in chronic cases coming for operation. A free cutting incision must be made the whole length of the first skin incision. Numerous transverse fibrous bands will be met with and require division, and the knife, if not firmly held, will be apt to slip, as there is a continuous exudation of varying quantities of serous and blood-stained fluid. The tunica vaginalis being readily recognised is freed at its lower end and dissected out with its contents by a process of tearing and cutting. Some care is required in dissecting out the cord and removing masses of elephantoid gelatinous tissue adhering to it; a few large veins also sometimes require ligature. It is very rare to find cases of elephantiasis requiring operation in which there is not a hydrocele. In fact, as a rule the hydrocele is very large, accounting in a good many cases for the size of the tumour.

It is now necessary, having dissected out both testes and cord right up to the external abdominal ring, to evacuate the contents of the hydrocele with a trocar and canula, afterwards cutting away the thickened elephantoid tunica vaginalis, leaving only the testis and cord on each side. Both testes being held up over the abdominal wall, the operator proceeds to fix the base of the tumour by skewers introduced as high up as possible, so as to avoid all



Two typical cases of elephantiasis of the scrotum.

[1] We have selected for reproduction one from the many interesting photographs sent to us by Mr. Finucane.—ED. L.

elephantoid tissues, but immediately below the tourniquet. He passes the point of the skewer transversely across the perineum, guided by his left index finger. He carefully avoids the urethra which might easily be transfixed if care were not taken and he makes the point emerge as high as possible on the opposite side at a point corresponding to the entrance wound. A strong cork is then put on the point of the skewer to avoid injuring the left leg. The second skewer is introduced on the left side and as near the posterior part of the perineum as possible; it is similarly dealt with and secured on the right side by another cork. These skewers act as a hold on the perineal skin after division of the tumour and prevent retraction of the mass and play an important part in preventing hæmorrhage; in fact, the removal of the largest elephantiasis can be carried out in an almost bloodless way if this course is pursued. The surgeon then divides the tumour about a line's length below the lower skewer, cutting freely through the growth in front and working circularly around the tumour, dividing last the retracting perineum. Were it not for the skewers on removal of the growth the retracting perineum would slip through the Esmarch's tourniquet and considerable hæmorrhage delay the completion of the operation. The vessels are now picked up one by one and tied at once, in largish tumours as many as 20 or 30 being met with requiring a ligature. The skewers are now removed, the tourniquet is loosened, and general oozing is dealt with, of which sometimes there is a considerable quantity from enlarged veins about the testes and cords. The edges of what is really part of the perineum and inner sides of the thigh are now brought together and the paucity of skin is sometimes alarming, leading the operator to fear whether he may be able to accommodate the now swollen testes. The skin, however, here is readily adaptable and a good scrotum can always be fashioned.

In native Fijians it is rarely necessary to drain the new scrotum; wire and silk sutures are put in the whole length and as much of the denuded penis covered up by surrounding healthy skin as is possible. Healing of the scrotum by first intention is the rule, but owing to the necessity of granulation of the penis the recovery in Fiji after this operation is rarely completed under three months. In operating on an elephantiasis of the scrotum the possible presence of a hernia complicating matters must be carefully borne in mind. It is not a common experience in Fiji, but nevertheless does occasionally occur. Fijians as a rule do not come for operation until the growth is large and it is unusual for any to be seen in the Colonial Hospital under 10 lb. in weight, and some cases have been enormous, one recorded by Sir William McGregor weighing 100 lb.

As to the clinical history of filariasis and its results in Fiji, it is prevalent all over the Fijian group and attacks every race, being, of course, more common among native Fijians. It is to be seen in its most virulent forms in low-lying, swampy districts, such as on the Rewa Delta. It is almost impossible to find an adult person free from elephantoid enlargement of some portion of the body in the coast towns of Ra province, and it is extremely common in the mountain villages of Colo in Viti Levu. Needless to say, bush, town swamps, stagnant water, and mosquitoes abound in all Fijian villages.

Cutaneous and deep lymphatic varix and orchitis, lymph scrotum and elephantiasis, are all to be met with in varying stages of the disease. Elephantoid enlargement of the leg, the arm, and the breast is very common amongst Fijian women, and the disease is occasionally met with attacking the vulva. Every growing Fijian child suffers periodically from "wagaga," which is simply an attack of lymphangitis, generally occurring in an extremity, an arm or a leg, but most frequently in the male it affects the testicle or cord, suggesting a commencing "epididymitis." With this "wagaga" there is fever, headache, and general malaise. It is not common to be able to define or see the inflamed lymphatic cord in the native, though amongst Europeans and half-castes it is nearly always noticeable. The commonest result in these cases is the formation of an abscess which terminates the attack, and the patient returns to his ordinary health to await another outburst of filariasis, most Fijians being liable to four or five such attacks annually. It would be rare to find a Fijian who did not bear on his body the many previous scars of former filarial abscesses, either opened by a surgeon's knife or by the natural process of suppuration, or more commonly as the result of his own incision by a sharpened bamboo. The character of the abscess is small and circular, and on excision there exudes thick, creamy pus, followed by a small clot or flow of blood, suggestive of embolic plugging of an area of capillary or lymphatic tissue. Other cases I have seen where the lymphangitis stopped short of suppuration, producing diffuse matting together of the tissues of the abdominal wall, and where the patient passed rapidly into a septic condition and died. In the earlier stages, before any local symptoms show themselves, these cases are extremely puzzling and much resemble the remittent form of malaria, a disease happily almost unknown in Fiji.

The chronic variety of filariasis producing elephantiasis is next to abscess the commonest form in Fiji and for it the operation described above has to be frequently performed. Chyluria is rare in Fiji and the filarial attacks more commonly result in the other conditions already described.

Quinine is given with good effect in acute filarial attacks and at the same time local remedies are employed.

A CASE OF MOLLITIES OSSIUM WITH SPONTANEOUS FRACTURE THROUGH THE GREAT TROCHANTER OF THE LEFT FEMUR.

BY J. HOGGAN EWART, M.D. EDIN.

THE following case presents many points of interest.

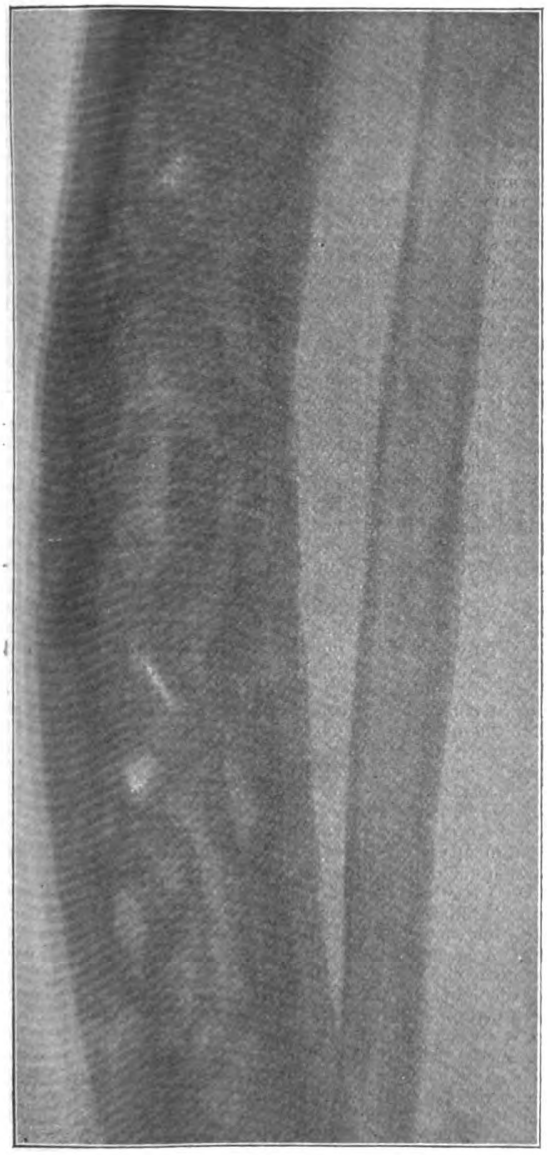
The patient was a widow, aged 65 years. Her mother had died from cancer at the age of 50 years. There was no history of bone troubles in the family. The patient had always had very comfortable surroundings. She had had no severe illnesses, but had suffered from menorrhagia for several years and a polypus was removed from the uterus 14 years ago. She had had 10 children, but with the exception of the first confinement, which was tedious, there was nothing to note. She had always led a very active life. 14 years ago she first noticed that her left ankle was thicker than the right, and she showed it to a medical man who told her not to worry, and she left it alone for two years, when she showed it to Dr. Douglas of Newbury, who has kindly sent me a note to the effect that she consulted him for rheumatism and he discovered a yielding of the tibiæ and warned her that if she persisted in walking she would find herself with broken bones. She did not trouble herself much, but gradually she noticed that the right shin-bone was becoming very bent like the left. However, she managed to get about with the help of a stick. On March 1st last she suddenly felt a pain in the upper part of the left thigh and associated it with a small lipoma which had existed for years. The pain increased and she saw a medical man who told her that it was rheumatism and ordered hot fomentations and massage, but on March 15th while walking with a stick and leaning on her daughter's arm they both heard a crack and the patient subsided on to the ground. I saw her shortly after the accident and diagnosing an extra-capsular fracture of the left femur put the limb up on a Liston's long splint with weight extension and gave a very guarded prognosis. I noted great deformity affecting the left side of the pelvis, both femurs, and both tibiæ; all the other bones, however, were normal. The urine showed a marked increase in phosphates. About three weeks after the accident a skiagram was taken (see Fig.), which showed the fracture which had taken place through the great trochanter of the left femur. The splint was removed at the fifth week and sand bags were substituted.

At the ninth week another skiagram was taken which showed that the fracture had united with osseous union, a large amount of callus having been thrown out. This condition could also be verified by manipulation. A third skiagram was taken which showed the deformity affecting the left tibia (see figure). This skiagram is interesting in that it shows the effect of the disease on the texture of the bone. It will be seen that the tibia is more pervious to the x rays in some parts than in others, so that it presents a mottled appearance. The fibula appears to be unaffected. (Note that the fibula should normally appear as a shadow over the length of the tibia, the skiagram having been taken from the inside.)

The patient is now (11 weeks (?) after the accident) able

to go out in a chair and suffers no pain. She does not put any weight on the legs for fear the tibiæ might give way.

The following measurements are worthy of note. Left leg: from the anterior superior spine to the internal malleolus, 30½ inches; from the anterior superior spine to the ischial tuberosity, 11 inches; circumference at the knee, 14 inches; at the calf, 11¼ inches. Right leg: from the anterior superior spine to the internal malleolus, 31½ inches; from the anterior superior spine to the ischial tuberosity, 10 inches; circumference at the knee, 13¼ inches; at the calf, 10¾ inches. Interspinous, 14 inches.



The osteo-malacious left tibia. The skiagram has been taken from the inner aspect of the limb, as is obvious from the relation of the bones to each other.

The special points in the case are (1) the duration of the disease (14 years) with so little discomfort; (2) the small number of bones affected—viz., the left side of the pelvis, both femurs, and the tibiæ; and (3) the age of the patient (65 years) and the fact that callus was thrown out and union occurred in nine weeks.

My thanks are due to Mr. Stainer of this town who kindly took the skiagrams.

Folkestone.

A CASE OF COBRA-POISONING TREATED WITH CALMETTE'S ANTIVENINE.

BY W. HANNA, M.A., M.B. R.U.I., D.P.H. CANTAB.,
AND
GEORGE LAMB, M.B. GLASG.,
CAPTAIN, I.M.S.
(From the Research Laboratory, Bombay.)

THE following record of a case of cobra-poisoning is of interest inasmuch as the identity of the snake was without doubt. All the symptoms were carefully noted from the beginning, and the only treatment employed was the injection of Calmette's antivenine.

On Oct. 6th, 1900, one of us was assisting in the extraction of poison from a full-sized cobra. Before proceeding to compress the glands in order to expel the poison the operator was clearing away some mucous secretion from the neighbourhood of the mouth. This was being done with a small piece of cotton-wool held in the naked hand. The snake at the time was firmly held just behind the head in the hand of an experienced native snake-man. By some means or other the snake buried its right fang through the cotton-wool into the point of the operator's right thumb. The thumb was withdrawn practically instantaneously, but, as the after-history will show, not before a considerable quantum of poison had been injected. It is worthy of note that immediately afterwards four large drops of venom were pressed from the left gland, while none was obtained from the gland of the opposite side. As the wound was at first considered to be a trifling one, and as the snake was not believed to have injected any poison, no local treatment was employed except sucking the wound. This was done thoroughly and free bleeding occurred.

On the advice of Mr. Haffkine, at from 20 minutes to half-an-hour after the bite 18 cubic centimetres of Calmette's antivenomous serum were injected, half into each flank. This serum, which was from four to five years old and had been in Bombay as the property of the Bombay Natural History Society for about four years, was the only serum available at the time. It may be stated here that some experiments on rats, made by us some few days previously to the accident here recorded, had shown this serum to have deteriorated to such an extent that it only retained about one-fourth of the neutralising power which Calmette's standardisation had ascribed to it. These experiments, along with others which are at present in progress, will form the subject matter of another communication. About two and a half hours after this dose of serum had been administered some general symptoms of cobra-poisoning referable to the nervous system set in. In chronological order these were as follows. There were first disinclination to work and lethargy, and then followed nausea and vomiting, accompanied by slight paresis of the legs. While these symptoms were still present some fresh serum, dated May 8th, 1900, was procured. Ten cubic centimetres of this were at once injected into the left flank; that is, about three and a half hours after the bite. Nausea and weakness of the legs continued for some time. From two to three hours, however, after the second dose of serum all symptoms had passed away.

Locally at the moment of injection there was much pain at the site of the wound. This pain increased and was soon followed by considerable swelling of the whole of the thumb, which in a few hours became exceedingly tense and very painful. There was much extravasation of blood into the tissues around the puncture, while a bloody exudation oozed out from the wound for 24 hours at least after its infliction. During this time also there were pain and tenderness along the tract of the median nerve into the axilla; tenderness was especially well marked at the bend of the elbow and in the axilla. There was also some anæsthesia of the anterior surfaces of the three and a half outer fingers, the superficial finger distribution of the median nerve. There was neither enlargement nor tenderness of any of the lymphatic glands. It soon became apparent that a slough was going to form round the site of inoculation. This slough became demarcated in a few days. It was of the size of a threepenny-piece. It came away in about three weeks' time and left a hole a quarter of an inch deep. This wound has

gradually granulated up and now (six weeks after the accident) it is nearly healed.

The case is an interesting one and worthy of record as one in which the identity of the snake was beyond doubt; and further, the case was under observation from the first, and symptoms, both local and general, were carefully noted as they appeared. It also points to the efficacy of Calmette's serum when fresh, even when general symptoms have appeared and in spite practically of no local treatment, not even a ligature.

The following conclusions can be drawn:—1. That great care is required in handling poisonous snakes. 2. That the puncture of a fang of a passive snake is not to be neglected, as a considerable amount of poison may be forced out from the gland through reflex action, initiated by simple pressure on the fang. 3. That thorough sucking of the wound is of little avail as a local treatment; the poison lies deep, is viscid, and the bleeding in all probability takes place from superficial vessels. 4. That it is advisable to keep a stock of *fresh* antivenomous serum in dispensaries in India, and the use of this serum is not to be neglected even after general symptoms have set in.

Bombay.

MEMBRANOUS ŒSOPHAGITIS;

EXPULSION OF A COMPLETE CAST OF THE ŒSOPHAGUS.

BY NATHAN RAW, M.D. DURH., F.R.S. EDIN.,

MEDICAL SUPERINTENDENT OF THE MILL-ROAD INFIRMARY, LIVERPOOL.

(*With Coloured Illustration.*)

THE following most remarkable case occurred in a man aged 46 years, a labourer, who was admitted into the Mill-road Infirmary, Liverpool, on April 10th, 1900, complaining of pain beneath his sternum and difficulty in swallowing. For several years he had been a heavy drinker and had always drunk neat whisky, which invariably caused a burning sensation in his throat and down the line of his œsophagus. During the last six months he had had increasing difficulty in swallowing solids, and on admission to the infirmary he could only swallow fluids. When asked why he continued to drink when it caused him pain he replied that it gave him a "feeling of satisfaction," that the neat whisky did him good. On April 16th after a violent fit of coughing he vomited a complete cast of his œsophagus eight and a half inches long. It was very foul-smelling and of a dirty greenish appearance. The nurse stated that he nearly choked in endeavouring to expel it, but that he seized it with both hands and dragged it out.

Etiology.—Inflammation of the œsophagus is caused by the immediate contact of irritants swallowed, especially hot liquids, corrosive fluids, and by the continued action of irritating substances repeatedly swallowed, such as strong alcoholic drinks (Fitz). In this case the patient had practised a foolish custom (only too prevalent in Liverpool) of drinking neat brandy and whisky and at times rum, more especially in the early morning.

Morbid anatomy.—Follicular, fibrinous, and diphtheritic inflammations of the surface of the œsophagus occur, whilst still another variety is the phlegmonous inflammation of the connective tissue of the wall. I am inclined to think that my case is one of the latter variety.

The number of cases on record of this rare disease is very few and I have only been able to find five others, and no previous case in this country has, so far as I know, been described.

The condition known as exfoliative or desquamative inflammation of the œsophagus, or by the term most recently applied, "œsophagitis dissecans superficialis," was first described by Birch-Hirschfeld in Ziemssen, vol. viii., page 140. In this remarkable case a woman vomited a complete cast of her œsophagus, which on examination was found to consist of the epithelial layer infiltrated with round cells. In Reichmann's case this epidermoid layer was free from leucocytes, whilst Fitz records a similar condition which was exfoliated from the gullet of an infant who had taken a dose of chloral. Rosenberg reports a case where the mucous membrane was both streaked with blood and infiltrated with leucocytes. Sclavunos reports a fifth case in which the epidermic tube was inverted.

Phlegmonous œsophagitis is a suppurative inflammation of the submucous layer. A circumscribed abscess in the submucous tissue results or the pus completely encircling the œsophagus may follow its length even to the stomach (Fitz). After separation of the slough healing takes place, scars result, and if the corrosion has extended to the muscular coat, extreme, or as in the present case complete, stenosis follows.

Symptoms.—On admission the patient was a thin spare man, having the appearance of recent emaciation. His weight was exactly 100 lb. Six months previously he first noticed some difficulty in swallowing solids. Lately he had noticed that anything of a solid nature seemed to stick at the lower part of his œsophagus, although he never had any regurgitation of food. Cold liquids produced pain during transit and for this reason he had taken warm drinks. On April 1st he vomited a large quantity of blood-stained fluid. On admission he had tenderness on pressure along the line of his gullet and pain of a diffuse nature, especially on attempting to swallow. Stricture or some malignant disease was suspected, but a soft rubber stomach-tube passed quite easily into the stomach without pain or discomfort. He preferred the upright position and always sat up in bed with his head fixed and rigid. A diagnosis of spasm of the œsophagus with alcoholic gastritis was made and he was fed on carefully warmed nutritive fluids.

On April 16th, or six days after admission, he had a violent fit of coughing and after some difficulty he vomited up a complete cast of his gullet, the patient himself forcibly pulling it out of his mouth.

The cast weighed two and a quarter ounces, was of a dirty-greenish appearance, and was streaked with a purulent coating of blood-stained pus. The smell was most offensive and some disinfectant had to be added at once. It had all the appearance of a complete œsophagus, but on examination the muscular layer was not present. The patient coughed and vomited up a good deal of purulent matter and seemed much relieved, but the pain on attempting to drink any fluid was so intense that he was afraid afterwards to try. He was fed on nutrient enemata for two or three weeks, when he again was able to swallow some fluids without much pain, but was only able to get down a very small quantity at once. He was losing flesh rapidly and it was quite evident that he had considerable stenosis of his gullet and that it soon would be complete. Accordingly it was thought desirable that if the operation of gastrostomy was to be performed it had better be done whilst he had some strength to bear it. He readily consented.

Operation.—Under ether on May 12th the usual incision was made for gastrostomy by Albert's method. The stomach was found to be retracted and collapsed, and it was with some difficulty that I was able to draw out a long conical diverticulum of the anterior wall. The parietal peritoneum and the posterior layer of the sheath of the rectus were then sutured around and through the walls of the stomach down to the mucous coat, and the suture was pulled moderately tight. A second small incision was made above and on a level with the costal cartilages and the skin was separated from the subjacent parts. The diverticulum of the stomach was drawn up under the skin to the second incision, and its apex was fixed with a few sutures after a small opening had been made into the stomach and a rubber tube inserted. The first incision was then completely closed and covered with gauze and sealed with collodion. The patient was fed at once with one pint of milk, beef juice, and some brandy through the tube, as he was rather collapsed.

The operation was quite successful, as the incision healed by first intention, and the sutures were removed on the eighth day. He recovered nicely for a time and was able to feed himself regularly, but three weeks after the operation he commenced to regurgitate large quantities of gastric juice followed by the food in a form which except for the curdling of milk did not appear to be altered.

After-progress.—It was evident that despite washing out his stomach regularly with an antiseptic and the most careful feeding he was not able to digest food, and it occurred to me that perhaps the mucous membrane of his stomach and intestine might be similarly affected. He was in addition fed per rectum as he could not swallow at all, there being complete stenosis of the gullet. He accordingly slowly went down hill and died from asthenia six weeks after the operation. His weight at death was 87 lb.

Necropsy.—A post-mortem examination was made 24 hours after death. The body was greatly emaciated. The digestive

organs were removed *en masse* for careful examination. The stenosis of the œsophagus was complete from the upper third right up to the pharynx. Below, down to the stomach, it would only admit a medium-sized catheter. There was no trace of any mucous lining anywhere, except near the cardiac end of the stomach, the cast having separated one inch above the entrance to the stomach. The stomach was small and was firmly united to the skin wound. On opening it one was particularly struck with the apparent absence of mucous membrane; the wall was almost smooth and the rugæ were represented by indistinct lines; very little secreting surface was left and that near the pylorus. There were no evidences of gastritis. The intestines were atrophied and the mucous coat of the duodenum was smooth and thin, though otherwise healthy. There were no other symptoms of organic disease, except some brown atrophy of the heart.

The following description of the cast is by Dr. R. J. M. Buchanan, physician to the Stanley Hospital, Liverpool. "The cast was in the form of a tube, eight and a half inches long, of a greenish-gray colour, and with a smooth but somewhat corrugated external surface. The inner surface of the tube had the appearance of sloughing tissue, and it was ragged and undermined in comparison with the smooth outer surface. The cast was very tough and elastic; it was with difficulty that pieces could be cut from it for microscopical purposes. Portions of it were hardened and dehydrated in absolute alcohol passed through cedar-oil and embedded in paraffin. Sections were cut with the rocking microtome. The tough fibrinous nature of the tissue was rendered very apparent by the resistance which it offered to the microtome knife. The sections were stained with Ehrlich's acid hæmatoxylin and mounted in Canada balsam.

Microscopical examination showed that the cast was a complete slough of the inner layers of the œsophagus as far as the muscularis externa. The superficial epithelium had almost entirely disappeared in the deeper parts of the folds of the mucosa. A very few degenerated cells remained which were scattered in patches. Small ulcerations of the mucosa, in the form of flask-shaped pits, were completely filled with micrococci and rod-shaped bacilli. The denser tissue immediately beneath the epithelial layer had retained its characteristic structure in parts, but was broken through by the small ulcerations extending from the surface. The remainder of the mucosa and submucosa was invaded by a fibrinous network filling up the spaces between the degenerate fibrous tissue. This fibrinous network was similar in appearance to a diphtheritic membrane. Here and there could be recognised muscular fibres from the muscularis mucosa. The meshes of the net-work were crowded with leucocytes and rod-shaped bacilli, the latter very varied in shape, which had stained irregularly, similar to the diptheria bacillus. Minute hæmorrhagic extravasations from the vessels had evidently taken place at different times and the remains lay scattered about. The blood-vessels were blocked with thrombi and the lymphatics were dilated with coagulated exudation. The condition revealed by microscopical examination is suggestive of a submucous dissecting cellulitis leading to complete separation of the inner coats of the gullet."

Remarks by Dr. NATHAN RAW.—The case seems to be unique in this country, the few others recorded having occurred in Germany and America. The cause in this case was neat spirits, of which the patient had taken a very large quantity, and yet at the necropsy no evidences of cirrhosis of any organs were observed. The disease had evidently not been confined to the mucous lining of the œsophagus, but had attacked that of the stomach to a minor extent. With regard to the operation of gastrostomy I am inclined to think that Albert's method has no advantages over those of Howse or Witzel, and it is certainly much more difficult to perform, especially if, as in my case, the stomach is small and retracted.

I am much indebted to Dr. Buchanan for the excellent description of the cast and to my assistant, Dr. F. S. Pitt-Taylor, for the after-treatment of the case.

Liverpool.

THE HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, BROMPTON.—It is officially announced that a site for the proposed country branch and convalescent home has been chosen at Heatherside near Bagshot, and the outlay is estimated at £20,000.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum propriis collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

LONDON TEMPERANCE HOSPITAL.

A CASE OF PHAGEDENIC CHANCRE OF THE UPPER LIP IN A YOUNG WOMAN; EARLY AND MARKED SECONDARY ULCERATION OF THE PALATE; EXEMPTION OF THE SKIN; REBELLIOUSNESS TO MERCURIAL TREATMENT; RAPID AMELIORATION UNDER IODIDE OF POTASSIUM.

(*With Coloured Illustration.*)

(Under the care of Dr. W. J. COLLINS.)

THE occurrence of phagedæna in a syphilitic sore is to be attributed probably to a secondary local inoculation of a septic organism and not merely to the debilitated condition of the general health. That the general condition, though predisposing to phagedæna, is not its sole cause is shown by the fact that when more than one syphilitic ulcer is present some may become phagedænic while the others may undergo no change. In the following case the improvement under iodide of potassium is certainly remarkable. The situation of the sore rendered it impossible to employ the continuous warm bath which is always so valuable in the treatment of phagedæna.

A young woman, aged 19 years, a domestic servant, of healthy appearance, with a tuberculous history on her mother's side, was admitted into the London Temperance Hospital on Feb. 27th, 1900, with an ulcerated swelling situated in the prolabium of the upper lip. The base of the ulcer which was somewhat of a trefoil shape, was hard and infiltrated, giving the appearance of a conical projection when seen in profile. The surface of the ulcer secreted a little thin pus which tended to encrust and the edges were sharply defined against the red muco-cutaneous surface of the labium. There were enlarged and tender glands below the mandible, more pronounced on the left side; the pre-auricular lymphatics were unaffected. Dr. Collins made a provisional diagnosis of a syphilitic chancre and ordered mercurial inunctions.

On March 21st the ulceration was noted to be slowly extending and the appearance was that of a phagedenic ulcer destroying the tissues of the lip. An examination of the blood for organisms gave a negative result. On the 24th the appearance of the ulcer was described as "crateriform." The temperature continued to be elevated, ranging between 99° and 100° F. and occasionally reaching 101°, and there was much pain in moving the lip; otherwise there were no constitutional symptoms. On April 5th an ulcer appeared on the left tonsil and on the 12th this had extended to the left side of the palate. Despite full doses of mercury externally and internally the condition of the lip was becoming worse rather than better, and the patient's condition was very deplorable. Ophthalmoscopically no change was to be seen and no eruption appeared on the skin.

On May 10th Dr. Collins decided to give up mercury in favour of large doses of iodide of potassium. An improvement was soon apparent in the lip, though the palate showed a sloughing appearance. The submaxillary glands became reduced in size and were no longer tender. On May 19th the edges of the ulcer on the upper lip were becoming healthy and a slough had separated. On the 28th there was rapid improvement. Some deformity of the upper lip resulted. The throat was still ulcerated. On June 19th the lip was well and the throat was now rapidly healing. There were no skin or ocular symptoms. Her general health was greatly ameliorated. On the 22nd the patient was discharged, apparently well. She was ordered to continue the iodide of potassium for a while and to return later for plastic

operation on the lip. Six months later the patient was well and the deformity was much less noticeable.

Remarks by Dr. COLLINS.—No explanation of the source of infection in this case was forthcoming, though it is difficult to doubt the nature of the disease. The extensive phagedæna, the early implication of the throat, the absence of any skin eruption, the rebelliousness to mercurial treatment, and the rapid improvement under potassium iodide are noteworthy features in the case.

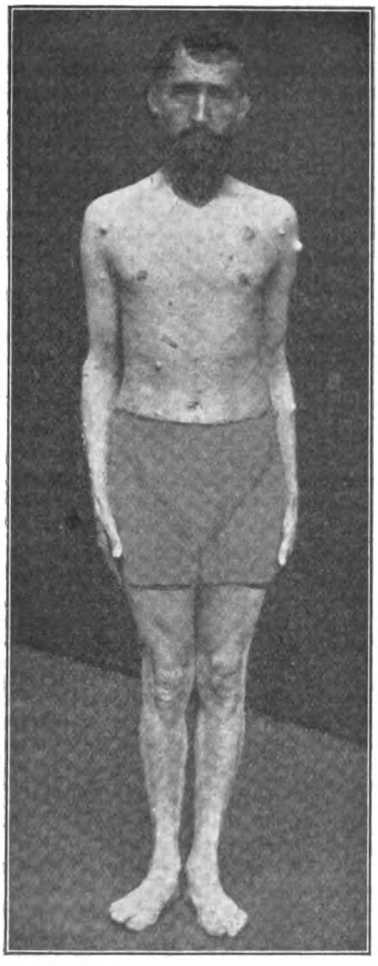
LEEDS GENERAL INFIRMARY.

A CASE OF GENERALISED NEURO-FIBROMATOSIS WITH "FALSE NEUROMA" OF THE VAGUS NERVE.

(Under the care of Mr. B. G. A. MOYNIHAN.)

THERE can be no doubt that in some cases at least the soft pendulous tumours known as molluscum fibrosum are derived from an overgrowth of the fibrous tissue of nerves, but there is much more difficulty in proving that this is the origin of all the cases of molluscum fibrosum. It is not improbable that the fibrous tissue connected with other cutaneous structures may at times be the source of the hypertrophy. In Mr. Moynihan's case a tumour of a special nerve, the vagus, was associated with the general neuro-fibromatosis, and the apparent harmlessness of a resection of a considerable portion of this important nerve is very striking.

FIG. 1.



Front view of the patient.

A man, aged 37 years, was admitted into the Leeds General Infirmary on July 31st, 1900. The patient, who was thin, slightly built, sallow, and of average intelligence, had noticed for the first time a swelling on the left side of the neck about six weeks previously. At that time the swelling was small, "hardly bigger than a nut," but the increase in size had been rapid and steadily progressive. At the time that the lump was first observed he began to suffer from an irritable cough, which was increased or induced by any sudden movement of the neck or by handling of the swelling. Persistent pressure of a collar or long handling brought about violent seizures of coughing with an alarming sensation of choking.

On examination a swelling three inches in length or a little more was felt on the left side of the neck lying over the common carotid artery, partially under cover of the sterno-mastoid muscle. The swelling was smooth, firm, though very slightly elastic, and moveable freely from side to side but not from above downwards. It was well defined and could be lifted from its bed so that the fingers almost met behind it. There was no pulsation in it. Manipulation of the tumour caused great respiratory irritation. During an attack of coughing thus induced, the swelling was found to present prominently in the posterior triangle of the neck. There was no interference with deglutition. The patient's voice was rather hoarse and metallic and was "thyroid" in character.

As regards the general condition of the patient the whole body was covered with soft excrescences, varying in size from that of a pin's head to that of a walnut. Some of these were sessile and others were broadly or finely pedunculate. The larger ones were very soft and suggested the appearance and feel of an almost empty umbilical hernial sac. All were quite irregular in distribution; no method in their arrangement could be conceived. Hair was entirely absent from them all. Over the whole body were irregular patches of pigment, of the colour of *café au lait*. The patches on the face were like pronounced freckles; elsewhere patches of the size of the palm of the hand were observed. Their arrangement seemed to be quite capricious, not following nerve distribution or the placing of the pendulous masses. The pigmentation and the excrescences were present at birth and had altered little or not at all. A careful examination did not reveal any "beading" of the nerves of the upper or lower extremities.

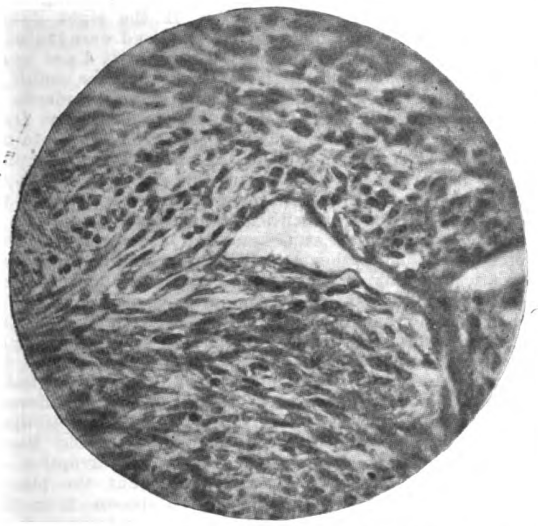
The patient's father, one brother living, and one brother dead, had all been covered with patches of brown pigmentation and soft excrescences such as these. No solitary tumours of the kind noticed in the neck had been noticed.

An incision was made along the anterior border of the sterno-mastoid for four and a half inches and the tumour was exposed. It was found to be fusiform in shape, tailing off at each end into a cord of the thickness of a lead pencil, knotted, gnarled, and tough. This cord extended up to the base of the skull and could be felt to extend downwards into the thorax. The whole of it was beaded in the same irregular fashion. This cord was clearly the vagus nerve in connexion with which the tumour was growing. A ligature was placed on the nerve above and below and the growth, with about three inches of nerve, was removed. After the operation the pulse varied from 80 to 96, the respirations were constantly 24, never varying from that so long as the patient remained in hospital. For 48 hours after the operation complaint was made of acute epigastric pain, but no tenderness or distension was observed. There was no vomiting. The voice was a trifle more husky than before for several days, but eventually returned to its former condition. The wound healed by first intention and the spasmodic seizures of dyspnœa and coughing entirely ceased. The patient left the hospital on Sept. 12th, 1900.

Pathological report by Mr. P. J. CAMMIDGE.—The tumour received for examination on August 10th is smoothly ovoid in shape, and measures 7·5 centimetres long by 5·0 centimetres at its greatest transverse diameter. Attached to either extremity is a portion of nerve, the one being 2·0 centimetres by 0·5 centimetre, and the other 2·5 centimetres by 0·6 centimetre. The tumour is covered by a glistening capsule, which is loosely adherent and easily strips. Shining through the capsule a number of small tortuous vessels are to be seen, but no strands of nerve tissue can be distinguished. On section the capsule appears to consist of loose areolar tissue arranged in layers and varies in thickness from 0·1 to 0·05 centimetre. Several compressed oval strands of nerve fibres lie between the capsule and the body of the tumour, but they are not attached to either and readily shell out. The general colour

of the tumour is a greyish-white, and mingled with this are numerous areas which have a deep yellow tint and some small patches which appear gelatinous and semi-transparent. To one side of the centre is a necrotic area measuring roughly 1·5 by 2·0 centimetres, and consisting of mucoid material mixed with loose fibres, the whole, together

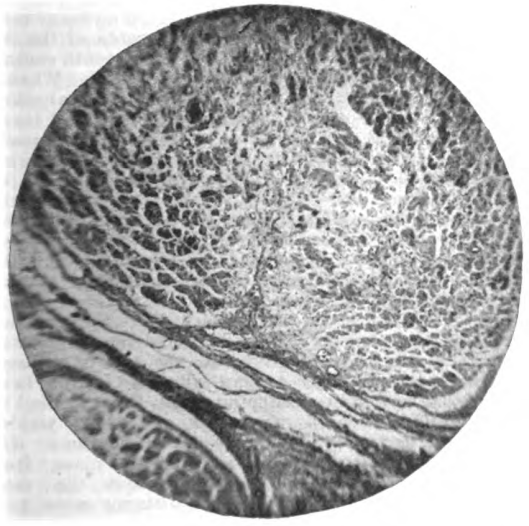
FIG. 2.



Microscopic appearance of the tumour under a high power.

with the tissue for a short distance round, being coloured a deep brown. A few small vessels and numerous points of brown pigment are scattered irregularly over the cut surface, but the collections of pigment are especially numerous in the neighbourhood of the capsule. The fibres of which the tumour is composed are arranged in whorls and

FIG. 3.



Microscopic appearance of the nerve trunk under a low power.

the yellow areas mentioned above are seen to be chiefly situated toward the centres of these whorls.

Microscopically the body of the tumour is composed of spindle-shaped cells, with large oval nuclei, closely packed together. Some are seen in transverse and others in longitudinal section; the arrangement of bundles and whorls noted with the naked eye is also seen microscopically. Numerous thin-walled vessels and blood spaces, lying in intimate contact with the cells, are scattered through the section. In the neighbourhood of these, and in places apart from any vessels, are patches of extravasated coloured corpuscles, such patches being more numerous in sections taken from near the capsule. Scattered patches of cells do not take the stain well and the nuclei are either indistinguishable or only faintly stained; a large number of cells are to be seen also which, although staining fairly well, are very granular and contain a large number of small fatty granules scattered through the protoplasm. These degenerate cells, as a rule, are more numerous about the centre of a whorl of more healthy cells. Most careful and repeated staining by Weigert's method has failed to reveal any nerve fibres in the body of the tumour. The capsule consists of loose areolar tissue in which are embedded numerous small blood-vessels, often surrounded by more or less extravasated blood which frequently extends widely into the surrounding areolar tissue.

Sections of the nerve bundles lying between the capsule and the tumour show marked fibrosis affecting both the endo- and peri-neurium, but chiefly the former. In places the increase of fibrous tissue is very marked, the nerve fibres being separated and surrounded by a well-marked ring of the new tissue; in others the increase is less marked, and in others again the appearance is almost normal. Unusual numbers of blood-vessels are also to be seen. In the nerve trunks connected with the tumour the epineurium appears to be slightly thickened and blood-vessels are more numerous than normal. In the perineurium there is some increase of the concentric lamellæ, the fibrous tissue of which gradually becomes merged into the endoneurium. In the endoneurium itself there is a marked increase, more particularly in some places where the individual nerve fibres are seen to be surrounded by a noticeable amount of new fibrous tissue. In longitudinal section the nerve fibres pursue an irregular undulating course and are separated by considerable amounts of fibrous tissue. These changes are more marked in the smaller of the two portions of nerve connected with the tumour.

The tumour is what is described as a "false neuroma"—i.e., a fibroma—arising in the course of a medullated nerve. The character and arrangement of the cells with the presence of so many thin-walled vessels are all, however, very suggestive of sarcoma.

Remarks by Mr. MOYNIHAN.—This case is an admirable example of generalised neuro-fibromatosis. The condition usually known as molluscum fibrosum was associated with a growth, possibly sarcomatous in nature, springing from the vagus nerve or its sheath on the left side of the neck. The question as to whether the soft pendulous masses distributed apparently at random over the whole body are soft fibromata originating in connexion with the sheaths of the peripheral nerves as held by Recklinghausen, or whether they are formed around the glands and hair follicles as suggested by Payne, cannot be considered as settled, though the balance of evidence is heavily weighted in favour of the former view.

The points of especial interest in this case are as follows: 1. The remarkable family history. The hereditary and inherited character of the disease is clearly apparent. 2. The general distribution of the soft, fibrous, more or less pendulous, nodules, and the brown pigmented areas, giving rise to the condition known as molluscum fibrosum. 3. The association with these of a localised tumour originating in connexion with the vagus nerve. The character of the tumour is probably that of the "secondary malignant neuroma" of Garré, of which the essential features are rapid growth, lack of infiltration except after recurrence, and absence of secondary deposits except in the latest stages. 4. The absence of any untoward effect after removal of a large portion of one vagus nerve.

A GENEROUS GIFT.—The town of Moreton Hampstead has been presented by the Hon. F. D. Smith, M.P., with a completely furnished hospital at a cost of £5000.

PAUPER FUNERALS.—At the meeting of the Swansea Board of Guardians held on Dec. 21st the undertaker to the union was censured for his action in taking the bodies of two paupers to the burial-ground in a grocer's cart and afterwards reading the burial service himself. The man admitted that he had followed this procedure in eight cases.

Medical Societies.

EPIDEMIOLOGICAL SOCIETY OF LONDON.

Plague.

A MEETING of this society was held on Dec. 14th, 1900, Dr. PATRICK MANSON, C.M.G., F.R.S., the President, being in the chair.

Dr. A. K. CHALMERS, medical officer of health of Glasgow, read a paper on the Plague in Britain in the Nineteenth Century. After shortly recounting the history of plague in Europe from the fourteenth century to the Malta epidemic of 1813 Dr. Chalmers passed on to consider the recent epidemic in Glasgow. He remarked that the origin of the outbreak was absolutely unknown. The first man attacked was a docker but employed on coasting vessels only, and he contracted it from his wife who sickened simultaneously with the infant whom she carried with her when hawking fish in the streets. Where they met the infection would never be known. Besides the cases traceable directly or indirectly to these and to the wakes were several of interest from their circumstances—a shoemaker and a man living on the other side of the river, neither of whom had to their knowledge had any communication with the infected family, though the one resided and the other visited at the adjoining houses. Then four cases occurred on Sept. 13th and 14th in a house where a person had died on August 28th from "pneumonia" (*sic*) with enlarged cervical glands. They were a man and his wife who had slept in a bed on which a previous case had died and which was presented to them by the friends of the deceased, and another case occurred in the same house. Some others who assisted with persons who had been present at the "wakes" might be looked on as cases of indirect infection. The origin of two cases at Govan on the other side of the river could not be explained. Special interest, however, attached to the case of the wife of a man employed in removing clothing from an infected house for further purification. So soon as a room was vacated its contents were exposed *in situ* for several hours to the vapours of liquefied sulphur dioxide and the floors, walls, &c., sprayed with formalin or chlorine. Clothing and bedding were then wrapped in sheets wetted with formalin and conveyed to the steam oven. The men employed in this work had all received immunising doses of Yersin's serum and none of them suffered. But the wife of one who lived at a distance from the infected district and had had no communication with contacts other than her husband was attacked and developed inguinal buboes, the most probable explanation being that he carried the infection in his hair, since they wore overalls at their work. Including fatal "pneumonias," &c., preceding recognised plague cases in the same houses, the attacks in the consecutive weeks ending August 4th to Sept. 22nd were 2, 0, 4, 10, 9 (2 at Govan), 2, 5, and 2, besides 2 in the hospital staff, the deaths in the respective weeks having been 2, 0, 2, 5, 3, 1, 2, and 1; in all, 36 cases with 16 deaths. With regard to the conditions of infectivity, the association of plague with gross insanitary conditions had never been questioned, but Dr. Chalmers was convinced that the susceptibility of the individual was greatly determined by the conditions amid which he lived. In Bombay those dustmen only whose homes were insanitary contracted the infection in the course of their work, and he believed that, as with typhus fever, the danger of infection in the wards of a well-conducted hospital was very small. In the Glasgow epidemic the virulence of the disease in the several foci was proportioned to their sanitary conditions and in the first centre further intensified by the overcrowding during the wake. The mortality among those who passed their incubation and sickened in their dirty homes was far higher than that of the contacts who were early removed to the purer air of the reception house, and in one house where 16 days elapsed between the first and the three secondary cases, two of which were mixed or septic infections, he was strongly inclined to believe that the bacilli had acquired increased virulence during a period of saprophytic existence in the filth of the tenement, every member of this family being attacked, while the 15 other families in the same house escaped. Professor Zabolotny of St. Petersburg, who was in Glasgow at the time, was much struck with the prolonged duration of many of the cases and the general mildness of the disease as compared with what he had observed in China and India and in the recent outbreaks at Kolubowka and Oporto. Indeed, if some of the cases that could not be accounted for were really due to direct infection the intervening terms of the series must have been so extremely mild as to have escaped recognition. In all 26 cases were admitted into the hospital and two occurred there. Eight of these died, giving a mortality of 28 per cent., approximately the same as in other recent outbreaks. In Smyrna it was 40 per cent., in Sydney 30, in Alexandria 48, and at Oporto among cases not treated with serum 63·7. But if the eight deaths occurring at home and not clearly recognised were included the death-rate at Glasgow would be really 44·4 per cent. Dr. Rosenau of Washington had shown that the bacilli of plague retained their virulence for 48 days in pieces of fabrics kept in the dark at a temperature as low as from 20° to 23° C., and if they could do the same or maintain a saprophytic existence in the hold of ships the introduction of the disease in the absence of known cases might be explained. The trade of Glasgow was largely carried on by vessels not plying directly with India or China but calling at various ports *en route*. At Glasgow no infection of rats was observed, for though they were plentiful in the district at the commencement of the outbreak they decamped so soon as disinfection of the drains and houses was begun. Nor were any of the rats obtained from vessels arriving from the East Indies, China, or elsewhere found to afford evidence of infection. There was no doubt as to the part played by these animals in the dissemination of the plague in India and China, but the species of rats differed in different continents and climates and so might their susceptibility. It might be merely a coincidence, but the old black rat of this country disappeared before the irruption of the brown one about the same time that the plague died out, and no conclusions could be drawn from the silence of Boghurst on the subject, his statement as to foxes and serpents dying from the plague being obviously the mere repetition of a tradition and not the personal observation of a London apothecary. In his extremely curious and interesting "Loimographia," which after having existed for 230 years in MS.[1] was transcribed and edited by Dr. J F. Payne and printed at the cost of the Epidemiological Society in their Transactions for 1893-94, Boghurst expressed himself somewhat inconsistently as to the essential nature of the plague, but insisted strongly on the importance of insanitary surroundings, filth, and neglect of personal hygiene as predisposing and favouring conditions, "furthering occasions" as he called them, an opinion in which all were now agreed.

Dr. J. F. PAYNE said that there were records of the prevalence of the plague in Bombay in the seventeenth century and of its subsequent disappearance as in Europe. When it reappeared in any country it always did so in several places simultaneously, spreading by ordinary infection and recurring at intervals as it were *de novo*, as Pepys graphically described its progress from west to east in London during the year 1664–65, slower than if it had been carried by ordinary contagion. The expression "soil" as used by the writers of that time did not mean the earth only but included every extra human condition or factor. The existence of the bacillus as a saprophyte was undoubted and, as he had said in Allbutt's System of Medicine, it need not be feared in a really sanitary city.

Dr. F. TIDSWELL of Sydney remarked on the contrast between the large element of personal contagion observed in Glasgow and the evident activity of the rats in Sydney. The first case there was a man who had never been away but was carrier to a shipping firm. The rats died by thousands, and six of 15 caught on one wharf yielded plague bacilli, as proved by cultures and inoculations. The next 50 or 60 cases were men of every class, from clerks to labourers, employed in or about the same wharf. A family at a considerable distance were next attacked, but they frequented a dust-tip where refuse from the wharf was thrown. Then some cases occurred quite independently in some suburban houses of a good class, but plague rats were found in each. Save among the occupants of the same house direct contagion was never observed, unless the cases of a young man who stood for some hours in a crowd at the send-off of the Australian contingent and of a young woman superintending a stall at a bazaar were instances. There were very few secondary cases, plural

[1] British Museum, Sloane MS., 349.

attacks being either simultaneous or at intervals too long for connexion, and but one or two per 1000 of the scavengers contracted the disease. As to the rats, the only question could be whether the infection was conveyed by them to man or they contracted it from him. In every place the rats were attacked first and their dead bodies found before an outbreak, but he believed that fleas acted as intermediaries and vehicles, for though he had failed to infect animals by their means under natural conditions he had done so by inoculating an emulsion of such fleas and had found the bacilli in their bodies. As to types, most of his cases were bubonic, a few were septic, and two were pneumonic. Since, however, bubonic cases might take on these more dangerous characters he thought that by the early isolation of all cases the virulence of an epidemic might be lessened.

Dr. E. WILLOUGHBY wished to know whether the so-called "Australian" rats were specifically identical with Europe or of India and China, since there were none, indeed no mammals, indigenous to the country. It might be that as with the anopheles and the culices, the one was a source of danger and the other harmless in this respect.

The PRESIDENT said that he believed in rats but he believed also in fleas; there were, however, many species of rat and one, the musk rat, was stated to be immune. The Chinese illogically held a dead plague rat to be protective against infection, and he had recently been told of a thrifty native Christian and his guests being attacked after dining off rats that had died from the plague.

LIVERPOOL MEDICAL INSTITUTION.

Epidemic Arsenical Neuritis.

THE sixth ordinary meeting of this institution was held on Dec. 20th, Mr. EDGAR BROWNE, the President, being in the chair.

Dr. NATHAN RAW opened the discussion on Epidemic Arsenical Neuritis, remarking that during the last 12 months he had had 148 cases of neuritis under his care, most of them presenting the appearances of alcoholic neuritis. During the last month the symptoms were different, being more those of acute irritant poisoning than of chronic neuritis. He was of opinion that the first serious contamination of beer with arsenic took place about May last and a sudden contamination about the middle of November. He had found arsenic in the urine in five cases, all recent admissions, and although he had carefully examined 31 other cases no trace of arsenic could be found. He was of opinion that arsenic had a different action in the presence of alcohol.

Dr. ERNEST S. REYNOLDS (Manchester) gave a short account of the steps which led to the theory, and afterwards to the proof, that arsenic present in certain beers was the cause of the epidemic. He mentioned some symptoms not previously noted and stated that any treatment pursued should take account of the great heart weakness present. He finally referred to the possibility of arsenio-bacteria being present in the beer and having something to do with the carriage of the arsenic.

Mr. G. S. STANSFIELD (Birkenhead) stated that usually he had, as medical officer of the Birkenhead Union Workhouse, three or four cases of peripheral neuritis in the year, whereas recently there had been 32 cases, the increase beginning in October. The average time from first symptoms to admission was 11 weeks, the average age was 45 years, and although some were spirit-drinkers as well, yet all were beer-drinkers, on an average of three pints of beer per diem at 6*d*. per quart. The symptoms common to all were numbness in the hands and feet, pricking like pins or needles or "nettles," cutaneous and muscular hyperæsthesia, loss of knee-jerk, and ataxia. Pigmentation was, except in one case, so slight as to be overlooked, but it was present in one-third of the cases. Several patients had cardiac dilatation and bronchitis; severe sweating was seen in others and also desquamation. The beer used by several patients had been found to be free from arsenic, hence he would say (1) that there was an epidemic of peripheral neuritis; (2) that some of the cases had symptoms of arsenical poisoning; and (3) that the administration of arsenic in beer seemed to be more potent, since many patients had but one pint of beer per diem, the disease in one such case ending fatally.

Dr. R. J. M. BUCHANAN considered that this epidemic of peripheral neuritis conveyed a lesson emphasising the necessity of members of the medical profession individually to cultivate the faculties of observation and deduction to the highest degree; that the familiar association of alcohol and peripheral neuritis in relation to cause and effect had no doubt tended towards a want of credulity regarding the statements made by patients who denied excess, thus narrowing the field of mental vision and hindering the elucidation of the truth. Noticing the increase in number since July of patients at the Liverpool Stanley Hospital on his days of attendance with obscure nerve-pains and peripheral neuritis, cross-examination in reference to alcohol as a cause did not elicit excess or a history of spirit-drinking as a response The possibility of lead in beer was considered, but the special symptoms did not support the suspicion. The cases which had come under his notice exhibited several points of interest. 1. The history of beer-drinking in moderation only, in some cases not more than one and a half glasses per diem. 2. The peculiar alteration in the first sound of the heart, which approached the second in character, rendering the heart sounds "fœtal"; the small frequent pulse. 3. The hyperæsthesia and hyperalgesia of the lower extremities, particularly the feet, with anæsthesia of the fingers; the sweating of the hands and feet. In one patient the anæsthesia of the hands commenced in the thumb and gradually attacked each finger in sequence, the little finger last. In holding a cup by the handle the patient did not recognise that she held it safely until pain was felt in the fingers by the excessive pressure which she had to exercise. As a cigarette-maker her work was interfered with, not only by the anæsthesia of the fingers interfering with delicacy of touch and paresis with movement, but particularly by the production of pain. Paræsthesia was present in nearly all cases as a sensation of "prickling" or "pins and needles"; one man complained that he felt as if he were walking with his "bare feet upon ice"; another as if he had "a round ball under the sole of each foot," upon which he was always trying to balance himself to lessen the pain. 4. The absence of any very marked loss of power (except in extreme cases), ataxia, or mental symptoms. 5. The association of œdema in some cases and not in others. 6. The peculiarity of the pigmentation, its varied intensity, and its distribution, fading towards parts most exposed to the air or subject to the least pressure. 7. The dryness and desquamation of the skin of the trunk, in some cases branny in character, in others exfoliating in flakes, the flakes of epidermis being white, indicating a deposit of pigment in the deeper layers of the cutis. The peculiar condition of the nails, which were occasionally raised up and loose; in one case the nails on the fingers presented a well-marked transverse ridge, indicating the approximate date of the initial trophic disturbance. 8. The occurrence of skin eruptions; in two cases intercostal herpes zoster, in another herpes of the buttock and extending to the knee; in one case a patch of erythema on the back nine inches square, with dermographia; in one case large patches of urticaria were present all over the body, with the exception of the hands, feet, and scalp; these were raised above the skin level from one-sixth of an inch to three-eighths of an inch and varied in size from one inch to eight inches in the greatest diameter. 9. In one case, that of a woman in whom the general symptoms were pronounced, there were both laryngitis and bronchitis present, also a rapid enlargement of a previously small and quiescent goitre. 10. In only one instance was Dr. Buchanan successful in detecting arsenic in the urine to his satisfaction. The case was a severe one under the care of Mr. H. W. Nott of Little Sutton. No difficulty was found in obtaining characteristic reaction by Reinsch's method, and subsequent sublimation from six ounces of distilled water to which had been added a quarter of a drop of liquor arsenicalis, B.P. The rapid enlargement of the thyroid gland which occurred in one of the cases suggested the possibility that the peculiar condition of the skin, the falling hair, and the pigmentation might be due to the arsenic in a direct or indirect way affecting the thyroid gland and perhaps the suprarenal glands. Relative to this suggestion Dr. Buchanan offered the following points for consideration. (*a*) At a meeting of the institution held on Oct. 17th, 1895, in the discussion which followed an admirable paper on Exophthalmic Goitre by Dr. J. H. Abram, Dr. Buchanan related a case in which, during a quiescent period of the disease, the exhibition of liquor arsenicalis in doses of three minims three times a day, with the hope of diminishing the anæmia, was followed within 48 hours by great prostration with inability of the patient to stand alone

and an aggravation of all symptoms. The drug was immediately withheld. 11 weeks later it was again tried with a similar, but not so severe, result. Several recorded cases in the *Manchester Medical Chronicle* pointed to the aggravation of the symptoms on administering arsenic. More recently arsenic had been suggested and used with variable result, in conjunction with the administration of thyroid gland, to prevent symptoms of thyroidism. Although these observations seemed diametrically opposite they tended, at least, to show that arsenic, in a manner the *rationale* of which is not fully known, might probably exercise an influence on the thyroid gland. (*b*) The close association of pigmentation, localised or diffuse, in patients suffering from "Graves's disease." (*c*) The association of pigmentation with latent thyroidism. (*d*) The pigmentation of gestation, during which period the thyroid gland was enlarged and more active. (*e*) The characters of the skin in myxœdema and hypothyroidism. (*f*) The increased frequency of the pulse and tremor in arsenical poisoning and Graves's disease. (*g*) The number of cases of arsenical poisoning had been greater and the symptoms more pronounced in women (in whom affections of the thyroid gland were more common than in men). (*h*) The presence of iodine as a normal constituent of the thyroid gland; the prevention of pigmentation during the administration of arsenic by the use of iodine at the same time. Referring to the presence of arsenic in beer Dr. Buchanan drew attention to the possibility of contamination occurring in the following ways. 1. The use of sulphuric acid containing arsenic as an impurity in the "converters" in the manufacture of glucose, or at a later stage if used as a bleaching agent in the "vacuum pan." The same might apply to the inversion of Jaggery sugar. 2. Bisulphite of lime containing arsenic as an impurity, if used for the washing out of brewing vats or "cleaning casks," or washing the beer barrels after "steaming," or as a "fining." 3. The use of sulphuric acid to cut the isinglass in the preparation of "finings." 4. The possible contamination of grain by the use of artificial manures containing arsenic. In the manufacture of glucose lime was used to neutralise the sulphuric acid in the liquor from the "converter"; after neutralisation it was passed through press-bag filters and the residue was used as manure. 5. The possible contamination of hops if bleached by the use of bar sulphur. 6. Contamination of the malt by the use of anthracite coal in the kiln or by sulphur. Dr. Buchanan drew attention to the use of lime for cleansing purposes and the possible combination with it of lactic and malic acids in the beer. Decomposition of these substances if brought about by the action of certain organisms would result in the evolution of nascent hydrogen which, combined with the arsenic to form arseniuretted hydrogen, one of the most poisonous forms of arsenic. If lime and soda were used for cleansing barrels, &c., a combination of arsenic and soda might take place and produce an easily absorbable compound. If so it might account for cases in which the symptoms were sudden and severe, especially as beer was so often taken on an empty stomach, facilitating rapid absorption. The production of arseniuretted hydrogen in a somewhat similar manner had been shown to occur and had been put forward as a means of poisoning from arsenical wall-papers. Dr. Buchanan exhibited a series of plans illustrating the construction of a complete maize milling plant for manufacturing pure degermed meal, maize oil, and cake; also of plant and machinery for the manufacture of white liquid glucose with a capacity of 70 tons per day. A concise description of the process of manufacture and a "key" to the plans were also provided.

Dr. F. H. BARENDT divided the eruptions present in arsenical neuritis into two classes: (1) after heavy drinking, and (2) after moderate drinking. Under the first class erythromelalgia, erythema of the face, urticaria, and hyperidrosis were observed. Under the second class zona, palmar and plantar keratosis, and pigmentation were observed. The diagnostic differences between arsenical pigmentation and Addison's disease were fully described. The pigmentation in these cases, which had been noted by writers on drug eruptions, was physiological and not due to any deposit of arsenic in the skin, in contrast to argyria, where the presence of the silver had been detected in the tissues. It had been overlooked or mistaken for morbus Addisonii and phtheiriasis.

Dr. GLYNN had met with cases of arsenical neuritis with the pigmentation and eruptions described by the previous speakers and would not refer to them. He had seen a woman who after a few glasses of beer was attacked with neuritis; the affection commenced with sore-throat, diarrhœa, and general œdema early in October, and although no beer had been taken since the onset of the disorder the symptoms of neuritis had up to the present time become aggravated. The amount of arsenic in the beer consumed was about one-seventh of a grain to a pint. She had taken iodide of potassium from the first without benefit; from his experience in this and other cases he concluded that this drug was of no value in arsenical neuritis. He was not prepared to accept Dr. Reynolds's theory that alcoholic neuritis was invariably due to arsenical beer, as he believed that he had met with the disease in women who were spirit-drinkers and took no beer.

Dr. W. CARTER thought that some startling revelation of this kind would alone rouse the country to the dangers and anomalies of the public traffic in alcohol. In 1837 when it was found that there were 6·5 deaths per 1,000,000 of the population from arsenic a popular clamour was excited, issuing in an Act of Parliament which fenced its sale with restrictions, the effect being that in 1897 the mortality had fallen to 4 per 1,000,000 in a population of 30,000,000. In the years 1876 to 1880 the Registrar-General's returns showed an annual mortality from the *direct* effect of alcohol of 38·4 per 1,000 000, but no alarm being felt and no Act being obtained for restricting the sale of this poison it had risen in 1897 to 77 per 1,000,000. Dr. Tattersall had published returns which showed an extraordinary decline in the death-rate of Salford owing, as he believed, to the abstinence from beer-drinking during the last week or two in that town. The present scare would soon die away and adulteration probably be again practised unless some method of permanently securing the public interests was enforced. If men would not abstain altogether they should at least have a drink free from poison, and much good could be done by medical men as well as by others by supporting the recommendation of the Brewers' Commission as to the necessity of analyses. But these analyses should be periodical—say, quarterly; they should be made at the brewers' expense and should be accompanied by a certificate of purity which the licensee of the public-houses should be bound to expose in a conspicuous place so that everyone entering the house might see it; or Sir Cuthbert Quilter's Pure Beer Bill should be passed. Such glaring anomalies as prevented the holders of the railway stock of the London and North-Western or Midland Railway from sitting as justices on a licensing bench because of the infinitely small interest they had in the companies' hotels, while permitting the directors or chairmen of companies of glucose manufacturers that supplied brewers all over the Kingdom and had a direct interest in promoting the sale of beer, ought to be abolished. As for the traces of arsenic that could get into barley from soil or into beer from bacteria they might be disregarded. What was wanted was a periodical analysis by competent chemists that would insure the public against injurious additions, whencesoever they might come.

Dr. E. W. HOPE, in referring to the administrative aspects of the question, said that as soon as the cause of the neuritis was suspected it appeared to him that the first and obvious duty was to remove all arsenical beer from the possibilities of consumption. The first step was to ascertain which of the brews were likely to be poisoned and where the contaminated beer was being sold. The solicitor to the Brewers' Association was requested to call a meeting of the association forthwith, and in the meantime samples of beer were purchased in various parts of the city for a qualitative analysis, only to determine whether or not arsenic was present, irrespectively of quantity. The brewers placed themselves unreservedly in the hands of the health department and decided to destroy any beer which might reasonably be suspected of contamination. The Food and Drugs Act, on account of its slowness of action and from the fact that proceedings would lie against the retailer or licensee of the public-house and not against the brewer, was not considered a good weapon to cope with the poisoning. The Public Health Act, by which the medical officer of health or his representative was empowered to seize any article of food which was unfit for consumption and which was exposed or deposited for sale, was the weapon actually put into force. Before this Act could be put into force it would be necessary to have reasonable grounds for the belief that each barrel seized contained arsenic. So far as the brewers were concerned the poisoning

was accidental and no guilty knowledge could be proved against the retailers as would be required by the Food and Drugs Act. Quantities of beer were turned into the sewers, being seized as the result of the analyses which came to hand. The official records showed that 181,000 gallons were destroyed in Liverpool alone, besides large quantities of which there was no official record. As regards the results of analyses, no arsenic was reported in any samples taken in the ordinary way during October, and when the specific search was made for arsenic the quantities per gallon varied widely, from one and a half grains per gallon to a trace, one-fifth of a grain. Sugar was accountable for the worst class; accidental contamination might explain the other, and one not improbable explanation of this class was that the holds of vessels used for the carriage of pyrites in bulk had subsequently been used for the transport of grain in bulk. The use of flats and lighters in a similar way might also suggest a similar source of contamination. Alcoholic poisoning in Liverpool was very common, inquests being held upon scores of men and women whose deaths were ascribed by the juries to alcoholic poisoning. So usual was this that no one remarked it, but the accidental addition of a new poisonous ingredient, to which perhaps half a dozen deaths had been partially due, aroused attention. He suggested the appointment of a committee to consider what steps could be taken to prevent the recurrence of such an incident.

Dr. LESLIE ROBERTS said that the cutaneous symptoms in the present epidemic could be conveniently arranged into two natural groups—viz., (1) the chronic vaso-motor group and (2) the nutritive group. The former group included the phenomena of cyanosis, paresis of the peripheral vessels, especially well seen in the face and the main furrows of the palms, and the fixed erythemata of the palms and soles. This type of erythema, called "erythromelalgia," was associated with pronounced hyperidrosis and usually with distinct evidence of sensory and motor neuritis. It constituted the "pink palm" of a past generation. The nutritive changes were (1) pigmentation, (2) exfoliation, and (3) keratosis. The pigmentation was a physiological melanoderma. The exfoliation was comparable to that which takes place in the case of a frog poisoned with arsenic—viz., the separation of the horny cuticle from the underlying epithelium. The effects of arsenic were marked in the palms, which acquired an aspect like wet shagreen; the furrows were coarse and exaggerated and presented a brownish-red colour. To the touch the palm felt uneven and lumpy from the presence of solid nodules with a shining, flat-topped aspect. In cases where hyperidrosis and nerve symptoms were less marked the palms showed signs of black keratosis in circular patches, tending to fuse into larger patches. The nails were usually affected, the matrix being thickened and the nail discoloured.

Dr. W. A. NEWALL (Chester) remarked upon the sudden incidence of the cases in Chester, from one or two during eight months to 15 in two weeks. The rapid onset of the symptoms and their great similarity—viz., pain in the feet, numbness of the feet, legs, and hands, acute tenderness of the calf muscles, rapid severe paralysis of the legs followed by atrophy, œdema of various degrees, and dilatation and irritability of the heart—these symptoms occurring absolutely alone in the first 20 or 25 cases. Dr. Newall wished to know if it were possible to have a condition of arsenical intoxication of such severity as to cause severe and rapid paralysis and very marked sensory phenomena without vomiting, diarrhœa, colic, inflammatory skin-lesions, pigmentation, or tremor? If this were possible the cases occurring in Chester might be due to arsenical poisoning; if not, that poison could not be the cause.

Dr. PRYTHERCH claimed that there was strong evidence of the epidemic in Chester being one of beri-beri, and said that he was supported in this view by Major Ronald Ross, I.M.S., who had seen these cases. If these cases were due to arsenical poisoning it was but fair to infer that the severity of the symptoms should have some relation to the amount of beer consumed. He did not find such relation, even total abstainers being affected. It had been stated that traces of arsenic had been found in but 14 per cent. of even acute cases. That did not warrant the conclusion that the epidemic was due to arsenic, nor did it follow that the finding of arsenic in urine was a proof of arsenical poisoning. Œdema, which was a constant feature of beri-beri, was present in all cases, and until the present epidemic this was not recognised as a symptom of arsenical poisoning. The same remark applied to the peculiar spacing of the heart-sounds. He quoted cases from his own experience which had been treated with large doses of arsenic, in some of which the patients had recovered and in the others they were improving; their beer was not stopped. He did not think that arsenic in the beer was the sole cause of the epidemic, but that there must be some other more potent cause, and this when discovered might explain the etiology of beri-beri.

Dr. J. ERNEST NEVINS commented upon the amount of freckling found in these cases of arsenical neuritis. Amongst 14 cases in one ward under his care there were eight patients with freckles with or without other pigment, whilst in the next ward amongst 14 non-neurotic patients of similar ages and social conditions there were only four with freckles. The cases in the Liverpool parish hospital were fewer and of a milder type than were those at West Derby Hospital.

Dr. J. H. ABRAM said that the majority of the cases he had seen did not present any pigmentation. The paresis also was but slight, the inability to walk being due to excessive tenderness of the skin of the feet. The absence of characteristic skin lesions made the examination of the urine imperative, but owing to the rapid elimination by the kidney it was necessary to apply the tests as soon as the case came under notice. He thought that this might explain the failure to detect arsenic in the urine in some cases.

Dr. D. SMART stated that although he was a medical officer of a workhouse he was in the position of having had no arsenical cases under his care. He took it that the gastric symptoms, the eye lesion, and the pigmentation were the things to be looked for in arsenical neuritis, and although his cases had been seen by other physicians no one had found anything definite pointing to the arsenical origin in the seven cases of neuritis which he had under his care at Smithdown-road Workhouse.

Major ROSS, I.M.S., also spoke, and Dr. RAW and Dr. REYNOLDS replied.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Nephrectomy.—Radical Cure of Femoral Hernia.

A MEETING of this section was held on Nov. 9th, 1900, Mr. THOMAS MYLES, the President, being in the chair.

Mr. FRANCIS HEUSTON brought forward a case of Nephrectomy for Sarcomatous Tumour of the Kidney. The patient was a woman, aged 24 years, who noticed a small painless swelling in her right side in the winter of 1898. In February, 1899, she had a severe attack of hæmaturia, lasting for three days, which then ceased and did not recur. From that time the tumour gradually increased in size, and in September its weight gave rise to a dragging pain in the side when she was in a vertical position. When seen by Mr. Heuston a large tumour occupied the right lumbar and umbilical regions, extending to the linea alba; above it passed beneath the costal arch and below to the level of the superior iliac spine. It was not attached to the skin and it moved freely within the abdominal cavity; it felt smooth, was of stony hardness, and had well-defined edges. Examination did not give rise to pain or tenderness. On Feb. 1st, 1900, the usual oblique incision for lumbar nephrectomy was made and the tumour was exposed, when it was evident that the growth was chiefly cystic. Some of the larger cysts were tapped by an aspirator needle, removing a clear watery fluid containing albumin but not urea. The pelvis of the kidney was greatly enlarged and was occupied by a firm growth which extended down the ureter to the position where it passed into the true pelvis over the iliac vessels. Here the thickening ceased abruptly, leaving an apparently normal ureter below this point. This was ligatured and the affected portion was dissected upwards to the kidney, separating the pelvis from the renal vessels, which were then ligatured; the whole tumour was then removed without difficulty, the peritoneal cavity not being opened into. The patient's recovery was rapid and uneventful, the only point of interest being an immediate increase in the amount of urine, which now averaged 40 ounces in 24 hours, as compared with 21 ounces before operation. The kidney weighed 20 ounces after it had been bisected and most of the fluid drained away. An increase in the quantity of urine was a well-known phenomenon after operation in cases where one kidney was diseased and functionally inactive for a long time and the

other kidney, being in a healthy condition, had had to do all the work. Whether that was due to the source of irritation being removed or to nervous reflex action had not yet, as far as he knew, been decided.

Mr. H. GRAY CROLY communicated a series of cases in which he performed the Radical Cure of Femoral Hernia by the displacement method originally introduced by Kocher of Berne.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—A meeting of this society was held on Dec. 14th, Dr. Symes Thompson in the chair in the absence of the President.—A paper on the Suppression of Malaria was read by Dr. Arthur Waddell. After traversing the etiology of the disease and the different methods for its mitigation and suppression he concluded by saying that "methylene blue and non-poisonous larvicides, a minute hydraulic survey of each district followed by the pumping engine, the covered drain, and the protected water area, are the hosts upon which we must rely to lead us to victory." After speaking of segregation and the practicability of the measures inculcated he concluded as follows: "Of the positive effect of the measures considered, where they can be intelligently applied, there can be no doubt. The only question remaining is that of economics. If a jury of business men were empanelled to adjudicate on this point the first question they would ask would be, 'Will it pay?' and the answer would come back triumphantly, 'Yes, pay many times over.' For the healthy energy of a country is the true index of its wealth and greatness, and where malaria is, are diminished health and subdued energy. But what, I ask, has the question of pounds and liras and lacs of rupees got to do with malaria suppression when the cause of humanity demands it? If a man's health, life, and happiness be placed in one scale of the balance against all the gold of the universe, the diamonds and precious stones of the mine, and the pearls of the sea, will it not weigh them all down? Economics must nevertheless have a certain say, for we must be just as well as generous. Nations must rise to their duty to the best of their ability and be ready to make big sacrifices in the good cause. Many things of the luxurious order can be dispensed with, one, not the least, some portion of the betinselled and hysterical militarism which absorbs so many energies. Ross's discovery has come as a fitting crown to a century already glorious in its ending. Let us hope that the new century will master the problem which is thus unfolded and that in rising to grapple with it our beneficent British empire, great in the ownership of malarial territory as she is in many virtues, must lead the van."—Letters of regret at unavoidable absence were read, amongst others, from Surgeon-General H. S. Muir, Colonel Johnston and Major W. G. Macpherson of the Army Medical Service, Professor McLeod of Netley, Major R. Ross, I.M.S., Dr. H. E. Annett of Liverpool, &c. Major Ross in a letter to the lecturer said: "My view on prevention of malaria is that our principal malarious towns should be kept as well drained as possible and that municipalities should keep mosquito-killers; also that Governments should issue instructions to their sanitary officials to take steps in these directions." Dr. Annett, a member of the Liverpool malaria expedition, wired: "Cannot too strongly urge segregation of Europeans and efficient surface drainage as only measures against malaria in West Africa. Quinine, mosquito-proof houses, &c., absolutely impracticable."—An interesting discussion followed the reading of the paper in which the chairman, Surgeon-Major Black, Dr. Fortescue Fox and Mr. Tregelles Fox (Strathpeffer), Dr. L. J. Hobson (Harrogate), Dr. Morgan Dockrell, and others took part.—Mr. Ernest E. Austen of the British Museum and a member of the Liverpool West African expedition, in alluding to some of his experiences expressed the fear that in Sierra Leone, at all events, there could not be much hope of inducing the negro population to act up to the standard, fearing that there was no possibility of educating them sufficiently on the subject.—Dr. R. W. Felkin showed a Mosquito Net which he, Gordon Pasha, and Emin Pasha had used in 1878.—Dr. Waddell, in reply, expressed confidence in the civilising force of educated control against any native inertia where caste was not concerned, and in reply to Mr. Tregelles Fox's query as to where the special parasite had been in the ages pointed out the enormous duration of man in the world, amounting probably to a quarter of a million of years, and that the origin of the human forms of the sporozoa was to be found in the ordinary process of specialisation through evolution.

WINDSOR AND DISTRICT MEDICAL SOCIETY.—The third meeting of the session of this society was held at the Guildhall, Windsor, on Dec. 19th, Mr. W. B. Holderness, the President, being in the chair.—Dr. E. B. Hulbert showed (by kind permission of Mr. J. R. Lunn of St. Marylebone Infirmary) the following:—1. A Heart affected with Ulcerative Endocarditis. 2 Drawings and Photographs of Uncommon Diseases, including myxœdema, cretinism, cancer of the male breast in a patient aged 91 years, foreign body in the female bladder, anæsthesia following herpes zoster, sebaceous cyst of the buttock, malignant disease of the tongue, hare-lip, goitre, &c.—Mr. Arnold Thomson showed a case of well-marked Mitral Regurgitation in a man who had never had any illness and considered himself strong and well.—Dr. H. B. Milsome showed a patient with Narrowing of the Left Palpebral Cleft and Dilatation of the Left Pupil. There was a swelling in the neck which it was suggested was pressing on the cervical sympathetic.—The President showed a patient who was able to demonstrate a Perforated Membrana Tympani by passing air very audibly by Valsalva's method.—Dr. G. E. Hale showed: (1) A case of Chronic Epididymitis associated with Hydrocele; and (2) a patient with a Fibroma of the Arm causing anæsthesia of the fingers by pressure on the median nerve.—Dr. G. Leslie Eastes read a paper on the Histology of the Urinary Tract in Relationship to Morbid Urinary Deposits, giving a lucid description of the epithelial lining of the urinary tract from the cortex of the kidney to the meatus urinarius. Illustrations carefully drawn to scale were exhibited, showing the various appearances presented by the cells in microscopical preparations of urine.—Dr. E. S. Norris introduced a discussion on the question as to whether excessive athletic exercises in the young were productive of any ulterior bad effects. After quoting some statistics from the late Dr. Morgan's book, "University Oars," which certainly did not appear to show that rowing tended to shorten life, he gave personal testimony to the hard work entailed by boat-racing. In the course of his experience, however, he had only seen one case in which it appeared to him that ill-effects had certainly followed, but it was, he admitted, no uncommon thing for other physicians to see these young oarsmen and curtail their athletic exercises and prescribe a course of treatment for dilatation of the heart.—The discussion was continued by Dr. W. A. Ellison who said that he had systematically examined the boys rowing in the Eton crews for the last eight or nine years and to a certain extent for the last 16 years. After pointing out that most of the cases where ill-effects were supposed to have ensued as a result of the university boat-race broke down on a closer examination, he expressed the opinion that provided a young man had a perfectly sound heart and was otherwise in good health boat-racing with training would do him no harm, but if he were out of sorts or in any way in bad health it would do him an injury. He further pointed out that the heart of a young man who had indulged in boat-racing showed some hypertrophy which was in his opinion quite a normal and salutary result.—On the motion of the President the discussion was adjourned till the next meeting.

MIDLAND MEDICAL SOCIETY.—The third ordinary meeting of this society was held on Dec. 12th at the Birmingham Medical Institute, Mr. Jordan Lloyd, the President, being in the chair.—Mr. H. G. Barling showed a male patient, aged 19 years, who received a Blow from a Railway Buffer on Sept. 20th, 1900. The shock was moderate and was followed by slight symptoms of peritonitis and by a steadily increasing accumulation of fluid in the abdomen, associated with jaundice, occasional vomiting, and at the end of a few days some diarrhœa, the stools containing a lot of bright green biliary colouring matter. The abdomen was opened at the lower part on the thirteenth day and about six pints of what appeared to be pure bile were collected, a large quantity in addition escaping; there was no trace of blood seen. The discharge from the incision ceased in three or four days and no further abdominal mischief ensued, but a left pleural effusion followed, and eventually about 70 ounces of bile-stained but not purulent fluid were removed by aspiration. Rupture of the gall-bladder was inferred, rather than rupture of the liver or ducts, because no hæmorrhage was found in the abdomen, which would pretty certainly have been the case had the liver been torn; further, it was difficult to see how rupture of the ducts should occur without injury to the liver substance.—Mr. Barling also showed a large single Gall-stone

removed from a woman who suffered from attacks of pain in the epigastrium and in the back but without vomiting or jaundice. The interest of the case lay in the fact that a moveable lump could be felt in the abdomen below the liver, the mobility being so free that the mass could be displaced downwards several inches. The explanation of this lay in the very much elongated gall-bladder, the distal end of which could be brought three inches out of the abdominal incision; it contained only the one stone.—Mr. Barling also showed the Liver, Bile-ducts, and Duodenum of a patient from whom he had removed a gall-stone impacted in the common duct close to the duodenal opening. Two operations were performed at an interval of one month. The patient did well for four days, when leaking from the duodenum began which was followed by rapid loss of strength, and the patient died on the seventh day after the second operation. The necropsy showed no general peritonitis, but a cavity contained material which had escaped from an opening in the duodenum about three-quarters of an inch in diameter.—Dr. O. J. Kauffmann showed two cases illustrating the results of Meningitis.—Dr. Douglas Stanley showed a patient, aged 52 years, who had marked Rhythmical Movements of the Right Arm and Leg. His occupation was that of sorting scrap iron. He had had no important illness and there was no history of syphilis. The movements had been present for two years, having begun in the right arm and then appearing in the right leg and foot. The diagnosis as to the case being a form of choreic affliction or one of paralysis agitans was discussed.—Mr. Smallwood Savage read a note on a case of Complete Rupture of the Uterus and Vagina successfully treated by drainage and suture.—Dr. W. Lamb read a paper on the Diagnosis of Nasal Obstruction.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on Dec. 19th, 1900, Dr. Robert Jardine, the President, being in the chair.—Dr. A. W. Russell showed a Fœtus with Hydrocephalus and Spina Bifida. He also read notes regarding the Dilatation of the Cervix and showed a set of dilators where the different sizes were more exactly graduated than was generally the case.—Dr. Bell Todd showed:—1. Two Calculi which had been passed by a patient who had some years previously suffered from renal colic. She was pregnant a few months at the time the calculi were passed. Abortion followed 10 days later. The pain was in the left groin and thigh, so presumably the calculi came from the left kidney. A point of interest was that after the second confinement the abortion was her third pregnancy, Dr. Todd diagnosed a left floating kidney. 2. A Large Calculus removed through the interior vaginal wall.—Dr. Munro Kerr read notes of a case of "Missed Abortion." The woman had amenorrhœa for about four and a half months. Then a little discharge began to escape from the vagina. This occurred at frequent intervals for four months, when she was sent to him by her medical attendant. A diagnosis of "missed abortion" was made. The uterus being dilated, the shrivelled-up fœtus, with placenta and membranes entire, was removed. The fœtus seemed to be of about the age of four months.—Dr. Balfour Marshall read notes of a case of Missed Abortion where there was prolonged amenorrhœa with the retention of the ovum for a period probably of 12 months, but undoubtedly for at least five months, until removed by operation. The woman suffered from attacks of pain in the lower part of the abdomen, as if the uterus was from time to time trying to expel its contents. Great rigidity of the cervix existed, so that incisions had to be made into it before the ovum could be removed. In Dr. Marshall's opinion that might have in part been the cause of the retention of the dead ovum.—The President also read notes of a case of "Missed Abortion." In this case the woman had a slight hæmorrhagic discharge when she was about five months pregnant. A few days' rest stopped the bleeding and she had no other symptoms until full time when labour pains came on spontaneously and a five months' fœtus was expelled. The placenta was adherent and had to be removed manually. The President discussed the question of interfering when the diagnosis of death of the fœtus was made, and gave it as his opinion that provided there was no disturbing symptom the case was best left alone and labour allowed to come on spontaneously.—From this opinion Dr. Kerr dissented and considered it most desirable to empty the uterus whenever the death of the fœtus was diagnosed with certainty.

CHELSEA CLINICAL SOCIETY.—A meeting of this society was held at the Jenner Institute of Preventive Medicine, Chelsea-embankment, on Dec. 18th, Dr. William Ewart, the President, being in the chair.—Dr. F. T. Hewlett read a paper on Malta Fever. After welcoming the society to the institute and paying a tribute to the memory of the late Surgeon-Captain Hughes Dr. Hewlett reviewed the main features of the disease. He remarked that Malta fever had now been met with in all parts of the world and it was not improbable that cases would be seen among the troops returning from South Africa. He drew attention to the undulant character of the temperature curve and to the nervous and arthritic symptoms. The pathology was next discussed and the micrococcus Melitensis was described. The differential diagnosis and the value of the agglutination test were mentioned and the treatment was indicated. The paper was illustrated by lantern slides, microscopical preparations, and cultures, the agglutination reaction being demonstrated.—A discussion followed in which the President, Dr. C. A. Morris, and two visitors, Mr. Green and Mr. Rowland, took part. As to the treatment of Malta fever the consensus of opinion tended towards the pursuing of a strengthening dietetic course. No specific was known that had the slightest effect on the course of the disease. Quinine in any quantity beyond tonic doses was, if anything, harmful, and so far all attempts at producing an anti-serum had been fruitless. In the course of his remarks Dr. Ewart referred to the connexion between certain rheumatoid symptoms and toxæmia resulting from dental and oral suppuration. The point arose in connexion with the quasi-rheumatic characteristic often presented by Malta fever and was an instructive one as illustrating the fallacy of regarding all joint pains of a rheumatic semblance as being symptomatic of true rheumatism.—A unanimous vote of thanks to Dr. Hewlett for his paper and for the hospitality accorded to the society at the Jenner Institute terminated the meeting.

GLASGOW SOUTHERN MEDICAL SOCIETY.—A meeting of this society was held on Dec. 27th, Dr. William Watson, the President, being in the chair.—The special committee appointed at a former meeting to consider the question of the abuse of hospitals and dispensaries laid their report before the society. After some discussion the following recommendation on the subject was approved:—

That in addition to any other method at present in existence or under consideration by the directors of such hospitals patients desiring treatment at the outdoor dispensaries should obtain a printed form containing a declaration that his or her circumstances are such as warrant gratuitous treatment; and that this form be signed by the patient and by either a subscriber, clergyman, missionary, or justice of the peace, or be accompanied by a doctor's card or line of recommendation.

Reviews and Notices of Books.

Cancer of the Stomach: a Clinical Study. By WILLIAM OSLER, M.D., F.R.S., F.R.C.P. Lond., and THOMAS MCCRAE, M.B. Tor., L.R.C.P. Lond., of the Johns Hopkins Hospital, Baltimore. London: H. K. Lewis. Royal 8vo. 1900. Pp. 157. Price 6*s*.

THE presence of the name of Professor Osler on the title-page of any book is in itself sufficient to command attention for the work and a close examination of the volume before us has fully justified the expectations to which his name gave rise. We have in recent years heard much of the operative treatment of malignant disease of the stomach, and especially in the beginning of 1900 Professor Mayo Robson put before us the very latest views as to the surgery of this affection, but so far as we are aware very little has been lately done to give a general view of the present state of our knowledge as to the symptomatology and diagnosis of this disease. We therefore cordially welcome the appearance of this work, especially as it comes from the pen of so eminent a clinician. The statistics and descriptions in this volume are based chiefly on a series of 150 cases of primary carcinoma of the stomach at the Johns Hopkins Hospital.

In the opening chapter we find a very full discussion of

the important question of the alleged increase of malignant disease, and the authors arrive at the conclusion that the increase is real but that the returns at present available do not justify a positive conclusion that there has been any special increase of cancer of the stomach. The importance of heredity in the etiology of malignant disease is held nowadays in much less estimation than was the case only a few years ago, and it is interesting to note that of the cases on which the descriptions in this volume are based in none of the 23 cases occurring before the age of 40 years was there any family history of cancer. It appears also that the influence of previous disease of the stomach such as chronic dyspepsia and gastritis is not of much moment in the production of malignant disease of that organ.

About 6 per cent. of the authors' cases occurred before 30 years of age, and from all sources six cases have been recorded in patients under 10 years of age, the youngest being only 40 days old at death. In fact, there have been recorded in all 19 cases of cancer of the stomach in patients under 20 years of age. On the whole, in the young the course is more rapid than in the old.

With regard to the symptoms the authors have come to the conclusion that the presence or absence of vomiting is not necessarily connected with the presence or absence of ulceration. And of the cases with vomiting only a little more than 28 per cent. had any hæmatemesis. In 26 of the cases the appetite was normal and in two of the cases the appetite was markedly increased. In 87 cases some of the contents of the stomach were obtained for examination, and of those 80 cases showed a complete absence of hydrochloric acid, but in seven it was present, so that this acid may certainly be present and yet there may be a malignant growth of the stomach. The authors consider that the microscopical examination is of considerable importance not only in the fresh but also in stained specimens.

Perforation occurred in 4 per cent. of the present series, and in half of these a localised abscess developed and in one case a communication formed with the cavity of the duodenum and the colon. Metastatic growths by no means rarely form at the umbilicus and two instances of this occurred in the authors' series. Multiple thrombi have been described in some cases of malignant disease of the stomach, and five were met with in this series, and in one case thrombi were present in 14 different veins. A very excellent chapter is that devoted to the study of the tumour itself, and a tumour could be felt in more than 75 per cent. of the cases. In 12 of the cases an atrophic cancerous stomach was present, and in half of these the signs were sufficiently well marked to enable it to be diagnosed during life. It is decidedly rare to find cancer of the stomach in persons dying by accident, but latent cases do occur, and in this series there were eight such cases in which there were no symptoms of a malignant growth.

The first essential in the treatment of carcinoma of the stomach is early diagnosis, for, as has been pointed out by Czerny and Rindfleisch, the presence of a palpable tumour is in itself a contra-indication to radical operation, and though it is to surgery that we must look for even the possibility of complete removal of the disease, yet the medical treatment is by no means unimportant and is in some cases the only treatment which is available. Great attention should be paid to the diet, and on the whole carbohydrates are not desirable as they ferment so very easily. The value of lavage is insisted on, and the authors say that they have never seen any harm result from its use even though ulceration was present. They recommend that it is best employed at night, especially if the patient has "disturbed nights from pain."

Exploratory incisions are advised, but it is rightly urged that they should not be undertaken merely as a diagnostic measure in the case of a patient who is run down and anæmic. As a general rule, the authors tell us, the patients have stood operative interference worse than their general condition would have led them to anticipate, and after operation the impaired powers of digestion may be enough to turn the scale in the wrong direction.

We had marked many other passages for notice, but what we have said is sufficient to show that the work contains a very valuable account of an important affection, and we think there is not a member of the profession who will not derive both pleasure and profit from a perusal of its pages.

The Thompson-Yates Laboratories Report. Edited by RUBERT BOYCE and C. S. SHERRINGTON. Vol. I., Reprints, 1898–1899. Vol. II., Reprints and Reports, 1898–1899. With Illustrations and Plates. Liverpool: At the University Press. 1900.

MOST excellent work has been accomplished in the Thompson-Yates Laboratories at Liverpool and we welcome the appearance of the first two volumes of reports; subsequent numbers are to be issued half-yearly or oftener if sufficient material is ready for publication. They are intended to promote learning and to record research in the various branches of physiology and pathology and thus to carry out the wishes of the founder of these schools. The volumes are edited by Professor Rubert Boyce and Professor C. S. Sherrington, and under such able leadership we have no doubt but that a large amount of valuable material will be published which would otherwise escape the notice which it deserves. Volume I. contains the account of the opening of the laboratories in October, 1898, by Lord Lister who was accompanied on that occasion by Professor Virchow and a distinguished gathering of scientific and representative men. An address delivered before the medical students of University College by the founder of the laboratories, the Rev. S. A. Thompson-Yates, is also published.

The first volume also contains numerous papers and reports on Neurology, Bacteriology, Hygiene, and Morbid Anatomy, also reports on Physiology and Tropical Medicine. Professor C. S. Sherrington contributes articles under the titles of "On the Spinal Animal," "Synopsis in the Peripheral Distribution of some Spinal Nerves," and "On the Innervation of Antagonistic Muscles (Sixth Note)." The second named is a most valuable paper reprinted from the Philosophical Transactions of the Royal Society of London and contains the results of an immense amount of useful research. Dr. W. B. Warrington is responsible for several papers on matters connected with Neurology either alone or in conjunction with Professor Boyce or Dr. E. E. Laslett. Dr. C. Balfour Stewart contributes three Papers on "Haffkine's Plague Prophylactic." Amongst the other contributors are Dr. J. H. Abram and Dr. E. P. Manby.

The second volume contains papers and reports on the same subjects and the reports of the Malarial Expedition to West Africa. One of the most interesting papers is that on "Oysters and Disease," by Dr. W. A. Herdman and Professor Rubert Boyce. It is evident from the result of their experiments and a consideration of all the facts brought to light in recent years in regard to the bacteriology of shellfish and its influence on public health that we must regard oysters, mussels, cockles, and the like, as nutritious food matters, which, from their nature and the circumstances of their cultivation and sale, are liable to become contaminated with organisms—pathogenic or otherwise—and their deleterious products. As the authors point out, when this is once recognised the practical applications are largely a matter of common-sense. Shell-fish must not be taken as food from grounds where there is any possibility of sewage contamination. The fresher they are from the sea the more healthy they are likely to be, and they sh uld

be continually protected after gathering from any possibility of insanitary environment. Only absolutely fresh shell-fish should be eaten uncooked, and those that are cooked must be sufficiently so, being raised to boiling-point and kept there for at least ten minutes.

The publication of these volumes is a decided gain to medical literature and the editors may be congratulated on the success of their efforts.

A Text-book of Pathology in Relation to Mental Diseases. By W. FORD ROBERTSON, M.D. Edin., Pathologist to the Scottish Asylums. Illustrated with 16 lithographic plates and 13 engravings. Edinburgh: William F. Clay. 1900. Royal 8vo. Pp. 380. Price 21*s.* net.

THE need of a systematic work dealing with the pathological changes in the nervous system associated with mental diseases has been long felt. Too long had this department of medicine remained obscure and ill-explored until the foundations laid by the discoveries of Hitzig and Ferrier, Golgi and Ramon y Cajal, Meynert and Flechsig rendered the erection of a stable superstructure possible. In the long series of works which must precede the erection of a rational pathology of mental diseases the present work takes its place as a valuable collection of descriptive studies in pathological anatomy. It is perhaps unfortunate that the author was unavoidably prevented from including in the volume an account of "morbid changes affecting special parts of the nervous system," but this is explained in the preface as due to want of time. The various chapters deal with such matters as methods of post-mortem examination, including histology, morbid conditions of the scalp and ears, abnormalities of the skull, and the morbid conditions of the cerebral meninges, cortex, and blood-vessels. The histological methods given are concise and practical. An interesting description is given of the changes in the ear cartilages in hæmatoma auris. After a brief account of the methods of cranial measurement the morbid conditions of the cranial meninges are dealt with. The term "pia-arachnoid" is employed and a very clear account is given of the relations of this structure to the dura mater and to the cerebral convolutions. The formation of sub-dural false membranes and of pia-arachnoid opacities is clearly described. Dr. Robertson holds that the view of Mickle and Bevan Lewis, one generally accepted—that morbid adhesions of the membranes to the convolutions occur in general paralysis—is erroneous. After a description of the blood-vessels the neuroglia is studied with some minuteness. The account here tends to be diffuse and prolix, physiological and anatomical facts and theories being confusedly mingled, with the result that there is a want of lucidity. The morbid conditions of the nerve-cell are discussed under the headings of terminology, achromatic and chromatic substance, pigment, nucleus, pericellular, and endocellular reticula, classification and mode of connexion of nerve-cells, and this is followed by a brief discussion of the "neuron theory." In his anxiety to give the very latest views on this topic scant justice has been done to the classical researches of Nansen, His, and Forel who have done the most valuable and permanent work in this department. The morbid changes in nerve-cells consequent upon nerve-section, hyperthermia, and experimental anæmia are briefly touched upon, and short paragraphs are devoted to chromatolysis, intracellular degenerations, and myelinic changes in nerve-fibres. Many of the illustrations are taken from the standard works, such as those of Golgi, Lugaro, and others. The work concludes with chapters on brain-weights and the cranial circulation, a brief mention of congenital abnormalities and focal lesions of the brain, general paralysis, syphilitic insanity, alcoholic and epileptic insanity, and idiocy. The work is well printed, being very free from typographical errors, and is a valuable appendix to the library of asylum medical officers and pathologists.

A Cyclopedia of Practical Medicine and Surgery: A Concise Reference Book, Alphabetically Arranged. Compiled under the editorial supervision of GEORGE M. GOULD, M.D., and WALTER L. PYLE, M.D. London: Rebman, Limited. 1900. Large square 8vo. Pp. 1008. Price 42*s.*

THE wide range of medical science and the extraordinary copiousness of medical literature have long ago made epitomes of some kind an absolute necessity for those who desire to take a general view of the subject and to keep pace with modern progress. Many able writers have from time to time done good service in this direction, and of the "Cyclopedia" by Dr. Gould and Dr. Pyle it may be safely said that no treatise which has yet appeared excels theirs as an example of the happy medium between the brevity of a lexicon and the diffuseness which under some editors has made each article an exhaustive monograph and expanded the whole work into several volumes. The authors say in their preface that it has been their object to present in one handy volume, concisely and authoritatively, the more important facts in all branches of medicine and surgery that are of working value to the active practitioner. The task is one for which they were well qualified and for the carrying-out of which valuable experience must have been accumulated by Dr. Gould during the compilation of his monumental "Illustrated Dictionary of Medicine, Biology, and Allied Sciences" (now in its fifth edition). The attainments and professional position of the 74 contributors are a sufficient guarantee that the various subjects have been ably treated, an agreeable aspect of unity pervades the whole work, and it is unquestionable that the object described in the preface has been amply realised. In dealing with a large book of this kind, containing many hundreds of articles alphabetically arranged, it would be impossible on the present occasion to give anything like a general idea of the vast variety of information to be found within its pages, but a brief reference may be made to some of the more important paragraphs. Under letter A, for instance, the account of Abdominal Section covers five pages and gives a satisfactory description of the essentials of the antiseptic methods employed in general surgery, including the sterilisation of instruments and the preparation of the operator and his assistants. Under Alcoholism there are many useful suggestions for the treatment of this condition and delirium tremens. The articles on Amputation, Anæsthetics, and Aneurysm supply in each case a well-arranged and tolerably full *résumé* of the various subjects The more important of the other articles under letter A are Appendicitis, Arteries, and Auto-infection. Under letter C a few of the most interesting paragraphs are those on the preparation and preservation of the Cadaver, the selection and hygiene of Camps (five pages), Cataract, Catheter, Chancroid, Chest (six pages), Cholera, Chorea, Climatology (four pages), Coma (five pages), and Constipation (four pages). Articles longer than any of the foregoing will be found under the headings Brain, Poisoning, Spine, Tuberculosis, Tumours, Urethra, and Urine. We have noticed only one inaccuracy—namely, under the word Water, where balneum maris is explained to be a warm-water bath. Departures from the ordinary English orthography, such as might be expected in a book of American origin, are not numerous and consist for the most part in the substitution of "e" for "æ," and the suppression of the final "e" in "oxide," &c., together with the use of the words "chemic," "pathologic," and the divided "can not." We have not found any important omissions except that there does not appear to be any reference to

diseases of the teeth or dental operations. Perhaps these subjects have been intentionally left out, for the headings Dentition, Teeth in Diagnosis, and Toothache are in their proper places and in each case the description of the respective conditions is adequate. A column is devoted to "Carbon Dioxid," but "carbonic oxid," which is now a frequent ingredient of illuminating gas and seems to have been the cause of not a few fatal accidents, is only catalogued in the list of poisons. Under Malaria and Hemoglobinuria we might have expected to find the familiar phrase "black-water fever," and there is apparently no mention of psilosis, sprue, or Guinea-worm, but these are minor matters and the line must be drawn somewhere, for no single volume of a size convenient for use could possibly be made to contain everything. In fact, it seems almost ungracious to call attention to these points in connexion with a book which we have looked through with so much satisfaction, and it only remains for us to express the conviction that the "Cyclopedia" will prove itself useful for reference and a valuable addition to the practitioner's library. Many of the articles are profusely illustrated and the typography is excellent.

The Morals of Suicide. By the Rev. J. GURNHILL, B.A. London: Longmans, Green, and Co. 1900. Pp. 227. Price 6*s*.

A THOUGHT which forces itself upon the attention of a reader of Mr. Gurnhill's book is "Who will be influenced by it?" The author is alarmed at the proportional increase of suicide in recent years and has in this book addressed himself to combat the tendency, no doubt with the most serious purpose. But why should suicides be amenable to his arguments? Especially does this consideration weigh when it is found that he excuses himself from dealing with the arguments of Pliny, Seneca, and others who have expressed approval of suicide under certain conditions on the ground that "we can scarcely be expected to form our conclusions from ancient classics or take as models for imitation the practices applauded in pagan religions. We have, or at least we believe we have, clearer and truer light to guide us" (p. 19). The position is a difficult one for a writer who wishes to persuade his readers of the error of their ways. And in truth Mr. Gurnhill is himself not quite unconscious of the difficulty. "Full well I know," says he, "that in many cases of suicide—perhaps the majority—neither the dictates of reason nor the precepts of philosophy or religion come into operation." But he thinks that "it is none the less true that the more a man is imbued with sound views as to the moral aspect of suicide the less likely is he in time of trial, temptation, and distress to have recourse to that deadly crime" (p. 71). This, then, is the view with which this book is written. It is a contribution to the task of forming a sound public opinion on a matter which, beyond all question, is a matter of great public concern.

We are not at all disposed to cavil with Mr. Gurnhill concerning the limitations which he chooses to impose upon himself in connexion with his task. If he thinks that he can better reach the section of society to which he addresses himself by refusing to discuss his position with those who do not accept the Athanasian creed we are quite prepared to take him at his own valuation and, so far as in us lies, to recognise a serious effort to spread sound views of morals whether the area of operations be extended or circumscribed; and we perceive that Mr. Gurnhill has some notable qualifications for the task which he has undertaken. He is a scholar and is well read in the subject of which he treats. His scholarship, moreover, is of that literary order—much undervalued at the present day—which enables him to write with perspicuity and force, so that what he says is said pleasantly and to good purpose. But with all these qualifications for his task he has one capital defect. He deals with his subject in that meditative, uncritical—we had almost said absent-minded—style which is the besetting sin of clergymen and the vice of homiletic writing. In fact we have seldom seen so striking an example of want of thoroughness as is furnished by this book. Here is a volume of over 200 pages, devoted to the morals of suicide, written from the standpoint of a Christian clergyman who insists much, and naturally so, upon the example left by the Author of the Christian religion, and yet from cover to cover there is not a word about that awful problem—the duty that sometimes corners the true Christian and good citizen—of laying down his life. Suicide in this book means nothing but the petulant act of the disappointed man who rushes on his fate. The tragedy, the problem, the unselfish dread of becoming burdensome or of cankering a young life with the infirmity of an old one—these things do not exist for the author, who can speak of suicide only with horror as "this deadly sin" and is sanguine that it will become less rampant if the Christian churches can agree about the three creeds (p. 197). It is a disappointing book.

JOURNALS AND MAGAZINES.

The *Monthly Review* for January, 1901, is an excellent number, sustaining the reputation which Mr. Murray's sumptuous magazine has already won for itself. The two editorial contributions, "Unity and Uniformity" and "The Little Englander," will especially commend themselves to medical readers by their sanity and good temper. Our profession have much experience of the really ill-effect that the acerbity of politics has had upon the public health, and as an antidote we are able confidently to recommend the articles to which we refer. By reading them the party politician will learn to his surprise that "Imperial" does not mean everything that is hall-marked by the Carlton Club; that many of the proudest names in our history have regarded the perfecting of England as an admirable method of increasing the value of our rule and maintaining the respect of greater Britain as well as of foreign nations; and that no section or school of political thought has the monopoly of honesty, good intention, and patriotism.

The *Cornhill Magazine* for January, 1901, has an article from Dr. Conan Doyle's pen which shows the medical novelist in a very favourable light as a controversialist. The author of "The Great Boer War" in his valuable book criticised our military administration, as it came under his own eyes when serving with the South African Field Force, his criticism taking the shape of a short but thoughtful sketch of a method by which, it seemed to him, the military force of this country might be made more formidable without an increase of expense. His remarks entailed upon him some rather severe reflections from certain military experts, two of whom took up the position that military affairs should be left to military men—that, in fact, as Dr. Conan Doyle says, "civilian comments are of the nature of impertinence." With this contention, which is tantamount to a claim for the art of war that it is in every branch and twig an exact science, Dr. Conan Doyle makes short work. His rejoinder is studiously fair and polite, but he maintains his original position and in our non-military opinion, which may or may not be impertinent, there is so much to be said for Dr. Conan Doyle's scheme that we trust soon to hear of its endorsement, in part at any rate, by responsible persons.

The *Pall Mall Magazine* for January, 1901, starts under new editorship, but shows no falling away from the excellent position which it has won for itself. It is full of good things and capitally illustrated. The reproductions of the works of Rodin, the impressionist French sculptor, will

be of interest to anatomists. Mr. Winston Churchill's essay on the British officer is readable and reasonable. An article upon Flanders lace makes us regret the days when throughout the length and breadth of a large tract of England some of the finest lace in the world was made by the villagers. To the medical officer of health and the practical sanitarian, struggling with the evils of urban over-population, it must seem an extraordinary thing that such an industry, so pleasant, so well-paid, and not requiring of its operatives more than the most distant connexion with a market, should have been allowed to die out. Political economists can doubtless give a reason for this. We cannot; we can only regret the fact.

Analytical Records
FROM
THE LANCET LABORATORY.

(1) TABLOIDS, (a) BENZONAPHTHOL, (b) THREE SYRUPS AND (c) CALOMEL; (2) HYPODERMIC TABLOIDS; (3) OPHTHALMIC TABLOIDS; AND (4) SOLOIDS OF POTASSIUM PERMANGANATE.

(BURROUGHS, WELLCOME, AND CO., SNOW-HILL-BUILDINGS, E.C.)

BENZONAPHTHOL has recently been tried with some success as an intestinal antiseptic in fermentative dyspepsia, in typhoid fever, and dysentery. It is a true molecular compound of benzoic acid with beta-naphthol. It is insoluble in water and in acids but soluble in alkalies. It thus escapes decomposition in the stomach, but is resolved in the intestinal tract into benzoic acid and naphthol. The tabloid contains five grains of the derivative, which in this form is very convenient for administration. A combination of the well-known syrups—namely, Easton syrup, the compound syrup of hypophosphites, and the compound syrup of phosphate of iron—is represented in the tabloid called "Three Syrups." The equivalents of these are 15 minims of each of the first two syrups and 30 minims of the compound syrup of phosphate of iron. We have carefully examined chemically the constituents of this interesting combination and the presence of each and all was confirmed; the constituents were found preserved in the fresh state. This speaks well for the composition and probable efficiency of the tabloid, while it is needless to point out the advantage of this combination in the form of tabloid as compared with syrups. A useful tabloid also is that containing three grains of specially purified calomel. Euphthalmine has recently been introduced in ophthalmology as a favourable substitute for atropine. In the form of hydrochloride, present in the ophthalmic tabloid to the extent of one-fortieth of a grain, euphthalmine is said to produce when applied to the conjunctiva full dilatation of the pupil with but moderate disturbance of accommodation and no change in intra-ocular pressure. Its advantages are such that it appears to be especially suitable for ophthalmoscopic examinations. The tabloid dissolves immediately it is placed upon the conjunctiva. Amongst new additions to hypodermic tabloid products are morphine sulphate a quarter of a grain, and strychnine sulphate $\frac{1}{60}$th of a grain, a combination which has been used in phthisis with cough and cardiac weakness. These drugs have also been employed previously to administering an anæsthetic and are even stated to render less chloroform necessary, whilst the presence under these circumstances of the cardiac stimulant strychnine is considered an advantage. For hypodermic use also morphine sulphate has been combined with ergotinine citrate in the hypodermic tabloid in order to favourably modify the action of the hæmostatic. Lastly, a new soloid of potassium permanganate has been prepared containing one grain of the salt. It is useful for the preparation of a harmless antiseptic and disinfectant solution or for the ready preparation of an injection, lotion, or gargle.

(1) PEROXINE; (2) PEROXINE LOTION; AND (3) PEROXINE OINTMENT.

(THE NEW INDUSTRIAL REFINING CO., LIMITED, 8, PRINCES-STREET, E.C.)

These are all very interesting products, the active constituent of which is peroxide of hydrogen. Peroxine itself is a colourless liquid with an agreeable smell and is capable of yielding nearly twice its volume of oxygen. According to further analysis it contains nearly 1 per cent. of an essential oil which has become oxygenated during the course of manufacture. It is owing probably to the presence of this essential oil that the liquid is practically permanent in oxidising power and properties. Peroxine is intended for internal application. Apart from its marked antiseptic properties it is a real deodorant and cleansing agent. These properties render it useful in certain gastric and intestinal disorders, while it is said to have some oxygenating effect on the blood and thus to be beneficial in anæmia. Peroxine lotion is a stronger preparation, containing, according to our analysis, 5 per cent. of oxygenated essential oil and yielding nearly 10 times its volume of oxygen. It is curious to note the effect of oxygenating an oil, which makes it miscible with water. Thus peroxine lotion is a perfectly clear homogeneous fluid and yet contains 5 per cent. of an essential oil. On evaporating the lotion the oil commences to separate. Ether extracts the oil from the lotion and the oil may be recovered by allowing the ether to evaporate. It still possesses strong oxygenating powers, as is shown by its effect upon chromic acid, permanganate of potassium, &c., in the presence of water. The oil under these circumstances may possibly generate ozone. The lotion is permanent as regards its oxidising strength, owing, doubtless, to the preserving effect of the oil. It is suggested for external use for wounds, skin eruptions, &c., and as a healing application generally. It is a powerful deodorant and antiseptic and effective in cleaning or deodorising foul discharges. Peroxine ointment is a white unguent containing an oxygenated essential oil. The ointment basis is white vaseline. It is a very agreeable ointment to use, soothing and healing on account of its antiseptic and oxygenated properties. It is worth while pointing out that not the least important advantage of these preparations is that while they are powerfully antiseptic and deodorising they are non-posionous.

VAN YSENDYK'S ROYAL NETHERLANDS COFFEE.

(ROTTERDAM. LONDON AGENCY: H. A. KRAMERS AND CO., 23, ROOD LANE, E.C.)

Undoubtedly the frequency with which coffee has been adulterated in the past is a factor which has rendered it less popular as a wholesome and agreeable stimulating beverage than it deserves to be. Even when the coffee is genuine its good qualities depend largely upon its method of manufacture and chiefly in regard to the way it is roasted. Finally, the preparation of coffee in England is not understood. The specimen before us is described as a new coffee. Whatever that may mean it is certainly good coffee and nothing but coffee. It possesses to a degree that peculiar fragrance which makes coffee attractive. It yields a very agreeable infusion, rich in the aromatic products obtained on roasting the berry, containing also a notable proportion of oils of coffee.

LERINA LIQUEUR.

(COVERDALE, POHLMANN, AND CO., 5, MARK-LANE, E.C.)

This is a liqueur said to be made by the monks of the Abbey of Our Lady of Lérins, Cannes, and is well known in the Riviera. The abbey, it is stated, dates from the fourth

century and "was a nursery of learned men, orators, and saints." Like other monastic liqueurs Lerina is a secret preparation, but we have found no constituent in it to which objection could be taken. It is a pale olive-green, syrupy liquid with peculiar delicate flavour. On analysis the liqueur gave the following results: alcohol—by weight 32·87 per cent., by volume 39·47 per cent., equal to proof spirit 69·16 per cent.; extractives and sugar, 33·45 per cent.; and mineral matter, 0·06 per cent. The liqueur has certainly an interesting and ancient history, and doubtless great care is directed towards its preparation and to the choice of its ingredients. Like most liqueurs containing the essential oils of plants or flowers it is an agreeable "digestive," acting as a carminative and producing a sense of comfort in the gastric centre after a meal.

IMPREGNATED WAX VESTAS.

(LONDON WAX VESTA CO., THE POINT, WANDSWORTH, S.W.)

We called attention in THE LANCET of Nov. 24th, 1900, to the danger arising from the ignited heads of wax vestas flying off on striking. Of course, a good deal depends upon the kind of rubber upon which the match is struck, but undoubtedly the tip is often at fault. It seems to us that it would be useless to offer a remedy in the shape of a rubber admirably adapted for the purpose because the public demand a match which will strike anywhere or on any surface without regard to its suitability for the purpose. Our remarks have been endorsed by the above company who have turned their attention to the preparation of matches which shall not lose their heads when struck. The resulting match is known as the impregnated wax vesta. We have tested a number of these matches by striking them on all sorts of surfaces and sometimes on fairly sharp points, or series of points, which, of course, is a severe ordeal. The impregnated vestas satisfied these tests and therefore their adoption, could it be universal, would largely, if not entirely, remove the objectionable and dangerous tendency of the red-hot heads to fly off in all directions on striking.

(1) "KUMOFF" AND (2) "NETTWAR."

(THE WALL-PAPER CLEANING SYNDICATE, LIMITED, 22, GLASSHOUSE-STREET, PICCADILLY-CIRCUS, W.)

The above are the names respectively of a wall-paper cleaner and a paint and varnish cleaner. "Kumoff" is a plastic substance resembling putty but reddish in colour and smelling distinctly of oil of cloves. Apparently it is a proteid substance akin to the gluten of wheat flour. It acts mechanically and after the manner of a piece of soft bread or dough in removing patches of grime from wall-paper or ceilings. "Kumoff," however, is far more effectual than bread or dough. It rapidly removes dirt and when carefully used transforms a blackened ceiling or paper to its original clean condition. "Kumoff" distinctly belongs to sanitary preparations: it works well and is cleanly. The bacteriology of "Kumoff" after it has been used would be interesting; it would, of course, teem with microbes, millions of which must have their habitat on walls and ceilings. "Nettwar" is a pink, soapy fluid containing some carbolic acid. It is a cleansing application for painted and varnished surfaces. Both preparations are essential to a sanitary equipment.

LIME JUICE WHISKY LIQUEUR.

(L. ROSE AND CO., LIMITED, 41, MITCHELL-STREET, LEITH.)

The analysis of this somewhat novel liqueur was as follows: absolute alcohol—by weight 29·87 per cent., by volume 36·04 per cent., equal to proof spirit 63·17 per cent.; sugar and extractives, 33·03 per cent.; mineral matter, 0·03 per cent.; and acidity reckoned as citric acid, 0·75 per cent. The whisky employed is stated to be malt spirit 10 years old. Judging from the smooth flavour of the liqueur and the spirit obtained from it on distillation this is probably a fair description. We could trace no objectionable preservatives; and, in fact, the alcoholic strength would render the addition of a chemical preservative quite unnecessary. The liqueur is somewhat syrupy and sweet to the taste, but in it is preserved the pleasing aroma of lime fruit. It is an agreeable and wholesome liqueur, having in particular to recommend it that its composition is declared. Lime juice and whisky are, by the way, not quite an unheard-of association.

INVALID SPECIALITIES, BEEF-TEA, JELLIES, ETC.

(POULTON AND NOEL, BELGRAVIAN WORKS, BREWERY-ROAD, N.)

We are glad to notice that the practice is increasing of inclosing invalid specialities in glass vessels and not in tins. Except the home-made beef-tea, which was submitted to us amongst other things for examination by the above firm, the jellies and the essence of beef were contained in air-tight glass jars. The beef-tea gave the following approximate analysis: water, 92·74 per cent.; total solids, 7·26 per cent.; mineral matter, 0·66 per cent.; and nitrogen, 1·13 per cent. The tea was opalescent but did not contain muscular tissue. Considering the proportion of water its real nutritive power is decidedly low. It possesses, however, a pleasant beefy flavour and is agreeably stimulating, serving to rouse also the appetite for more solid nutriment. The beef essence gave on analysis the following results: water, 86·30 per cent.; total solid matter, 13·70 per cent.; mineral matter, 3·76 per cent.; and nitrogen, 2·04 per cent. This is a well-prepared essence of agreeable flavour and helpful to invalids or those with enfeebled digestive function. It is perfectly clear and free from the smell and flavour of a preparation concentrated by heat. It contains, excluding gelatin, a comparatively small proportion of proteids. The calves' feet jelly was excellent in all respects, possessing a delicate flavour and consistence calculated to appeal to the fastidious palate.

FRANZISKANER LAGER BEER.

(J. SEDLMAYR, MUNICH, AND ANDRÉ STAHL AND CO., 47, MORTIMER-STREET, W.)

It is well known that some very definite control is exercised over the production of beer in Bavaria. It must be made from malt and hops only. The specimen before us is produced at the celebrated Leistbrau in Munich, and according to our analysis exhibits the usual excellent composition of Munich beer. Our analysis was as follows: extractives, 6·02 per cent.; mineral matter, 0·20 per cent.; alcohol—by weight 4·62 per cent., by volume 5·78 per cent., equal to proof spirit 10·13 per cent. The beer was evidently Pasteurised and we could find no chemical preservatives or, as we suppose we ought to add now, any trace whatever of arsenic. It is noteworthy that Munich beer, though less alcoholic than English beer, contains a much larger proportion of the nutritive extractives of malt. The specimen examined was excellent and in sound condition, possessing those characteristics of flavour and palatability for which Munich beer is esteemed.

NEW HOSPITAL FOR MONMOUTH.—At the annual meeting of the subscribers of the Monmouth Hospital, held on Dec. 22nd under the presidency of Lord Llangattock, it was stated that £4000 would be required for the erection of the new hospital and that £2356 had been already subscribed.

ROYAL MINERAL WATER HOSPITAL, BATH.—The committee of this hospital are making an earnest appeal for £6000 towards carrying out some extensive alterations and improvements in the institution. The hospital was opened for the reception of patients in 1742, since which time 76,000 poor persons have been admitted, of whom about 65,000 have been relieved. Patients are admitted without any subscribers' recommendations.

THE LANCET.

LONDON: SATURDAY, JANUARY 5, 1901.

1901.

WE do not propose here to make an attempt to summarise the scientific progress of the past century within the limits of a leading article. Our contemporary, the *British Medical Journal*, in an excellent special number published at the end of 1900, gave an account of the march of medicine during the past 100 years, and able and inclusive as the story there told is, we are certain that its authors would be the first to say that their difficulty was not what to say but what to omit. Yet with the dawn of a new century it is fitting that we should glance back over the old one, to see in what ways we have the right to call ourselves better than our fathers. Obvious progress, of course, there has been in most of the departments of human intellect, and this is especially true of that department of the intellectual process known as science. In art we may say without contradiction that we have not progressed. Compare any modern building with Durham Cathedral in ecclesiastical architecture, with Magdalen College, Oxford, in collegiate architecture, with Hatfield or Haddon in domestic architecture; put an ivory or a wooden carving of the middle ages beside a modern one, compare the textile fabrics of Venice in her glory with those produced nowadays (other than those that are openly imitations), and it will be seen that here we have made no progress. But in science the case is very different. Here we have learned from the efforts and mistakes of those who have gone before us, and in every instance and in every department of science we at the beginning of the twentieth century are far more advanced than was the race at the beginning of the nineteenth. The steam-engine remained for centuries a mere toy: from the time of HERO, B.C. 120, to the time of the Marquis of WORCESTER no use was made of the expansive powers of the vapour of water, and from 1663 until the era of WATT and STEPHENSON but little progress was made. But within the last 100 years we have slowly moved onwards from the "Rocket" of STEPHENSON and the little "Comet" of BELL to the mighty locomotives of our railway companies, and to H.M.S. *Viper* with a speed of 35 knots per hour. And yet the principle by which the latter is driven is the steam turbine first described by HERO over 2000 years ago, a fact which shows that what each generation deems to be perfection is only an example of transition.

In those departments of science with which we are nearly concerned—namely, medicine and surgery in their widest applications—we are more obviously in a state of transition than we are in any fields of exact knowledge. Surgery has advanced to a greater degree than medicine, but this is mainly because surgery, as its name states, is to some extent a handicraft. The technical methods of our day are far ahead of those of our ancestors. The discovery of anæsthetics and the perfecting of the antiseptic or aseptic system have made feasible operations the very thought of which would have stayed the hands of our ancestors. It is not that modern surgeons are necessarily better anatomists, or better practitioners than their predecessors, but that they have better tools, and a cleaner *milieu* in which to work. These facts account for the death-rate of surgical cases having shrunk in some instances almost to a vanishing-point. But we are not belittling the surgery of to-day. As a handicraft it has progressed notably. But surgery is not only a handicraft—it is also a science, and modern surgeons have progressed on truly scientific lines, for they have used the accumulated experiences of past leaders while benefiting by recent discoveries. With regard to medicine the progress has not been so obvious during the century. The identification of certain specific germs and the recognition of the evil powers of certain parasites, like the differentiation of typhoid fever from typhus fever, by leading to treatment based upon pathology have saved thousands of lives, and bid fair to save a yet larger number in the future. And small-pox has been robbed of its terrors by vaccination, but vaccination is prevention and not treatment, and it is in prevention that the modern progress of medicine has been made. And everything goes to show that it is in this direction that the main advances will be made during the twentieth century. Not that medical treatment is to be despised, for if the *materies morbi* gains access to the body it can be removed only in one of two ways—either by the knife or its equivalent, or by the natural defences of the organism aided by rest, careful dieting, and in some cases drugs, including such medicaments as the antitoxins. No one of us can cure a fever by medicines, but we can and do put the sufferer into such a position that his bodily powers are placed in the best possible state for coping with disease.

In olden times the medical man was looked upon as a wizard. When summoned to the bedside of a patient he dressed himself in a fantastic dress, rattled strings of bones, beat a drum, and howled invocations to the devils which were supposed to be causing the disease. Similar things were done in communities that esteemed themselves civilised and since the mediæval birth of learning; but such a bedside manner was quite in accordance with what was expected of the medical man; and sometimes the patient recovered. As time went on most of the fantastic accessories disappeared, but a hundred years ago there were still considered by the majority of observers to be special remedies for all special diseases. This last belief is by no means extinct at the present day among a large section of the public, where the "doctor" is someone who gives a "bottle" selected according to the particular illness on hand. The best "doctor" is here considered to be he who can most quickly give a name to the disease, for if he can do that at once he need have no hesitation about which "bottle" to administer; it follows, therefore, that the quack has an enormous advantage over the medical man, as the quack, unhampered by knowledge, is always ready with diagnosis and specific. The practice of medicine by taking prevention as its chief aim has effectually disassociated itself from all quackery, and the medical practitioner of to-day has earned the

right to be looked upon as one having a duty to perform to the State. Consider what the plague of London in 1665 meant. Nothing but the efforts of medical men prevented the plague of Glasgow in 1900 meaning the same thing. We give an instance of signal success, but how much remains to be done. Enteric fever and plague still ravage India, diphtheria and scarlet fever still cause many deaths in our great towns, and tuberculosis still cuts short many a life. With the last-named disease we seem to be about to be able to cope successfully; at any rate the new century will see an organised attempt in these islands to deal with the national infliction, while there are grounds for hoping that the prevention of malaria in some forms is within sight. The mention of this last disease reminds us that stress must not be laid upon the value of prevention to the neglect of remedial measures. Just as quinine is of proven value in malaria, so there are many remedies of tried repute for other pathological conditions and morbid symptoms. While the ideal of medicine is the prevention of disease, the practice of medicine consists in the application of general treatment and special remedies. How much can be done for the sufferer by a medical man having all the modern resources of therapeutics at his command we all know—the public and the medical profession alike. How those resources may be increased by physiology, chemistry, and the comparatively new science of bacteriology in the near future we can only guess.

During two-thirds of the past century THE LANCET has tried to be, and has we hope succeeded in being, a faithful and impartial chronicler of progress in medicine, in surgery, and in hygiene. We have noted mistakes and failures as well as successes, and by both our readers as well as ourselves have profited. Our egoism will, we hope, be pardoned if we point out that to THE LANCET and its Founder are due such reforms in the profession of medicine as the Medical Act, the Anatomy Act, the provision for a medical education of the best kind, and the banishment of nepotism and favouritism from the great hospitals. All these reforms took place during the century that has gone, and to them is due the enormous change that has taken place in the position occupied in the public eye by the medical practitioner. It only remains for us to say, on the threshold of the new century, that we are honestly proud of the long and steady support which THE LANCET has received since its commencement from the medical world, and that we shall strive during 1901 to work as we have worked through the past 77 years for the welfare and advancement of the profession that we love.

The Sanitary Administration of the County of London.

IT is satisfactory to gather from the annual report of Mr. SHIRLEY MURPHY, the medical officer of health of the County of London, which was published last week, that the county maintains its sanitary condition. This state of affairs may be regarded as dependent in no small degree upon the ability and zeal with which Mr. SHIRLEY MURPHY and his officers are known to approach the many difficult problems that are necessarily involved in the efficient sanitary administration of a crowded area like London and its environs. Supplementary reports are contributed by Dr. W. H. HAMER on the sanitary administration of Kensington, and by Dr. C. W. F. YOUNG on the sanitary condition of cemeteries and burial-grounds. Dr. HAMER considers that the staff of sanitary inspectors in Kensington should be increased, and Mr. SHIRLEY MURPHY endorses this view. Dr. YOUNG found it not possible to estimate accurately the length of time for which the existing provision of burial-grounds would suffice, but he shows that there would be advantage in steps being taken to encourage methods of interment, advocated by Sir F. SEYMOUR HADEN and Dr. G. V. POORE amongst others, which aim at the speedy dissolution of the body. For the present we have not space for dealing with the interesting statistical returns contained in Part I. of the report, which deal mainly with the question of population, with the figures of the births, marriages, and deaths in London, and with the prevalence of disease in the county. These statistics represent an enormous amount of careful, we might almost say loving, work, and are entitled to separate treatment on another occasion; for the present we must be content with referring to the various matters of administration which are dealt with in Part II.

Interesting and terrible disclosures have been made during the year in connexion with the trafficking of those deliberate fiends who attempt to sell, and too often succeed in selling, animal food absolutely unfitted for human consumption. We take, for example, the following cases. Mr. SHIRLEY MURPHY had occasion to inquire into the business of a knacker who was sending animal flesh to certain premises in the east of London. The occupier of these premises was presumably a dealer in cat's meat, but suspicion was aroused that this particular consignment of flesh was intended for human consumption, since it was dressed in a manner which was consistent with this view. It transpired that among the customers of the occupier of these premises was a "manufacturer of high-class meat pies." It is not surprising, therefore, that Mr. SHIRLEY MURPHY is once again led to emphasise, as he did in his last report, the need for adoption in London of a system of meat inspection similar to that of many large foreign towns. There is no systematic inspection of meat in London, and until an efficient system is adopted there is not the least doubt that unsound meat will be freely introduced from all parts into London, to the prejudice of the poor who at present receive no assistance from the authorities. The sale of tinned foods to the public in a state of decomposition forms another and similar instance of outrage of the commonest instincts of humanity. Tins of milk, salmon, sardines, soups, rabbits, compressed beef, and vegetables, bearing every evidence of the rottenness of their contents, are, it will be seen from this report, bought in large quantities from importers who have rejected them for their own purposes. This garbage eventually finds a sale amongst the poorer classes. The tins are pricked to let out the putrid gas, are resoldered, have fresh labels pasted upon them, and the appearance of a wholesome article is thus given to them before they are retailed to the defenceless poor. The iniquity of one transaction detailed in the report was emphasised from the fact that the invoices produced

were marked "pigs' food," but the infamous dealer failed to show that he had ever sold a tin in his life for pigs' food. By recounting in detail one such story Mr. SHIRLEY MURPHY proves among other things the desirability of the London County Council organising larger powers of control over the sanitary condition of premises on which food is prepared for sale. There can be little doubt that food has often proved poisonous on account of having been exposed to a filthy environment during preparation, as, for instance, exposure to the gases or effluvia from sewers and drains. We might mention that such powers are urgently needed in the case of premises where ice-cream is manufactured. "Deaths from ice-cream" is a familiar heading in the summer newspapers, and so long as the filthy conditions of the Italian quarter in Hatton-garden, described by our Sanitary Commissioner some years ago, are maintained, there can be no wonder that fresh victims are added to the list. We have suggested the plan of registering persons engaged in the preparation of all food-stuffs, and some such means of reform will have to be undertaken.

Sanitary authorities in the County of London appear to be moving tardily in the matter of providing public means of disinfection of infected articles. It is to be hoped that the constitution of the new metropolitan boroughs will bring to an end the delays which have been primarily responsible for the unsatisfactory arrangements which have hitherto existed in many parts of London. A further important point in this matter is mentioned by Mr. SHIRLEY MURPHY—that is, the need for provision of laundry accommodation in connexion with the apparatus for disinfection, so as to obviate the necessity of householders sending to public laundries articles which are infectious. The satisfactory removal of house refuse, though formerly a bugbear of all sanitary authorities, is steadily extending. The effect of the introduction into districts of a system of weekly calls at each house for the purpose of removal of refuse, instead of the old method of the dust-cart perambulating the streets and calling only at houses in which the need for collection is manifested by the exhibition of a D-card or on request of the householder, is shown by the reduction in the number of complaints dealt with by the sanitary authorities. In some districts, however, improvement is still widely needed in regard to dust collection. Householders are sometimes negligent in this matter themselves, in which case, of course, they are to be blamed for any insanitary development, the only regrettable thing being that the offenders against decency are not likely to be the only victims of their criminal carelessness.

The flooding from sewers—notably in Kensington, Newington, Battersea, and Plumstead—has led the County Council to adopt certain resolutions in regard to a scheme for providing additional outfall sewers. This would involve for both sides of the Thames an expenditure of nearly £3,000,000 of money. It is to be feared that London sewers are taxed to the very utmost, and, if we mistake not, we have in these occurrences only the beginnings of a future great problem which must be seriously faced. Nuisances arising from sewer ventilation continue to be complained of, but the complaints cease as level ventilators are closed and shafts erected to take their place. The pollution of the river Lea calls for serious attention owing to the unsatisfactory condition of the effluents from the sewage-farm at Walthamstow and the sewage works at Leyton, but apparently no progress has yet been made in the direction of improvement by the responsible parties. The pressure of a central authority is very properly suggested by Mr. SHIRLEY MURPHY and we shall be glad to hear of such pressure in operation.

A supplementary report embodying the results of the examination of cows in London cowsheds, both generally and in regard to tuberculous disease of the udder, is contributed by Mr. P. J. SIMPSON. This gentleman's appointment was recommended by the Public Health Committee so as to give effect to the new Order of the Local Government Board relating to tuberculous disease of the udder of the cow. As a result of inspection Mr. SIMPSON and his two colleagues recommended (*a*) that for the purpose of giving effect in London to the Dairies, Cowsheds, and Milkshops Order of 1899 the cows in London cowsheds should be examined by a veterinary surgeon and two assistants at intervals of three months and suspected cows at more frequent intervals; and (*b*) that 100 samples of milk should be sent for bacteriological examination. These recommendations were ultimately adopted by the Council. Mr. SIMPSON found that out of the 5144 cows that were inspected 4464 were free from disease or abnormalities of the udder.

Continued activity is maintained in regard to checking the smoke nuisance. Proceedings, we are glad to hear, were successful in all but a few cases. The chief officer of the Public Control Department of the London County Council (Mr. ALFRED SPENCER) adds in his supplementary report that "so many improvements have been made in recent years in furnace construction that with proper care in stoking no nuisance need be caused." That describes exactly the attitude we have adopted on this question for several years past.

We have made no attempt to do more than indicate the contents of Mr. SHIRLEY MURPHY'S vast record of work done. A dozen subjects, many of them every whit as important as those we have selected for notice, are not here alluded to, while in numerous places the report calls for exhaustive consideration by the physician and statistician alike. But we have said enough to show that our mighty metropolis at the beginning of the new century is receiving excellent sanitary care. The task before the medical officer of health of the County of London and his assistants is tremendous, but supported as they are by the consciousness of successful labour in the past and of hearty coöperation by the new boroughs in the future, they are sure to give a good account of themselves.

The Employment of Unqualified Dispensers.

THE finding of the General Medical Council in the case of Dr. JOHN M. THOMSON which we reported in THE LANCET of Dec. 8th, 1900, p. 1695, is one of much importance to general practitioners, especially those of Scotland. In fact, in Scotland the matter constitutes a burning question. Meetings of the profession have been called in different places, at each and all of which certain speakers have spoken with much warmth. At one such meeting, that of the

Glasgow Southern Medical Society, where Dr. WILLIAM WATSON presided over a crowded assembly, the *locus standi* of the General Medical Council was questioned. and further meetings, where presumably the same feeling will be manifested, are promised in the near future. Although we deprecate any undue warmth in the discussion of this question we can readily understand that the practitioners of Scotland have felt embarrassed by the decision of the Council. It has come upon them suddenly. Dr. THOMSON himself had only short notice of the complaint made against him. The President of the General Medical Council explained that this apparent hurry was due to the view that it was kinder to Dr. THOMSON to bring the matter to an issue than to leave it in suspense for six months. This is quite intelligible, but nevertheless the question is a new one. There may not be much to say on the side opposite to that taken by the General Medical Council, but the matter will be all the better settled by the avoidance of undue haste in the future stages of the case, and by due consideration of those affected by the decision of the disciplinary body of the profession.

Let us state shortly and clearly the nature of the complaint against Dr. THOMSON as well as the action taken by the General Medical Council. The complaint was that, being a registered medical practitioner, Dr. THOMSON employed as assistants—he had had at least two such—"for the sale of drugs and poisons persons who are not qualified to act as chemists or pharmaceutical assistants, and thereby caused such persons to commit breaches of the Pharmacy Act." The first thing that occurs to anyone in reading such a complaint is that it would come more naturally from the Pharmaceutical Society than from the General Medical Council. Why should the General Medical Council do the work of the Pharmaceutical Society? The question is a natural one. The druggists are constantly invading the domain of the medical man and doing his work—diagnosing and prescribing as if they were educated and entitled to do so. The medical profession is badly treated by many pharmacists qualified under the Pharmacy Acts, and it is natural to ask why the General Medical Council should act, or seem to act, against a registered medical practitioner for an offence under the Pharmacy Acts. But there is an answer to the question. The Pharmaceutical Society had instigated no less than 46 prosecutions of unqualified druggists' assistants and had done so with little effect. The law is that the actual seller of the drug or poison is to be convicted, not his principal. The actual seller is generally poor and the practice of employing an unqualified person is very general in druggists' shops. Accordingly, the fine imposed is very nominal and the custom goes on unchecked. In other words, the Pharmacy Acts in Scotland are largely nullified. Obviously the evil calls for an amendment of the Pharmacy Acts, making the principal—whether chemist or medical man—responsible for the acts of his agent. But here comes in the action of the General Medical Council. Clearly it has no jurisdiction over druggists or the proprietors of druggists' shops. But when a medical man engages an unqualified person to take charge of a dispensary for eight hours out of 10 daily, who sells all sorts of drugs even to children—including half an ounce of laudanum of which no record was kept in a book—it is surely time to ask if the General Medical Council can do nothing to stop a practice so dangerous to the public and so discreditable to the profession. If the law cannot effectually touch the druggists at least the General Medical Council can check such dangerous practices among those who owe it allegiance. The General Medical Council allows the legitimate use of a dispenser to make up the prescriptions of the practitioner who employs him on the supposition of direct personal supervision of the work done and of the responsibility of the principal. But all these conditions fail in Dr. THOMSON'S case. The principal is absent for eight hours out of the working day, and the drugs are supplied irrespectively of medical prescription. And a certain sanction is given to the business by the fact that the proprietor of the shop is a medical man. That the premises are owned by a medical man is taken to mean that he is present and is answerable for all that is done. No medical man can really approve such a system. There is nothing medical or professional about it. It is distinctly contrary to the public interest that a medical man should give his sanction to a system so loose and so likely to lead to the injury of the public. In this particular case the laudanum, to the sale of which allusion has been made, was used suicidally by a woman in the sufferings following upon childbirth. This, of course, was an exceptional tragedy, but it arose out of an habitual state of affairs and is a telling argument against such a state.

The General Medical Council could scarcely be expected to act otherwise than it did when such a system was brought under its notice. It is responsible to the public for the regulation of the professional conduct of registered practitioners by certain great principles, and it must not evade the delivery of judgment in individual cases. Accordingly in this instance it found the complaint against Dr. THOMSON proved. It very properly adjourned the further consideration of the case till May. The Council, through its President, expressed its sense of the gravity of the charge, and gave Dr. THOMSON an opportunity to fully consider his position in the interval. Dr. THOMSON will act wisely by looking at this question from the standpoint of the General Medical Council and of the great majority of the medical profession. He must dismiss from his mind all idea that he has been sacrificed to the little jealousies of druggists, or to over-anxiety on the part of the General Medical Council to do the work of the Pharmaceutical Society. The General Medical Council has to provide that the action of medical men shall be regulated on such principles as will secure the welfare and safety of the public, therefore it was bound to prohibit him from using unqualified men in the manner that he was doing. We have no wish to be hard on Dr. THOMSON. In keeping a shop for the sale of drugs and poisons over the counter, in trade fashion, and without prescribing, he only did what many others of his profession do in his division of the kingdom. The custom is an old one belonging to more primitive days, and even now in lonely parts it may be capable of some justification. But in general, and at this time of day, it is not one consistent with the welfare of the public or the dignity of

the profession, therefore it must be altered. The practitioners of England have had to learn that they cannot use unqualified assistants. The lesson has been a hard one, involving removal of not a few from the Medical Register. The Council has insisted on this reform in England in spite of the obvious hardships inflicted by it upon the whole class of unqualified assistants and upon not a few practitioners. It must not hesitate to require in the same way that medical practitioners in Scotland, or elsewhere, shall not lend their professional name and status to cover a use of unqualified assistants in an open shop. Such a proceeding is quite different from that of dispensing the private prescriptions of a medical man under his immediate supervision in his private dispensary. Medical practitioners are at liberty to adapt themselves and their terms to their environment and to the modest means of those who need medical advice, but they are not at liberty to use their professional status to defeat Acts of Parliament, and to bring enormous risks at the same time within reach of the public whose health is presumed to be their care.

Annotations.

"Ne quid nimis.

THE NEW YEAR HONOURS.

THE new year's list of honours is remarkable in one way—namely, that no peerage has been conferred. Of those who belong to, or are connected with, our own profession we have to note the names of Thomas Barlow, M.D., F.R.C.P. Lond., and William Selby Church, M.D. Oxon., F.R.C.P. Lond., who have both been honoured by a baronetcy being conferred upon them. Dr. Barlow is a physician extraordinary to Her Majesty the Queen and is also physician to the Household. Dr. W. S. Church is President of the Royal College of Physicians of London and his baronetcy may be regarded as much a tribute to his official position as to his recent services on the Hospital Commission. In this connexion it should be noted that in the Order of the Bath Lord Justice Romer has been made Grand Cross. Lord Justice Romer, it will be remembered, was chosen to preside over the commission of inquiry into the management of the hospitals and other medical matters in South Africa. Among the Knight Commanders of the same order is the name of Sir William Turner, M.B. Lond., F.R.C.S. Eng. & Edin., the President of the General Medical Council. In the Order of St. Michael and St. George, Maximilian Frank Simon, M.D. St. Andrews, late principal civil medical officer of the Straits Settlements, has been made a Companion upon his retirement from office. In the Order of the Indian Empire Major John Crimmin, V.C., I.M.S., has been made a Companion. Among those who have received the honour of knighthood is Hugh Adcock, C.M.G., L.R.C.P. Edin., M.R.C.S. Eng., who is physician to H.I.M. the Shah of Persia, while Colonel James Sutherland Wilkins, I.M.S., and Arthur Neve, F.R.C.S., L.R.C.P. Edin., have been decorated with the Kaisar-i-Hind medal for "public service in India." Mr. Neve is a medical man working at Srinagar, Kashmir, under the Church Missionary Society. Lord Justice Romer's name is not the only non-medical name that deserves mention in THE LANCET. Among the new knights are Mr. Edward Henry Busk, Chairman of Convocation in the University of London, and Mr. Alfred Cooper (of Surbiton) whose philanthropy is known to our readers. Mr. William Jameson Soulsby, C.B., the secretary to so many Lord Mayors of London and secretary to the Mansion House Indian Famine Relief Funds in 1877, 1897, and 1900, has been made a Companion of the Order of the Indian Empire. To all these gentlemen we offer our best congratulations upon their well-earned distinctions.

THE LONDON WATER-SUPPLY OF A HUNDRED YEARS AGO.

VERY great changes have taken place in the water-supply of London during the last 100 years. At the commencement of the nineteenth century a large number of the people obtained the whole of their water from wells. Many houses had private wells, but in addition to these there were a great number of public wells in the streets. These were filled with surface water, and their depth below the ground level was not great. At the present time we are not aware of the existence of any private surface wells from which the water is used for drinking, but there are a fair number of deep wells which pass through the London clay into the chalk and from these excellent supplies are still obtained. One public pump still exists in Kensington Gardens, and there is one in Aldgate, but for many years the latter has been supplied with filtered water. At the beginning of the century it was quite a common thing for the inhabitants who lived near a public pump to send there for the supply which they required for drinking and for household purposes. Many of the wells became contaminated and towards the middle of the century the incidence of cholera in the neighbourhood of the pump in Broad-street, Soho, led Dr. Snow to make those careful researches which led to his discovery of the chief method by which cholera was spread in London. The oldest organised system of water-supply which existed in the metropolitan area was probably that of Westminster, for in the year 1800, and, indeed, till the middle of the century, the Abbey precincts obtained their water from Hyde Park. Some parts of Westminster were at that time supplied by the Chelsea Company, whose reservoirs were then situated in Hyde Park and in the Green Park. The site of the former is still plainly to be seen near Park-lane, not very far from the Duke of Westminster's house. It has been converted into a sunk garden. The Green Park reservoir was not far from Piccadilly, nearly opposite Half Moon-street, but the exact site is not at the present time marked by any visible trace. Other parts of Westminster were supplied by the New River Company, and by the York Buildings Company which pumped water directly from the Thames. The works of the latter company were near the Adelphi Buildings, and their tower is a prominent feature in all the contemporary drawings of that part of the north bank of the Thames. The company's customers were chiefly the residents in the Strand and in the adjoining streets. At this time (1800) much building was going on in Marylebone, which was not well supplied by the New River Company, and during the next few years two companies, the West Middlesex and the Grand Junction, were started to supply this important new residential area. Holloway and parts of Tottenham Court-road derived their water from Hampstead. In the City of London the New River Company had no monopoly and the London Bridge Waterworks Company still had a considerable number of customers whom they lost a few years later because they were unable to supply water at a pressure sufficient to reach the upper storeys of the houses, a condition which had become necessary in consequence of the exigencies of more modern sanitation. The East end of London in the year 1800 was supplied by waterworks situated at Shadwell and at Hackney. The New River Company declined to supply the latter place unless a certain minimum annual water rent was guaranteed to them. The source of

supply of the Shadwell Company was the Thames, and that of the Hackney Company, the Lee. The residents of South London bought much of their water from merchants who took it round in carts. The London Bridge Waterworks pumped some water to Southwark and there were other works near the church of St. Mary Overie. The Lambeth Company was started about the year 1795 and soon promised to do a roaring trade. It was energetically worked, the proprietors taking an active part in the extension of the business. At one time pipes could not be obtained quickly enough to satisfy the impatience of those desirous to be customers. The pipes then in general use were made of wood, usually of elm, and the lumen of the tube was formed by boring out the centre of a tree. The pipes fitted into one another and were fastened together by a band of iron. Such pipes are frequently dug up when the streets of London are excavated, and attention was lately called to one found in the City of London by a gentleman who happened to be passing when it was unearthed, and who promptly wrote to the *Times* concerning a portion of Roman drainage which he had lately discovered. A few specimens of these pipes have been preserved and two of them may be seen any day opposite a house situated on the south side of Jermyn-street, not far from St. James's Church. Wooden pipes were not very satisfactory, considerable leakage often took place at the joints, and it was computed that something like a fifth of the amount of water sent from the works was lost during its transit to the houses of the customers. It would be a mistake to suppose that wooden pipes were the only ones in use at the beginning of the century. Some of the mains and some of the smaller pipes also were made of lead. Wooden pipes, however, were in general use. Attempts were made at a later date to replace them by a substance called "artificial stone," but this material proved eminently unsatisfactory. ron pipes were then introduced, and although the initial expense of these was considerable they led to a great saving in the amount of water wasted, and were capable of standing high pressure without any untoward results. Very little was done at the beginning of the century in the way of water purification. Most of the companies pumped their supplies directly from the Thames and contented themselves by keeping out the grosser impurities by the use of a sort of sieve. The Chelsea Company's water was allowed to settle for a short time in their reservoirs, their customers not being sufficiently numerous to necessitate pumping every day. Of the public supplies that of the New River must have been by far the best. Some of the water came from a beautifully pure spring at Chadwell and that derived from the upper Lee was much superior to the Thames water. The New River itself was carefully guarded by stately officials who are represented in pictures as wearers of top hats and who had bound themselves by an oath to do their duty. Magistrates then took a severe view of the culprits who ventured to bathe in the river, and the offence was in the eyes of the law not a light one. The proprietors of the company and their friends made an annual survey of their property to see that everything was right; the survey occasionally occupied two days and the proprietors were wont to go down the river in a barge. It must have been a charming excursion 100 years ago. For the New River, in spite of the complete transformation of much of its landscape, is not devoid of beauty to-day.

THE AFTER-CARE ASSOCIATION.

THE work of the After-Care Association in helping poor persons discharged after recovery from asylums for the insane is deserving of greater support than it usually obtains. A home for convalescents from mental disease is a necessity, as was pointed out long ago and often by the great Earl of Shaftesbury during his prolonged office as chairman of the Lunacy Commissioners. Yet among the 240 convalescent homes on the register of the Charity Organisation Society not one appears to be specially designed and available for such inmates. The After-Care Association, by obtaining for these people, when needful, an interval of change of scene and air, by giving them grants of money and clothing, and by assisting them to obtain suitable employment, endeavours to fill a hiatus which ought not to exist. The work needs extending greatly, but this cannot be done until the necessary funds are forthcoming. The annual meeting of the association will be held in the library of Lambeth Palace on Jan. 29th, at 2.30 P.M., when the Archbishop of Canterbury will preside. All communications should be made to the secretary, Mr. H. Thornhill Roxby, Church House, Dean's Yard, Westminster, S.W., by whom contributions will be thankfully received, or they may be paid into the account of the "After-Care Association," Union Bank of London (Regent-street branch), Argyll-place, London, W. Any of our readers in search of an object for their practical benevolence can be certain that in this association they have a most worthy object, and as such it may be confidently recommended by them to laymen.

NIGHT-TERRORS IN INFANTS.

DR. ALFRED BEYRAND contributes in a recent *Thèse de Paris* (1900) an interesting clinical and psychological account of the night-terrors of children. This form of cerebral disturbance had been long recognised and in 1867 Dr. Sydney Ringer stated that there was a close analogy between night-terrors and nightmare. He adduced as common causes of both troubles bad food, excessive feeding at night, intestinal worms, and difficult dentition. Steiner (1876), however, showed from a large number of observations that an idiopathic cerebral irritation, associated probably with a transitory cerebral hyperæmia, lay at the root of this morbid psychical and sensorial disturbance. Debacker (*Thèse de Paris*, 1881) showed conclusively that vivid hallucinations of sight and of bodily feeling enter into the pathology of night-terrors and more recently Braun (1891) and Kamenski (1893) have proposed to classify this ailment in the group of neuroses which includes hysteria and neurasthenia, the actual attacks of pavor nocturnus being indications of a profound morbid nervous taint in the child. Soltmann has also shown in the "Handbuch der Kinderkrankheiten" (edited by Gerhardt, 1898) that the children who suffer from night-terrors are anæmic and present a distinct neuropathic predisposition, and that they are the offspring of families in which neuroses are found to prevail. In the present thesis Dr. Beyrand quotes a number of cases observed personally, in which it appeared that hallucinations, mainly visual, played an important part in determining the attacks. It is pointed out that in severe attacks the child screams and cries with terror, and is completely oblivious of surroundings or of the presence of parents until the terror has subsided, that the end of the crisis is generally marked by the emission of clear urine and a falling-off to sleep, and that on waking the child preserves no recollection of the horror experienced. There is no stupidity or intellectual torpor such as characterises the post-epileptic state, nor is there any convulsion or biting of the tongue. The attack is also different from somnambulism and from the nightmare following an alcoholic debauch. After passing in review the exciting causes which may provoke an attack, such as gastro-intestinal irritation from ill-digested food, or worms, teething, and infectious fevers (e.g., pneumonia and typhoid fever), Dr. Beyrand shows that the habit in France of allowing the child to sip small quantities of wine along with

the parents during the evening meal is the most fruitful cause which provokes such attacks. Lead-poisoning from toys made of caoutchouc and pottery, leaden soldiers, and the like is pointed out as a cause of night-terrors, and belladonna and aconite injudiciously administered to children suffering from whooping-cough are said to have a similarly ill effect. Children who have been frightened by nurses with tales of ghosts, dark prisons, and other terrifying things are specially liable to suffer from night-terrors. Investigations into the family history of the child reveal that in most cases the commonest factor is an alcoholic or other neurotic habit or taint in the father or mother, to which can be traced the morbid nervous condition which expresses itself in the child as night-terrors. Attacks mainly occur during the third hour of sleep, and treatment should be directed to remove all exciting causes whether internal (alimentary) or external. The bromides may be given as cerebral sedatives, and the last meal of the day should be very light and non-irritating. Education of the child should be so regulated as to abolish and suppress all morbid fears and tales provoking fear.

"TO INAUGURATE THE CENTURY."

IN the public health section of our Annus Medicus we referred last week to the probability that the year 1901 would be written down in history as a red-letter year in so far as the prevention of tuberculosis was concerned, and we drew attention more particularly to the erection of sanatoria. It is now announced that the town council of Portsmouth have honoured themselves by initiating the movement. They have determined to inaugurate the century by promoting a fund for establishing a sanatorium for phthisical patients on the southern slopes of Portsdown Hill. Portsmouth is by no means alone in its determination to erect a sanatorium, but, as far as we are aware, no other sanitary authority has made the birth of the twentieth century a basis for the movement. To some, indeed, the milestones set, partly by nature, partly by man, upon the path of time make no appeal. The passing of a century to them is no more than the passing of a year. The prolongation of the sojourn of man upon this planet concerns them not at all. Why trouble ourselves, they say in effect, with the relief of suffering, with increasing the average duration of life, with the limitation of infection? What matter?

> "You know how little while we have to stay,
> And, once departed, may return no more."

Why, therefore, let the morrow disturb us?

> "To-morrow? Why, to-morrow I may be
> Myself with yesterday's Sev'n Thousand Years."

But those who are satisfied with such philosophy are not likely to peruse these lines, and their views need occupy us no further. Life is a riddle which we possess an irresistible desire to guess. The more thinking and responsible portion of those who for a time occupy the surface of this troublous planet feel impelled to promote the growth of scientific truth, so that even if no solution of the mystery of life follow they may at least do what they conceive to be their duty by their contemporaries and also by their posterity. It is for this reason that we ask whether some concerted movement for the good and comfort of the community by the promotion of scientific research may not fittingly mark the progress of the centuries. We should be glad to see the sanitary authorities throughout the country awaken to the occasion in emulation of the Portsmouth Town Council. The idea of erecting sanatoria for the reception and treatment of consumptive patients may not in all cases commend itself, but the opportunities open to public bodies for doing sanitary good are numerous. Those who pollute our streams by their sewage might be persuaded to put an end to such pollution; the communities possessing no isolation hospital might erect one, cities where animals are slaughtered in private slaughter-houses without proper inspection might provide their inhabitants with a proper abattoir and facilities for testing their animal food. And if none of these subjects appear sufficiently sentimental for an occasion which none of us who either read or write these pages will see again, let attention be turned to the housing of the poor. Upon that platform the theologian, the philanthropist, and the sanitarian can meet to their mutual gratification. But whatever scheme may be adopted by public bodies, the opportunity afforded by the dawning century of marking a stage of human progress in some definite manner should not be lost.

AMBULANCE CLASSES AND THE LONDON SCHOOL BOARD.

AMONGST the subjects recently introduced by the School Board for London into their scheme of instruction in their evening continuation schools are those of ambulance or first aid to the injured and home nursing. In the first instance an arrangement was entered into with the St. John Ambulance Association for instruction in these subjects. The School Board for London, however, wished to have the matter entirely under their own control. They now appoint their own lecturers and examiners, their object being to obtain uniformity in the instruction given and control of the standard of pass. They have their own syllabus, compiled from those of the St. John Ambulance Association, the St. Andrews Ambulance Association, and the Aberdeen Ambulance Association, and they grant their own certificate of proficiency. The course of instruction consists of 12 lectures given alternately by a medical man appointed by the London School Board and by a school board teacher who holds the board's certificate for teachers—a certificate which is of higher grade and for which there is a more complete syllabus of instruction and a longer course. With regard to the attendances the reports show an increasing number. In 1898–1899 the attendances were for ambulance, 6800; home nursing, 2425. In 1899–1900—ambulance, 9393; home nursing, 3252. The arrangement and general supervision of the scheme have been entrusted by the board to Dr. R. J. Collie, to whom the merit of its construction is greatly due. Whether ambulance classes come under the head of elementary education is, we think, an open question, and we should like to know in what the certificated teacher gives instruction.

CUNNINGHAM *v.* THE "DAILY EXPRESS."

WE must offer our hearty congratulations to the *Daily Express* on its success in the libel action brought against it by John Bernard Cunningham. The publicity given to the trial by the daily press renders it unnecessary for us to say more than that the alleged libels imputed to the plaintiff were, according to the construction which he placed upon them, that he was putting before the public a sham and pretended cure for consumption, and that he was a quack and a charlatan, and that the jury, after hearing the plaintiff's case as set forth by himself and his witnesses aided by the skilful advocacy of Mr. Lawson Walton, Q.C., stopped the trial in the middle of the defendants' evidence and declared themselves agreed that their verdict should be for the defendants. Satisfactory as the abrupt ending of such a law-suit may be, we may be excused for regretting that the defendants' case was not completed in order that the public might be more fully warned against the kind of person who endeavours to cozen them with sham cures for disease. It is better that a lie should be contradicted and exposed than that it should be merely disbelieved. For example, Cunningham's counsel said, presumably on his instructions, that the "Medical Defence Association" had inspected the diploma of the

plaintiff and had thereupon not persisted in certain objections which had been taken to Cunningham's proceedings. Dr. A. G. Bateman, general secretary to the Medical Defence Union, has since written a letter setting out what took place between the plaintiff and his society, a letter which, needless to say, shows that this statement put in the mouth of the plaintiff's counsel was without foundation. Dr. Bateman was in court ready to give evidence had not the stopping of the case rendered his testimony, and that of any other witnesses for the defendants, unnecessary. At the same time we admit that the early stopping of a case is a more complete and emphatic vindication of the defendants' conduct than that which results after both sides have been fully heard and after the judge has summed up, while newspapers which by outspoken comment on matters of public interest run the risk of libel actions do not wish to find themselves in jeopardy longer than is absolutely necessary. For the risk run by newspapers in dealing even with the most obvious charlatans is a real one. A few words may be written on such an occasion which cannot be wholly justified and a verdict for damages and costs may have to be faced, although the plaintiff criticised may have been a person deserving the strongest censure and exposure, and although it is clear that the action of the newspaper has been taken from no other motive than to protect and to warn the public. *Crede expertis.*

THE RESIGNATION OF MR. TRIMMER.

AT the December meeting of the Council of the Royal College of Surgeons of England it was announced that Mr. Trimmer had intimated his intention of resigning the post of secretary to the College in March next when he will have completed 42 years of service. Mr. Trimmer went to the College from the War Office as assistant secretary under his friend the late Mr. Edmund Belfour in the year 1859. His powers of organisation soon proved of great use to the College in the drafting of the Regulations and the arrangement of the examination for the Licence in dental surgery which came into existence through the charter granted in that year; and, indeed, from the time he succeeded to the post of secretary in 1865 his mastery of the intricacies of the various charters and by-laws has been of immense value to the College. Those who remember the negotiations for the proposed conjoint examination scheme between the universities and the corporations will not need to be reminded of the heavy work thrown upon Mr. Trimmer, and the resource which he brought to bear on the many discussions involved by the delicate questions raised was notable. He was also largely responsible for the details of the present scheme of conjoint examinations between the College and the Royal College of Physicians of London. Mr. Trimmer has well earned his retirement, and we trust that he may have many years of life and health before him to enjoy it. Certainly the College has been fortunate in having had the advantage of his services for so many years, and whilst the Council will naturally regret to lose such an old and faithful official, they will none the less feel confident that his successor, Mr. Cowell, who has acted as assistant secretary for the past 12 years, will carry on the duties of the office with energy and ability. We understand that the Council has voted a liberal retiring pension to Mr. Trimmer.

THE BRITISH CONGRESS ON TUBERCULOSIS.

WE have received the official programme of the British Congress on Tuberculosis, which will be opened in person by H.R.H. the Prince of Wales in the Queen's Hall, London, at three o'clock in the afternoon of July 22nd, 1901. The Congress will be held from Monday, July 22nd, to Friday, July 26th. Every British colony and dependency is invited to participate by sending delegates; while the Governments of countries in Europe, Asia, and America are invited to send representative men of science, and others, who will be the distinguished guests of the Congress. Papers will be read, and clinical and pathological demonstrations will be given, detailing medical and sanitary experience in the treatment and prevention of tuberculosis throughout the world; while the museum, which is to be a special feature of the Congress, will contain pathological and bacteriological collections, charts, models, and other exhibits derived from similarly widespread sources. Authorities in this and other countries will be invited to supply documents bearing upon the historical, geographical, and statistical aspects of the subject; while as a result of the papers and discussions, practical resolutions will be formulated which will serve to indicate the public and private measures which are best adapted for the suppression of tuberculosis. The work will be divided into four sections as follows:—Section I., State and Municipal: President, Right Hon. Sir Herbert Maxwell, Bart., M.P. Section II., Medical, including Climatology and Sanatoria: President, Sir R. Douglas Powell, Bart., M.D. Section III., Pathology, including Bacteriology: President, Professor Sims Woodhead, M.D. Section IV., Veterinary (Tuberculosis in Animals): President, Sir George Brown, C.B. The chairman of the committee having charge of the Museum of Pathology, Bacteriology, and Public Health, is Professor Sims Woodhead. The secretary to this committee is Dr. W. Jobson Horne, 27, New Cavendish-street, Harley-street, W., to whom all correspondence relative to the museum should be addressed.

THE NEGLECT OF THE AGED.

AN inquest held recently at Salisbury brought to light a state of affairs which, shocking as it seemed to the coroner's jury (who censured those responsible) is by no means without parallel. An elderly woman, 79 years of age, living in a house with her daughter, another woman apparently a lodger, and her husband, who though deaf was not stated to be infirm, had died after being ill for four years and bed-ridden for 13 months. Mr. H. L. E. Wilks, who had attended her some months before, had been called in again two days before her death and had found conditions which caused him to decline to certify when asked to do so, while his evidence, given after making a post-mortem examination, showed that the deceased died in circumstances of filth, starvation, and neglect which fully justified the indignant comments of the jury, although they did not think it necessary to return a verdict of manslaughter. We further note that the foreman, with the knowledge of the persons whose conduct is under inquiry that we sometimes observe in coroners' juries, remarked that the deceased's husband could have afforded a private nurse, while there was also a district nurse at hand whose residence was known to the daughter. General practitioners whose work lies among the poor, and particularly those who carry on their profession in remote country districts, will probably be able to recall similar instances of the callousness exhibited towards the aged and infirm, not only by their younger relatives, but by the husband or wife as the case may be. These seem to resent the prolonged existence of one who is a burden and a useless expense, and if they are deterred by fear of the law from taking active measures to accelerate the end, at any rate they do nothing whatever to avert or postpone it. Such conduct towards the aged is we believe customary in some savage tribes, while the lower animals recognise no duty towards the parent or the mate which has grown weaker than its compeers. In the unhappy family at Salisbury there was, no doubt, a resentful unwillingness to incur unprofitable trouble and expense, not tempered by what we term

natural affection—the sentiment among men towards their blood relations which is rather the product of civilisation and Christianity than of nature.

"ACUTE IDIOPATHIC ŒDEMA OF THE EYELIDS."

AT the meeting of the Société Médicale des Hôpitaux of Paris on Nov. 30th, 1899, Dr. Galliard read a paper on a curious and little recognised affection, to which he gave provisionally the title of "acute idiopathic œdema of the eyelids." In 1888 Riehl recorded the following case in the *Wiener Medicinische Presse*, No. 11, p. 353. A man, aged 51 years, who had suffered from supra-orbital neuralgia and rheumatism after the death of his wife, had in 1874, for the first time, œdema of the left eyelids. Several relapses followed. In 1878 the right eyelids were affected. From that time attacks on one or other side, or on both sides, were frequent. Then his lips were affected. In 1885 he had pharyngo-laryngeal œdema and threatening asphyxia. Attacks of cutaneous œdema occurred every 10 or 12 days. There were no general symptoms. In 12 years Dr. Galliard has seen only three cases of "acute idiopathic œdema of the eyelids." The first occurred in a woman, aged 20 years, who had unilateral swelling of the eyelids with slight redness. The second case was observed in a girl, aged four and a half years. One morning without apparent cause she showed unilateral œdema of the eyelids. 24 hours later it had disappeared. There was neither cardiac nor renal disease, nor alteration in the eye—not even conjunctival congestion. Ten similar attacks took place in the next two years. After a slightly disturbed night the eyelids on one side, right or left, were enormously swollen. There was neither pain, redness, heat, nor pruritus. At the close of the day the œdema had diminished, and in from 24 to 36 hours it had disappeared. It was never bilateral or accompanied by albuminuria. The temperature was normal. The child enjoyed good health and never had urticaria. The father had arthritic tendencies and suffered frequently from hay-asthma. The third patient was a girl, aged three years, who sometimes suffered from gastro-intestinal troubles, which were never complicated with urticaria. One afternoon after walking she complained of pain in the knee. At 6 P.M. there was hydrarthrosis of the right knee with slight pain and heat. There was no pyrexia. Salicylate of soda and antipyrin were given. On the following day the swelling had diminished and on the third day it had disappeared. As the tongue was furred and as the child had lost appetite an aperient was prescribed on the fourth day. On the fifth day the general condition was good, but in the afternoon a papular erythema of the lower limbs appeared. The left limb was most affected; on the leg the papules were confluent and formed a patch which ceased abruptly at the level of the malleoli. On the dorsum of the foot was another patch separated from the upper patch by healthy skin. The leg and foot were swollen. The temperature was 102·4° F. and the child was restless. On the sixth day there was marked improvement; the temperature was normal, the swelling of the limbs had disappeared, and the red tint of the spots was replaced by a violaceous one. On the seventh day the eyelids were enormously swollen. The right eye was completely hidden, the left not quite. The œdema extended to the lower part of the forehead and root of the nose. There was no redness. The child was unrecognisable. There was neither conjunctival congestion, pain, pruritus, pyrexia, nor albuminuria. Dr. Galliard diagnosed benign œdema of rheumatic origin. On the eighth day the œdema was diminished; the right eye could be opened and the left eyelids were normal. There were some purpuric spots on the buttocks and thighs. On the ninth day the œdema had disappeared. This case differs from the preceding ones in that the œdema was not an isolated phenomenon but one of a series of "rheumatic" phenomena. The pathology of certain forms of acute œdema is very obscure. They have been ascribed to rheumatism, gout, cold, and hysteria. Until more precise knowledge is attained Dr. Galliard suggests that the œdema in his cases should be described as idiopathic. Thus, "acute idiopathic œdema of the eyelids" is a recurrent affection without prodromata, which is observed on awaking in the morning. It predominates on one side or is unilateral. From the beginning it attains such enormous proportions that it cannot be confounded with cardiac or renal affections. It is soft and devoid of redness. It is not accompanied by alterations in the eye, pruritus, or pyrexia. It lasts from 24 to 36 hours. It may be preceded, accompanied, or followed by circumscribed œdema of the cheeks, lips, limbs, genital organs, or mucous membranes. It occurs in rheumatic, arthritic, and neurotic families.

THE PROBLEM OF SEWAGE DISPOSAL.

IT must be admitted that when distinct promise is given that the enormous volume of sewage discharged from the sewers of London can be satisfactorily dealt with bacterially, then other cities and towns may confidently hope that the same process is adapted to their needs. The interesting series of practical experiments conducted during the past two years on behalf of the London County Council by Dr. F. Clowes and Dr. A. C. Houston promise to culminate in success on a large scale, at least this is the conclusion to be derived from their latest report. As may be imagined, difficulties of all kinds have been encountered, but, as in all problems, the difficulties have been exceedingly instructive, and due advantage has been taken thereof, with the result that it is now considered advisable to adopt the bacterial method of treatment of London sewage in place of chemical treatment. It is further maintained that under the conditions existing in the lower river and at the outfall this system of treatment would furnish a more satisfactory result. This is substantially the remarkable conclusion of the chemist and bacteriologist of the London County Council respectively after two years' practical study of the question. We crystallise this conclusion from the results which appear in the third report on the subject, which has just been published, relating to the experimental intermittent treatment of London crude sewage at the coke-beds at the Barking and Crossness outfalls. The first and second reports were dealt with in THE LANCET of Oct. 14th, 1899, p. 1024, and March 3rd, 1900, p. 649, respectively. In the former number we dealt with the preliminary experiments at some length in a leading article, and in the concluding paragraph of that article we wrote: "We doubt whether a more promising solution than is suggested in the conclusions of this report of the great and vexatious problem of the rational disposal of the sewage of London has yet been forthcoming." Our confidence in this mode of bringing the problem into solution is now considerably increased. The process is reduced to simplicity itself, one of the chief requirements being that the crude sewage be first allowed to deposit its sediment prior to its discharge upon the coke-bed, where it is dealt with intermittently. The experiments which have been conducted on these lines renders the conclusion reasonable "that the experimental treatment of the sewage by rough screening followed by rapid sedimentation without the previous introduction of chemicals might now be attempted on a large scale, and that by this means an effluent of much greater purity than that at present discharged might be sent into the river." It is doubtful, however, whether the effluent, although chemically pure, is in

actuality above bacteriological suspicion of danger. But, as Dr. Houston remarks, a process which leads to the solution of the great mass of suspended matters in the raw sewage, which effects a striking reduction in the amount of putrescible matters, which avoids the use of chemicals and the accumulation of offensive sludge, which yields an apparently non-putrescible effluent, and which is at the same time practicable, is one which presents such singular advantages over chemical treatment, that it would be idle to deny its value or to attempt to minimise its usefulness simply because it falls short of a standard of absolute perfection. This is perhaps a rosy view, but these conclusions are based, in our opinion, on one of the best experimental investigations that has ever been carried out. We strongly recommend a careful perusal and study of this exceedingly interesting and valuable report to all concerned in this great question of sewage disposal.

THE PRINCESS OF WALES'S APPEAL.

PERHAPS no one can better appreciate the sore need of the families of the poor when the bread-winner is for some reason or other unable to render the aid which is expected of him than the medical man, and it is with feelings of the greatest sympathy that we refer to the appeal which the Princess of Wales, as President of the Soldiers' and Sailors' Families Association, has just issued. In a brief account of the work which the association is endeavouring to carry out Her Royal Highness states that since the commencement of the war over £510,000 have been directly entrusted to the care of the association, supplemented by £190,000 subscribed for wives and families to the Mansion House Fund, and £50,000 received from the Lord Mayor of London's "Discretionary" Fund. The whole of this sum, amounting to £750,000, distributed through the voluntary services of 11,000 ladies and gentlemen, members of the association, is now nearly expended. The last returns show that over 80,000 families have been relieved, but the number of cases do not diminish to the extent which might be expected owing to the fact that local funds have become exhausted and have transferred their cases to the association. At the present time not less than £50,000 per month are being given in relief. The aim of the association has been to maintain the families in the same position as they were when their supporters were at home. Assistance has also been given to aged fathers and mothers who relied upon their sons for support previously to rejoining the colours. "Without further funds," says Her Royal Highness, "these homes must be broken up and all that we have been doing for the last 12 months will be undone." The Lord Mayor of London has consented to receive subscriptions sent to the Mansion House for this object, and the Princess of Wales invites the coöperation of lords lieutenant of counties, and of lord mayors, provosts, and mayors throughout the kingdom to help her in the same way. Subscriptions will also be received by the local branches in each county and by the treasurer, Colonel James Gildea, C.B., at 23, Queen Anne's-gate, Westminster, S.W. Surely the appeal of the Princess will not be in vain.

WE announce with great regret the death of Dr. John Baptiste Potter, obstetric physician to the Westminster Hospital, which occurred on Sunday last, Dec. 30th, 1900. We shall publish shortly a fuller obituary notice.

LORD ROBERTS, who arrived at Cowes on Wednesday morning last, was graciously received on the same day at Osborne by Her Majesty the Queen. The whole nation is gratified by learning that the gallant Field Marshal has been created an earl and has also been appointed a Knight of the Order of the Garter.

"CLUCKS" AND "CLICKS."

BY W. AINSLIE HOLLIS, M.A., M.D. CANTAB., F.R.C.P. LOND.

AS the days of Boer supremacy in South Africa are numbered, it may be thought not uninteresting to consider, before it is too late, another residual product of the veldt whose days are also numbered so soon as English board schools are established in the Transvaal Colony and the Orange River Colony. I allude to the lingual "click" of Kaffraria and the surrounding districts. There are evidences, to which I shall hereafter briefly refer, that this suctional note was at one time widely distributed in speech among the nations of mankind. My present purpose, however, is to consider the physiology of an expressive sound—or, more correctly, series of sounds, for there are several modifications of the "click" still extant—and to draw attention to its close relationship to similar notes still in use as calls among some of the lower animals.

In general terms the "click" may be said to be produced by first pressing the tip, edges, and a part of the dorsum of the tongue against the hard palate, exhausting the air from the cavity so formed, and then, mainly by the action of the muscles attached to the styloid process and the hyoid bone, forcibly withdrawing the tongue from the position it has assumed. This operation allows the air to re-enter the partial vacuum and a "click" is the result. As regards the "clicks" at present in use amongst the Ngoni (Zulu), Xosa-Kaffir, and other of the Bantu tribes, European writers, such as Torrend, Elmslie, and Roberts, agree in dividing them into three varieties—namely, the dental, the palatal, and the lateral. The two first are chiefly distinguishable from each other by a reference to the position of the tongue-tip when the sound is made. In the former case the tip is placed close to the roots of the upper incisors; in the second case the tip is placed considerably farther back. The lateral "click"—which, by the bye, is still to be heard from the mouths of English drivers—is really a modification of the second form of note wherein the edge of the tongue is first raised for the re-admission of air instead of the tip. So we shall find that the Zulu "clicks" may be arranged physiologically under two headings—the anterior palatal and the posterior palatal, according to the location of the tongue-tip whilst the sound is produced.

If we now pass to the other side of the world, to the home of the Dakota Indians, we learn through the voluminous work of the Ethnological Section of the United States Survey of the Rocky Mountains that these tribes also possess, or until recently possessed, a language in which no fewer than four "clicks" were recognised. Phonetically these "clicks" differ from those of South Africa, in so far as each "click" represents a definite out-breathed consonantal sound modified by the suctional manner of its production. Yet, physiologically, the method of uttering these notes is very similar; and from what the writers of the dictionary state we may assume that the *p* and *t* "clicks" of Dakota were anterior palatal, and that the *c* and *k* "clicks" were posterior palatal. In other words, we find in each hemisphere of the world tribes of men who have retained in their speech these remarkable suctional notes, despite the fact that the rest of their language was composed of out-breathed syllables.

Man, so far as I know, is the only mammal which uses a suctional note. Curiously enough, certain lizards of the South African veldt, the so-called "clucking sand lizards" do, as their name suggests, utter a "cluck," which in their case is probably a sex-call. At home, however, in every farmyard there are endless opportunities of observing an avian "cluck." The "clocking" of a broody hen—as old John Ray, the seventeenth-century naturalist, called the sound whereby the domestic fowl summons its family to a feast—is familiar to us all. Certain peculiarities touching the nature of this avian cluck have led me to conjecture that it and the human "click" are both descendants of a common ancestral "cluck." The peculiarities in question group themselves for consideration under various headings—namely, the kind of sound, its structural cause, and finally its significance as a call. If we compare the "cluck" in this manner with the human "click" the striking affinities displayed in each instance will, I believe, justify the above

surmise. Unfortunately I have been as yet unable to investigate the "cluck" of the lizard to which I have referred. I have, in effect, restricted this part of the inquiry to the hen's "cluck."

To begin with the phonetic nature of the note. If a clucking hen surrounded by her brood of chickens be quietly observed three facts may be noted. 1. The sound produced is a dissyllable, a "culuck" and not a "cluck." This observation, as we shall learn subsequently, is of interest. 2. The beak is closed when the sound is made. 3. The hyoid bone with the larynx ascends at the commencement of the note to sink again immediately afterwards. As regards the structures which bring about these results a few words may now be said, and in so doing I must apologise for describing the hyoglossal apparatus of the common fowl. From an observation published in one of the most recent text-books on birds it seems, however, that there is a very general idea abroad that the tongue has nothing to do with the utterance of all notes emitted by birds, with one possible exception, the sounds taught to parrots. Against this sweeping statement I must protest, and I feel that I can best do so by describing briefly the beautiful mechanism in the fowl's mouth and throat by which the cluck is undoubtedly produced. The somewhat V-shaped os hyoides has its body prolonged forwards in the form of a spur, which is embedded in the root of the tongue. At its distal extremity this spur ends in a hinge-joint about half an inch from the tongue's tip. A further spicule of cartilage extending mesially forwards to within an eighth of an inch of the tip and presumably bearing the horny covering of the under-surface of the fore-tongue, completes the joint. The joint is apparently furnished completely with bursæ, synovial cavity, and so on. By two cylindrical muscles arising from the greater cornua and terminating in two long tendons, one inserted on either side of the under-surface of the fore-tongue, this part of the organ can be bent downwards independently of the rest of the tongue. When the hyoid apparatus is moved upwards the tongue, which usually rests in a cavity between the rami of the lower jaw, is also raised, pressing against the cleft palate. This movement practically closes the resonant oral cavity behind. When the hyoid bone is subsequently lowered the back part of the tongue must immediately descend with it, and in so doing it unseals a part of the palate. Owing, however, to the joint in the mid-tongue, the fore portion can for awhile still retain its position in proximity to the palate until the further descent of the hyoid occasions its displacement also. And so it is apparently brought about that the chicken's tongue shall leave the roof of the mouth in two detachments and that their removal shall coincide with the descent of the hyoid bone and the emission of the dissyllabic "culuck" of a "broody hen."

When the precursors of the Indo-Germanic nations decided to give up the primitive "click" for out-breathed equivalents that note had doubtless already been separated into the two great "click" families, the anterior palatal and the posterior palatal. This sub-division, as we may conjecture from the hen's anatomy, was probably in the first instance the direct result of structural necessities. When, after the lapse of geological ages, organic difficulties had been overcome and the mobile human tongue had devised fresh variations of the suctional note, these varieties, with their out-breathed equivalents, still fell naturally under two headings, largely dependent upon the distance of the tongue-tip from the upper incisors. Accordingly we recognise in the English "cluck," "click," "clock" and the German *glucken* an out-breathed equivalent of an ancient front "click"; whilst such words as the English "crack," the German *krachen*, and the French *crique*, *gripper*, hide the descendants of a post-palatal "click." An investigation of the modern "clicks" and their Indo-Germanic representatives strengthens this conjecture, as I shall briefly show. It will be noticed also that this inquiry indirectly confirms the hypothesis that the avian "cluck" and the human "click" have had a common origin.

Whether the sand lizards "cluck" whilst they excavate their burrows is more than I can assert. Every farm-labourer, however, will admit a close association between clucking and scratching the soil in the case of the domestic fowl. In the language of Dakota (of which, by the way, a dictionary has been compiled filling a thick quarto volume) precisely six words begin with a *c* "click," a few more begin with the *k* "click." Amongst that small number of words, a considerable percentage of which are conjunctions or other parts of speech, we nevertheless find two verbs, *ca*, *ke*, signifying "to dig," one, *kéga*, "to scrape," and one derivative again, *kes-ké-za*, "trodden down, smooth"; the final word containing two *k* "clicks." This close association between the posterior "click" and scraping the soil is not confined to a nation of Red Indians, the Old English *cratch*, the Old Dutch *kratsen*, the German *kratzen* ("to scratch"), the French *griffer*, the German *graben*, and the English to "grub," or dig, probably conceal in the initial *cr*, *kr*. and *gr*, the out-breathed equivalent of the suctional note. If we turn to Zululand this relationship may seem apparently absent. It is traceable, however, although the mental connexion between the note produced and its significance is not the same in the two cases. Whilst in Dakota the operation of scraping the soil appears to have been uppermost in the mind of the primitive savage whenever he uttered the hinder "click," the ancient Xosa-Kaffir must have looked rather at the mechanism for producing this result—at the hooks and claws arming the limbs of men and animals when they harried the surface of the ground. To his simple mind the *Aasvogel* of the veldt (Zulu *inqe*,[1] English "griffin," French *griffon*), was the embodiment of hooks and eyes, and its name was consequently the casket for one "click" or more. (Some tribes, I understand, introduce two "clicks" into this word.) Here again the Indo-Germanic group of tongues assist, for we find the Old English *crycc*, the English "crutch," "crook," and the French *croc*, represented in the Zulu *ibaxa*, a word containing a lateral "click."

I must not, however, occupy these pages with a philological disquisition. I shall conclude, therefore, with a few examples of the anterior "click" and its English equivalents. Such words as "clip" (Zulu *ncotyoba*), "clasp" (Zulu *peca*), "cloudless" (Zulu *cvebile*), to be "clear" (Zulu *cansa*), to "close" the eyes, the mouth, the door respectively (Zulu *cima*, *cuta*, *vingca*), all have an anterior click; whilst the Dakota *tin-za*, "stiff" (as mud), *po*, "fog," "mist," have representatives in English "clay" and "cloud," a further support to the argument that the Indo-Germanic *cl* is the out-breathed equivalent of a front "click."

REFLECTIONS ON THERAPEUTICS.

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I.

THE VIS MEDICATRIX NATURÆ; THE LIMITATIONS OF THERAPEUTICS.

ONE of the first lessons the young physician has to learn—too many never learn it at all—is the limitation set by Nature upon his therapeutic measures. He has to grasp this primal fact—that she herself is the great physician and that compared with the vis medicatrix naturæ his powers are feeble and insignificant. The potency of the vis medicatrix, the importance of relying upon it chiefly, allowing it full scope, and not for ever, by fussy interference, impeding its beneficent action, was brought home to me early in my medical career. It was forced upon me by the following analogical argument which, though open to criticism, as argument by analogy is bound to be, serves the purpose I have in view. The argument is briefly this: we may regard disease as a natural variation, as a variation from the normal, and just as all natural variations tend to revert to the normal, so also does disease. This brings the vis medicatrix into line with the phenomena of reversion.

Now there are two kinds of reversion. There is, first, reversion as commonly understood, or developmental reversion, that, namely, in which the organism does not develop on the ordinary lines, and of this variety I have nothing to say here. Secondly, there is that form of reversion in which the organism, having partly or completely developed, retrogresses and thereby displays lost characters belonging to past ancestors; it is to this second form that I wish to direct attention in this place. One of the most striking instances of it is afforded by acromegaly, most of the

[1] The Zulu "clicks" are usually rendered by the letters *c*, *q*, and *x*; these letters are merely symbols, and the "clicks" have no sonorous connexion with them. The *q* represents the posterior palatal "click."

characters of which, as I have shown elsewhere,[1] are anthropoidal—i.e., belong to the man-like apes. As another instance, and one more useful for my purpose than acromegaly, let us take the case of a cultivated plant allowed to grow wild—the cabbage, for example. Under such conditions it tends to revert to the condition of its wild congener. In short, when placed under primitive conditions it tends to revert to a more primitive and stable state. Similarly, in regard to disease: disease is a variation from the normal stable state and the organism shows a tendency to revert to that normal stable state when placed under normal, simple conditions of warmth, fresh air, and so forth. In each case the pendulum which has swung from the position of equilibrium tends to settle back in it, this backward swing in the case of disease being the work of the vis medicatrix.

The vis medicatrix a highly complex process.—But though it is easy enough to refer the vis medicatrix to the principle of reversion, when we come to examine carefully into the process we find that it is not by any means a simple one, but, on the contrary, inconceivably complex, a process in which the organism puts forth supreme efforts, bringing into play numerous mechanisms which have been laboriously evolved through the ages and in the evolution of which as much care has been bestowed, if I may speak teleologically, as in the evolution of the many other physiological attributes belonging to the organism—circulatory, respiratory, digestive, or what not. In other words, Nature is infinitely wiser in medicine and surgery (but especially in the former) than we are wont to conceive; she has a complete system of her own, and compared with her share in the healing process ours is insignificant in the extreme. If once we get thoroughly imbued with this idea, and if we realise how crude and impotent are even our most delicate and successful methods compared with the refinement and efficiency of hers, we shall be the more inclined to trust to her wonderful healing power, always seeking to give it the fullest possible scope, and scrupulously abstaining from lightly employing any means of our own, lest unwittingly we interfere with her work and only hinder where we hoped to help.

The surgeon is much less likely to err in this respect than the physician. He removes a piece of dead bone, pulls out a bad tooth, opens an abscess, and in all this he is acting in perfect conformity with Nature's own methods, only doing quickly what she must perforce do slowly. But though in such cases the results are obvious and unmistakeable, how small and insignificant is the surgeon's share in them compared with Nature's! Take the case of a tooth extraction: great good may be done by this operation which is as direct and rapid as it is effective, and yet even in such a case, where all the credit for skill seems to belong to the surgeon and little or none to the organism, when we come to look deeper we find the actual facts to be far otherwise. The surgeon's share in the result begins and ends with the removal by gross mechanical means of the source of irritation. To Nature is assigned the far more difficult and momentous task of repairing the injury actually inflicted by the operator himself in his effort at relief, and did she fail in her part the patient would assuredly die, in spite of the removal of the irritant, the original cause of trouble. For the injury is a violent one; bone is riven, muscle, nerve, and connective tissue are rent, vessels are torn, blood is poured out in profusion—all is chaos and confusion; but under the magic of Nature's ceaseless working out of that chaos and confusion order is unerringly restored, and that with marvellous rapidity. Armies of cells are engaged in the work of repair, and silently, slowly, with an adaptation of means to end a thousand times more exquisite than the utmost refinement of skill on the part of the surgeon, whose wrench, however deft, is coarse and rough in the extreme compared with Nature's imperceptible methods, the shattered tissues are repaired and an architecture is built up again, infinitely more delicate and more highly elaborated than anything that human ingenuity could devise. And all this is done so unobtrusively, unfalteringly, and painlessly that we accept the ultimate result as a matter of course, giving little or no thought to the means by which it has been effected.

But if even in surgery the vis medicatrix plays so large a part, how much larger is that which it plays in medicine? Here in the vast majority of cases Nature effects a cure unaided, and even in those instances in which the physician does good his share in the healing process is but small. Take valvular disease of the heart, on the treatment of which we are wont to pride ourselves, and consider the accurate readjustments which take place as regards hypertrophy and dilatation of the cardiac chambers and changes in the valves themselves.[2] And so it is with every disease which the physician is called upon to treat—Nature puts into operation special methods of cure of her own. There is, so to speak, a great physician resident in each organism—a body physician, in fact—who treats every illness in a special way, and we must beware that we in no way interfere with that all-wise healer nor arrogantly seek to teach her a lesson; rather let us work with her on her own lines and with open mind humbly learn of her.

This is not the place to attempt a study of these Nature-methods of cure: I am merely seeking to emphasise an all-important principle, and it will be sufficient if I call to mind what we have recently learned concerning the antitoxins. And what does this amount to? What but that the organism actually manufactures and administers medicine to itself! And elsewhere[3] I have sought to show that, apart altogether from the antitoxins, the blood and tissues contain numerous substances which play the part of drugs—"drug-substances" I have termed them—and that many of those metabolic by-products which we have been in the habit of looking upon as useless, or actually poisonous, exert an important influence in modifying functions, having on the organism, in fact, similar effects to drugs artificially administered.

All the great physicians of our time have grasped the fact—and it is more than half the secret of their greatness—that Nature is the chief healer and that many diseases are recovered from quite as readily without treatment as with it. This is why it is generally found that as the physician grows older his methods become simpler, that he abandons one drug and method after another, and finally settles down into a plan of treatment which we can best characterise as based on the slightest possible interference with Nature. The young physician, crammed with theory and all the "ologies," not unnaturally attempts to put into practice the knowledge he has laboriously acquired, and but too often it is to the great detriment of his patients. Over-assiduous, or rather over-officious, with the officiousness of inexperienced zeal, he must for ever be intermeddling, seeking to force Nature's hand rather than, as he should, to supplement her work. He is the helmsman—so he believes—of a storm-driven ship in dangerous waters and his the task to steer clear of the rocks and shallows. Accordingly daily and even hourly he worries his poor patient with treatment of some kind. If the temperature goes up he must reduce it; there is diarrhœa, he must stop it; or profuse sweating, this also must be checked. Eventually the patient recovers, and the physician fondly deludes himself that the recovery is due to his skill, whereas in all probability it would have been as quick, perhaps quicker, if after a few simple directions the patient had been simply left to the ministrations of a good, sensible nurse. I could cite numerous cases in illustration of this truth. The one which I shall quote, though taken from the sphere of obstetrics, will answer my purpose as well as any.

When I was on a visit to the country some years ago a local practitioner called on me and asked if I could see a midwifery case with him. I explained that though I was not altogether ignorant of obstetrics as taught in the books, I was not a practical obstetrician; but as, in spite of my disclaimer, he continued urgent, I consented to go, on the understanding, however, that I should not interfere with his methods or accept any responsibility in the case. It was a first pregnancy, and we both agreed that the presentation was a breech. As the woman had been in labour some time he decided that a leg ought to be brought down. This view did not altogether commend itself to me, for there was no evidence of obstruction of any kind and careful measurements showed the pelvis to be normal, the soft parts appearing so also. However, my colleague was confident as to the correctness of the procedure, and as he had had a large experience I deferred to his judgment. After a good deal of effort one leg was got down, and shortly afterwards the second. Whereupon—and before I had time to hinder him—my companion seized both the legs and forcibly pulled

[1] The Scalpel, January and February, 1896.

[2] I have elsewhere shown that in obstruction of the cardiac orifices these latter and the passages leading up to them are so modified as to facilitate to the utmost degree possible the flow of blood through them. (THE LANCET, March 10th, 1894, p. 594).

[3] "The Craving for Stimulants," THE LANCET, Oct. 21st, 1899, p. 1091.

upon them, with the inevitable result that the arms got extended over the head, and, the latter likewise extending, the chin hitched against the pelvic brim and became fixed there. There was little difficulty in delivering the arms, but the head, in spite of powerful traction made upon the body, stuck firm. The practitioner thereupon proceeded to decapitate. I suggested, but without avail, that this might not be an altogether wise procedure, since it would deprive us of a means whereby traction could be made. After the operation had lasted about half an hour the operator was quite exhausted, large beads of perspiration standing on his forehead, and I relieved him, making occasional attempts to deliver the head by lifting the child's body on to the mother's abdomen, &c. (it was an occipito-anterior case) and eventually succeeding. When the head was delivered what was my dismay to find the practitioner pulling on the cord for all he was worth. Matters now assumed a serious aspect; hæmorrhage was profuse and the woman fell into a faint. Finally, however, to cut the matter short, we succeeded in getting the uterus to contract firmly and the patient ultimately made a perfect recovery. As I was bidding him good-bye that night that medical man said to me: "Well, what do you say to the case? I know; you think that if we had left the patient entirely alone everything would have gone on all right." I nodded, and we parted. Now, if ever there was an instance of meddlesome interference, and that of the worst sort, this was surely it. The wrongness of the methods adopted is self-evident, flagrant, all the accepted canons of obstetrics being deliberately set at nought; but I make so bold as to say that we physicians not infrequently subject our patients to treatment every whit as pernicious, though, because it does not comprise mechanical operations the effect of which can be accurately gauged, but works insidiously and imperceptibly, the harm done is not so readily appraised and brought home to us as in cases like that just cited. Let us boldly acknowledge the humbling truth that patients often get well, as in the above case, in spite of our treatment not because of it, and let me urge the younger members of our profession to endeavour to realise early in their career the limitations of therapeutics, and not to wait till many years of hazardous experiment and painful failure have burnt the fact into their consciousness.

These limitations are, as already hinted, far greater for the physician than for the surgeon. A surgeon in extensive practice saves hundreds of lives and relieves untold distress by his direct personal intervention, and every day sees the physician more dependent upon his aid. The latter finds himself continually made most painfully aware of his own impotence and his dependence upon Nature and the knife, and never more so than in cases, like perforated ulcer or intestinal obstruction, where, helpless himself to do more than indicate the nature of the trouble, he has to leave it to the surgeon's skill to rescue the patient from imminent death. I do not make these remarks to belittle the physician—the very difficulties which beset him make his efforts so much the more arduous, so much the more admirable—but solely that we may recognise our limitations and be under no delusions as to our powers.

It is in the treatment of acute disorders that we feel, or should feel, our limitations most. The wisest treatment for most of them can be best summed up in the dictum; "Nature and the nurse."

Take the case of acute croupous pneumonia. The fact that so many different treatments are employed in this disease at once casts doubt upon the utility of any of them, and I am persuaded that we seldom cut short the attack or save life by adopting any measures beyond careful nursing. The cure, if effected at all, is effected by the great physician within, who has resorted to special means for destroying the pneumococcus, for carrying off the inflammatory products, for eliminating the toxins (as exemplified by the "critical evacuations"), and the like. I do not say that we may not sometimes help the vis medicatrix naturæ—far from it—and we may one day discover an antitoxin for pneumonia as efficacious as that employed in diphtheria, or some drug which shall be as effective as mercury or iodide of potassium in syphilis; but at present we have discovered neither the one nor the other. I am even prepared to admit that we may occasionally—though I believe it is very occasionally—save life by judicious bleeding, by cardiac stimulants, by oxygen inhalations; ice to the chest also may do good, chloral may help in delirium, and so forth. Nevertheless, we shall do well in all simple, uncomplicated cases of pneumonia if we content ourselves by merely relieving distressing symptoms, and I would only sanction specific treatment in those exceptional cases where it seems very definitely to be called for. My advice in this, and indeed in most diseases, is, "When in doubt leave all to Nature, and do nothing." As an instance of harmful interference I may refer to a hospital patient of mine in whom the critical fall of temperature was marked by a profuse diarrhœa. This the house physician checked, with the result that the temperature rose again to fall when the astringent mixture was withheld.

The second acute disease which I will mention is rheumatic fever. This, like pneumonia, is a germ disease, and we are as powerless to kill the germ of the one as of the other. I am doubtful whether our treatment for this disease is any better now than it was fifty years ago, or for the matter of that a thousand years ago, and whether, with the exception of those rare cases of hyperpyrexia where life can occasionally be saved by the bath, we have learned to diminish the mortality from this dread scourge of the human race by even 1 per cent. It was thought when salicylate of soda was first employed in rheumatic fever that the malady was to be henceforth robbed of its worst terrors. But what after 20 years' experience do we find? That physicians are divided into two opposing camps—the one holding that it is right and proper to employ the drug; the other that the remedy is in itself baneful and actually aggravates the morbid processes though it relieves the pain. I think for the purposes of my argument that we may fairly set the one camp against the other and regard the battle as a drawn one, which places us in much the same position as regards the efficacy of our treatment of the disease as we were 20 years ago. And what was the verdict then, and before then? The statistics of Gull and Sutton show that the patients did as well on peppermint water as on anything else.

I next come to typhoid fever. With Sir William Jenner's discovery the physician leaped at once, in the matter of the treatment of this complaint, from darkness into light. Sir William Jenner taught us the necessity of careful dieting and rest. Add to this the reduction of hyperpyrexia by suitable means and an occasional dose of calomel perhaps, and there is little more to be done in nine cases out of ten. I find that my typhoid fever mortality well bears comparison with that of other physicians, and the guiding principle of my treatment is, after taking due precautions, to leave the cure to Nature. I have satisfied myself that no drug has a specific effect

Finally, I will instance acute nephritis. To read the books one would fancy that we had made enormous strides in the treatment of this affection within recent years. I can only speak as I see, and my experience is that we have little or no control over it. Nephritis is presumably due to some toxin or toxins passing through the kidneys and exciting them into inflammation. But whence their origin, and how to prevent their production? Practically all we can do is to diminish the work of the diseased organs by limiting diet and getting the skin and bowels to act. No drug has the slightest effect on the morbid process. We may sometimes pull a patient through an attack of uræmia by bleeding, but after all is said and done the treatment of acute nephritis essentially consists of "Nature and the nurse."

I end, then, as I began. Our powers are limited, nor can we hope by even the most enlightened therapeutic measures to usurp the great prerogative of healing which Nature has so jealously reserved to herself. She is sovereign, and all that we can aspire to is to be her ready henchmen, alert to follow the slightest leadings she vouchsafes us, as we pursue our unwearying search after wider and more intimate knowledge of the laws by which she works, and through which alone we can participate in her victories over disease and death.

ADDENBROOKE'S HOSPITAL, CAMBRIDGE.—Mr. A. Peckover, Lord Lieutenant of Cambridgeshire and president of this hospital, has contributed another £1000 to its funds to commemorate the beginning of the new century.

DUNDEE INFIRMARY.—Sir Wm. Ogilvy Dalgleish, of Errol Park, who on several previous occasions has been a liberal donor, has again manifested his interest in this institution by announcing his intention to bear the cost, estimated at between £500 and £600, of structural alterations, additions, and improvements to the eye ward.

THE LANCET

Analytical Commission

ON THE

SCOPE OF ARSENICAL CONTAMINATION TRACEABLE TO IMPURE SULPHURIC ACID.

THE recently discovered contamination of beer with arsenic has opened a vista of interesting speculation as to what articles of food or drugs or materials in common use are exposed to the same risk of contamination. Arsenic has been found in a goodly number of things hitherto in which its presence can hardly be regarded as accidental. Arsenic in wall-papers, for example, was used as a colouring agent, and the poisonous metal was found in green candle-shades, in green Christmas candles, in carpets, in book-bindings, and in a number of other articles in which its green was employed as a necessary part of the colouring agent. It soon appeared that arsenical pigments were the source of grave danger, and in response to repeated demands in THE LANCET and other journals arsenic was abandoned as a colouring agent, at least in those materials—such as wall-papers—which are likely to have an injurious effect upon health. Traces of arsenic have been from time to time reported in certain dyed fabrics. The arsenic present was attributed to its use in the preparation of the dyes and the quantity found was invariably small. This accidental occurrence of arsenic in dress and other materials, is, however, of interest in relation to the present panic which exists as to the widespread possibility of arsenic being present in beer. In beer, arsenic is obviously an accidental impurity. As is now well known, the arsenic had its origin in the impure oil of vitriol used for preparing the sugar for brewing purposes. It is remarkable that even in view of this origin the quantity of arsenic which found its way into beer should be, relatively speaking, large, especially when we consider that the sulphuric acid employed for the conversion of starch into glucose or cane sugar into invert sugar is used in a diluted state. One point, however, which appears to have escaped notice so far, is that arsenic forms a definite compound with sulphuric acid which is decomposed on the addition of water into white arsenic and sulphuric acid. We know of an instance where crystals of white arsenic had deposited in considerable quantity in a carboy which had contained commercial oil of vitriol and to which water had been added.

The extent to which oil of vitriol is used in the manufacturing processes of this country is enormous. It has indeed been said that our commercial prosperity could be accurately gauged by the amount of sulphuric acid consumed in this country. The use of sulphuric acid is associated with the production in many instances of articles of food, or at any rate of substances which are taken into the human economy, while materials of familiar daily use are at some step or other in touch with sulphuric acid in the course of their elaboration. Malt substitutes used for brewing beer are perhaps the best examples of substitutes used ultimately for human consumption which are prepared by the agency of sulphuric acid. The function of malt diastase is to convert the starch of the barley into malt sugar ready for fermentation. Sulphuric acid is more commonly employed for the same purpose—converting cheap starches or cane sugar into the fermentable invert sugar. It happens that sulphuric acid is liable to contain arsenic from the pyrites from which the acid is produced, and thus arsenic has found its way into substituted sugars and so into beer. Apparently, the fact that sulphuric acid is used in the production of so many articles of everyday use, including food and drugs, is not very generally recognised. Not many months ago arsenic was found in an effervescent powder largely composed of phosphate of soda, and the presence of the poison was traced to the use of sulphuric acid in the preparation of the phosphate crystals. It must be realised, however, that arsenic may occur in a number of materials in the preparation of which at some time or other sulphuric acid is concerned. Such are, for example, boric acid, oleic acid, soap, blacking, glycerine, citric acid, tartaric acid, salicylic acid, Glauber's salts, alum, effervescing salts, commercial manures, and so on. All these substances may at some time or other in the course of preparation be in contact with sulphuric acid, if, indeed, the final product does not actually contain the acid itself. It follows that arsenic may occur in tobacco, including cigars and cigarettes, jams, sweetmeats, lemonade, liqueurs, and many effervescing medicinal salts. Tobacco may contain arsenic from the glucose or glycerine used as a sweetening agent. Jams, sweetmeats, lemonade, and liqueurs may contain arsenic similarly from glucose possibly used in their manufacture. Most blacking is made with, and generally contains, free sulphuric acid. Citric acid and tartaric acid are made by decomposing the lime salts obtained from lemon-juice and grape-juice respectively with sulphuric acid. Boric acid and salicylic acid are obtained in a similar way. Glauber's salts, or sulphate of soda, a popular and cheap form of purgative, are obtained by acting upon common salt or nitre with sulphuric acid. Alum is produced by acting on clay with sulphuric acid. Oleic acid is prepared also from fats, frequently by the agency of sulphuric acid. In a similar way the presence, if any, of arsenic in soap might be traced to the sulphuric acid employed at some time or other in the course of manufacture. Commercial manures and fertilisers are almost invariably made by acting upon bone ash with sulphuric acid, thus rendering the phosphoric acid soluble and available for plant assimilation. These speculations have led to the present inquiry, and our Commissioners have during the past few weeks procured a number of articles of the above type and have submitted them to careful examination with a view to deciding whether or not arsenic occurred in them.

Tobacco, Cigars, and Cigarettes.

It is well known that glycerine or glucose is added to tobacco to give substance to the cut leaf. We examined a number of samples of sweetened tobacco but without getting the slightest indication of arsenic.

Blacking.

Arsenic was found in mere traces only in blacking. In any case the presence of arsenic in small amount would not matter much in blacking.

Sweetmeats.

A number of sweetmeats were examined but not a trace of arsenic could be found in them. Similarly several fruit jams when examined for arsenic gave negative results.

Lemonade.

No arsenic was found in several samples.

Liqueurs.

Sugar, of course, is a large constituent of liqueurs, and it might be glucose. Of two liqueurs examined we could not find a trace of arsenic in either sample.

"Lemon Crystals."

These are largely employed for the preparation of an acidulated beverage. We could find absolutely no arsenic in the samples examined. Arsenic in lemon crystals might exist in the sugar, tartaric acid, or citric acid.

Acids.

Specimens of citric acid and tartaric acid as ordinarily sold in the shops were likewise submitted to examination for arsenic, but in no case could the slightest trace of arsenic be found.

Soap and Oleic Acid.

Specimens of common bar soap were found to contain just a trace of arsenic, but no arsenic was found in oleic acid.

Effervescing Salts.

Specimens of natural Carlsbad salts were obtained, but in no instance was arsenic found in them. In two specimens of artificial Carlsbad salts arsenic was definitely discovered in one. It may be referred probably to the use of common sulphate of soda or Glauber's salts. In the samples of effervescing citrate of magnesia examined no arsenic was found.

Glauber's Salts.

Distinct evidence of arsenic was found in the crystals examined.

Artificial Manures.

Arsenic in very distinct quantity was invariably found in the specimens of artificial manure examined. This is hardly surprising since artificial manures commonly consist of the so-called superphosphate or soluble phosphate of lime made

by adding common oil of vitriol to bone ash. The question has been raised before as to the possibility of these fertilisers infecting plants or roots with the arsenic contained in them. We refer to this portion of the inquiry in particular because recently it has been freely stated that arsenic has been found in malt and hops and in beer brewed entirely from malt and hops. It is possible that the arsenic thus said to be found may have another origin, but the fact remains that plants do assimilate arsenic and that artificial manures are frequently arsenical, and a very wide field for inquiry in opened thereby. Some years ago Dr. Edmund Davy positively stated that arsenic as it exists in artificial manures is taken up by plants growing where these manures have been applied. He found cabbages and turnips taken from fields manured with superphosphate giving unmistakeable evidence of being arseniated. In some experiments conducted by the late Professor Tuson of the Royal Veterinary College the results were such as to confirm the assertion of Dr. Davy. Also a French investigator came to the same conclusion. Professor Tuson regarded these facts as having some important bearing, for as arsenic is well known to accumulate in soils, the effects after some time might possibly be that vegetables raised on those fields continuously so manured would ultimately be found to contain a proportion of arsenic able to exercise an injurious effect on the health of men and animals. It would be rash to assert that the arsenic which has been found recently in malt and hops owed its origin to this source, but the point is well worth attention at the present juncture that artificial manures are often rich in arsenic and that plants will easily assimilate this poison.

It will be seen that the foregoing results are reassuring. For in spite of the fact that the substances which have been examined are most probably at some time or other in the course of their preparation submitted to the action of sulphuric acid, yet arsenic as an accidental impurity was, on the whole, not found to be present even in infinitesimal quantity. If sulphuric acid had been employed at all in the instances quoted it was pure. Certain substances did contain arsenic, although in unimportant quantity. The inquiry teaches, however, that as these things are liable to contain this poisonous impurity a careful watch should be kept over them. This is provided for in the Food and Drugs Act, which might usefully be turned to the examination of such articles of food and drugs as are herein indicated. The danger involved by the use of sulphuric acid in the manufacture of all compounds intended for human consumption can be obviously avoided by the use of pure sulphuric acid, and some rigid precautions are necessary which shall ensure the supply of arsenic-free sulphuric acid for these special purposes.

We may add, finally, a word on the tests employed for the detection of arsenic. Considerable controversy has arisen as to the respective merits and demerits of the various tests for arsenic. In our experience the Gutzeit test is the most satisfactory for qualitative purposes, and to some extent for quantitative purposes also, so long as special care be taken to absorb any sulphuretted hydrogen that may be evolved. It has the advantage over the Reinsch test of giving indication of the presence of arsenic even if it be in the form of arseniate or arsenic acid. Reinsch's test is not at all satisfactory when the arsenic is present in the form of arseniate or arsenic acid unless steps be taken to reduce the arsenic to the arsenious state. Sulphur compounds again seriously interfere with the Reinsch test, sulphur depositing upon the slip of copper and complicating the result. All fallacy, however, may be got over by first oxidising the liquid, such as beer, which frequently contains sulphates with a little excess of bromine, driving off the bromine and then reducing the arsenic by the addition of some cuprous chloride solution. If arsenic is present the liquid will yield an immediate deposit on the copper on boiling after acidulating the liquid with hydrochloric acid. The Gutzeit test is best conducted in a six-ounce flask fitted with a small glass tower containing filter paper saturated with acetate of lead. Over the top of the glass tower is placed a piece of filter paper moistened with strong mercuric chloride solution and afterwards dried. The production of a yellow stain in intensity varying directly with the amount of arsenic present is a certain indication of arsenic when the precautions indicated are taken. Complex liquids like beer may be first evaporated with sulphuric acid and most of the charred material destroyed as in the Kjeldahl process for the estimation of nitrogen. The acid liquid may be filtered if necessary or it can be carried to a clear state by continued heating. It is then transferred to the flask in which the hydrogen is generated by the action of acid upon pure zinc. Arseniates and arsenic acid respond to this test most distinctly in a few minutes. By attaching a small glass tube to the tower the result may be confirmed by obtaining the black arsenical deposit as in the case of Marsh's test.

The Lancet Laboratory.

THE WAR IN SOUTH AFRICA.

THE news from South Africa is of a very mixed and not altogether satisfactory character. Nor is it likely that anything short of the capture of De Wet and the complete and final dispersal of his forces will make it otherwise. The occupation of all the stations along our lines of communication by strong bodies of infantry to guard against attack, while bodies of mounted troops are actively pursuing and dealing with the Boer forces may result in this. The most unsatisfactory part of the news at the moment is that the Boers are raiding Cape Colony. We must, presumably, make up our minds that the guerilla war will pursue its course for a time, giving rise to surprises, small disasters, and "regrettable" events. The wide extent of territory to be held and safeguarded against attack, as well as the distances over which the operations are spread, will probably require the presence of larger mounted forces than are at present in the field. The Colonial Governments, we are proud to say, are showing themselves alive and equal to the situation; that of New Zealand, for example, is taking up steamers for the conveyance of a fresh contingent of troops to South Africa.

We regret to notice that enteric fever is still very prevalent, and that it, together with dysentery and other camp diseases, gives rise to numerous deaths. Nor is this to be wondered at considering that a recrudescence of enteric fever was only to be expected, as we have already foreshadowed, on the approach of warmer weather.

Further reports respecting the Imperial Yeomanry Hospital at Deelfontein from Lieutenant-Colonel A. T. Sloggett, R.A.M.C., show that on Dec. 10th there remained in hospital 17 officers and 443 non-commissioned officers and men, of whom nine officers and 322 men belonged to the Imperial Yeomanry. Colonel Sloggett adds that Surgeon-Dresser Ransford, of the hospital staff, and Nursing Sister Timbrell, of the Pretoria staff, were both convalescent, and that Surgeon-Dresser Blathwayt, of the Deelfontein staff, suffering from enteric fever, was progressing favourably. There had been a decided increase of enteric fever of late. Surgeon-Major C. R. Kilkelly, of the Grenadier Guards, commandant of the hospital at Pretoria, announced on Dec. 5th that there remained in the hospital 55 officers and 388 non-commissioned officers and men. A convoy of wounded from Bronkerspruit, consisting of 11 officers and 20 men, had just arrived.

DENTAL SURGERY WITH THE FIELD FORCE IN SOUTH AFRICA.

BY F. NEWLAND-PEDLEY, F.R.C.S. ENG., L.D.S.,
RECENTLY DENTAL SURGEON TO THE IMPERIAL YEOMANRY HOSPITAL AT DEELFONTEIN.

The following record of my experiences, which was written whilst I was on service in South Africa, is intended to indicate the defects of our military system as regards the care of our soldiers' teeth. For reasons that will be easily understood I deferred the publication till a more suitable time than that of my actual service.

Early in February, 1900, I left England with the staff of the Imperial Yeomanry Hospital as a consulting dental surgeon to treat the special cases of injuries and diseases of the jaw, and for nearly six months I worked under varied conditions—on board ship, in a tent, afterwards in a shanty, and subsequently in a hut. Here I settled down into a daily routine which little resembled what I expected to do, but which seemed to meet the requirements of a large camp as far as the work of one dental surgeon can be said to supply the needs of a general hospital.

Occupation for me was never lacking from the first day of the outward voyage, for there was the usual epidemic of influenza followed by numerous cases of neuralgia and

toothache. I had to attend patients nearly every day, although I had only a few instruments available. I managed to do some temporary fillings and some extractions, including a badly impacted wisdom tooth. The patient was an officer who was suffering from trismus, and as he was just recovering from an attack of bronchitis ether was unsuitable as an anæsthetic; so, much against our inclination, we had to give him chloroform in his bed, and in dislodging the impacted tooth I had to rely exclusively on sense of touch.

After two days at Cape Town we were ordered to Deelfontein, which is nearly 500 miles north of the Cape. I had a world of trouble in taking my two or three tons of equipment with me, and when I arrived at the camp we were all under canvas and it was premature to unpack instruments of value. We had quite enough to do to keep ourselves dry and to prepare accommodation for expected patients. Even whilst we were living in tents there was something for me to do in seeing urgent cases of dental trouble, especially amongst the sick. Under such circumstances one cannot do much beyond extractions, and I had to seat the patient in a deck chair and support his head against the tent pole by way of securing a fixed point. At this period the newspapers announced that there was a dental surgeon in our camp, and applications soon poured in from all sides for dental treatment, but I could do little for the applicants as I was unwilling to unpack good instruments before I had a water-tight roof. By way of a temporary resting-place I was promoted to a shanty 10 feet square with a tarpaulin roof. This dear little place, which subsequently became a mortuary, I used for a time as a dental surgery and also as the office of a camp journal which I started under the title of the *Devil's Fountain*.

On March 25th a complicated fractured jaw case arrived and as it was necessary for me to unpack my workroom appliances in order to construct a special splint I was moved into a hospital shed which I converted into a work-room and bedroom combined, and I had the use of the second or reserve operating-theatre of the hospital for my consultations and operative work. The workroom was 27 feet long and 16 feet wide, and it was constructed of sections fastened together with bolts and nuts, so that it could be readily taken down and put up elsewhere if desired. Each section was 8 feet long, 5 feet 6 inches wide, and 4 inches thick, and it consisted of an outer layer of galvanised iron nailed on to a rough wooden frame and lined with deal boards. It was lit by four windows, each 3 feet 6 inches by 2 feet 6 inches. These huts, or sheds, were much cooler than tents in summer and were a much better protection against rain. For winter they were rather too well ventilated, as there was an open space of four inches all round the eaves, and there were about 50 large square holes in the woodwork where the sections were bolted together. A fine breeze blew upwards between the floor-boards and there was a wide chink round the floor which admitted a further supply of fresh air. The cost of a similar shed better made and finished would be about £50 in England, but these sheds were made in Cape Town and were inferior in every respect to the English huts excepting in the matter of mobility. The draught under the boards could be reduced by piling earth round three sides of the foundation, and the industrious person who had the foresight to bring his own carpenter's tools could quickly exclude the frosty night air. With these slight improvements the shed made a very suitable workroom and here I set up a casting bench, a plaster bench, and a jeweller's bench, with vulcaniser, lathe, and all necessary appliances. A smaller room would be sufficient for a workroom if additional space were afforded for storage and for a bedroom, but in a country where commandeering is recognised as a fine art and tools are in great request the dental surgeon who elects to combine his sitting-room, bedroom, and store-room with his workroom is wise. I covered the ugly walls with numerous prints and engravings, many of which I framed (see Figure). This kind of workroom may be considered perfectly satisfactory for two or three mechanical assistants, in addition to which there is space for one bed 2 feet 6 inches wide.

Dental workroom at the Imperial Yeomanry Hospital, Deelfontein.

My operating and consulting-room adjoined the operating theatre and x ray room, and could be used at any moment as a second surgical theatre if it were necessary to perform two

operations at the same time. The room was 19 feet by 16 feet, and was lit by seven windows. An attempt at top-lighting had been made, but it could not be said that the light was really good for dental manipulations. In this room I placed an operating chair, a dental engine, and all the instruments, appliances, and materials that I required for practice. There were, in reserve, a second engine and two more operating chairs for the use of possible assistants. I worked strictly by appointment for all cases requiring fillings, and the ophthalmic surgeon was kind enough to give gas every day at 11.30 A.M. punctually. Some surprise may be felt that one should give gas to a soldier for the extraction of a tooth—and it would not be necessary if the patients were not sick, but hundreds of them were recovering from typhoid fever and dysentery, which left them in a very weak state. A man with nine bullet-wounds, who was known amongst his friends as the man who stopped a whole volley, was a very brave fellow, but he was glad to take gas for a severe extraction. A patient was sent to me with a history of thoracic aneurysm and I decided to use gas in the extraction of an aching tooth, believing that the pain of the operation would be more dangerous than the anæsthetic. An appointment for the next day was made with Mr. L. V. Cargill and the surgeon in charge of the case, but the aneurysm ruptured into the œsophagus during the night and the patient died.

The work required of me at Deelfontein was little more than the work of a dental practitioner and I only had a very few severe gunshot cases which I treated in conjunction with Mr. Alfred Fripp. Gold fillings are rarely necessary in a military camp, but the percentage of exposed pulps is very high, as nearly every patient would rank as a neglected case. Disease, neglect, tough beef, and hard biscuit play havoc with the teeth—one young man had only three useful teeth left. How such patients recover from typhoid fever and dysentery is a mystery. They are of no further use as fighting men under the present *régime*, for they cannot eat service food Nothing is done to preserve the soldier's teeth whilst he has any and when they are gone he must go home as a man unfit for service. It would be better and quicker to put a soldier's teeth in order than to train a fresh man as a substitute for the invalid. The officers suffer with their teeth after a few months' campaigning, and I hear on the best authority that there were at one time at Modder river 80 officers requiring dental attention and they sent to Cape Town for a dental surgeon. Unfortunately, they were again on the march when he arrived.

The selection of cases for hospital treatment and the limitation of work was most perplexing, and without the exercise of a good deal of discretion the dental surgeon in such a situation will find himself attending the patients who have the least claim on his time. I thought that some patients who were able to go to Kimberley or Cape Town might be recommended to consult practitioners in those towns, for there were in the beds of the Imperial Yeomanry Hospital a great many more patients than I could attend.

TO SAVE THE TEETH OF AN ARMY.

One is compelled to face the question, Can nothing be done to save the teeth of an army? and regarding my appointment as being somewhat of an experimental nature I think I should be fulfilling the wishes of those interested in the welfare of our brave "Tommies" if I were to attempt to devise a scheme under which the army in time of war could be provided with dental practitioners. I purposely allude to war times, for if it can be shown how to deal satisfactorily with the teeth of an army threading its way over 1000 miles of South African territory it will be comparatively easy to attend to the soldiers' teeth at home. At first sight it might seem desirable to attach a dental surgeon to each regiment, brigade, or division. Experience in South Africa, however, has left no doubt in my own mind that it would be better to make such appointments to the general hospitals, and perhaps to the stationary hospitals also, where the transport rations and sleeping accommodation for two or three such dental officers could easily be added to that already required for the staff of 21 medical officers. Each of the numerous general or base hospitals in South Africa should have been provided before it left England with a dental unit consisting of one dental surgeon and two senior dental students as assistants. In Deelfontein it would have been impossible for me adequately to tackle the dental work of our 1000-bedded hospital without at least two assistants. What must the condition have been in the general hospitals at Cape Town, Kimberley, Naauwpoort, and Bloemfontein? My chief experience was drawn from our camp of 1000 souls, but in the latter place alone there were 5000 sick in hospital, to say nothing of the 30,000 troops left encamped there after Lord Roberts moved north with the bulk of his army. At each general hospital there should be an operating-room with three chairs and a workroom for the construction of special appliances and dentures. Each stationary hospital of 200 beds should similarly have a dental surgeon upon its staff, but workroom appliances are cumbrous and heavy as compared with surgical instruments, and all patients requiring dentures should be sent to the general hospitals. The dental units should be supervised by the chief dental officer at the base in the same way that the principal medical officer supervises all medical units.

To meet emergencies and the requirements at the actual front—as, for example, after a great battle or during a protracted halt of the army—the principal dental officer should have a small reserve of dental officers who could be drafted to any point on the receipt of the necessary intelligence from headquarters. The equipment of the dental officers who were sent to the front would, of course, be as light as possible. The dental engine packs into a small space and all the necessary instruments and materials would go into a case one cubic foot in measurement. Dental officers at the front could obtain additional supplies if necessary from the nearest general hospital. No special operating chair should be taken to the front; all that is necessary is a portable headrest that can be fixed on to any chair. In large hospitals portable operating chairs weighing 80 pounds each and costing seven guineas would be useful, and a strong operating chair for anæsthetic operations would be desirable in addition.

The manner in which the dental officers are to be found and some indication of the expense may now be given. I believe that dental surgeons to act as heads of units could be obtained in any war on similar terms to those which were given to the civilian medical officers in the present war. Every unit would thus contain one good dental surgeon who should preferably be a teacher from one of the dental schools. Two senior dental students who would act as dental assistants to him would easily be obtained at very small expense, and it would be better if the dental surgeon were allowed to select his own assistants. When I was leaving England I obtained a list of the names of my pupils who would follow me to act as assistants or dressers, and at least a dozen gave in their names. The conditions arranged were that each of them would serve for at least six months, receiving a first-class passage and maintenance in any hospital to which they might be attached, together with remuneration at the rate of £75 per annum as pocket-money. Each student was to bring his own dental engine and student's set of instruments, the value of which would be about £30. I communicated with the Royal College of Surgeons of England and they undertook to recognise six months' service in South Africa as the equivalent of a like period spent in a hospital at home. At the Imperial Yeomanry Hospital we had a suitably equipped workroom and operating-room, so that if it had been desired to test the work of a dental unit in a general hospital it would only have been necessary for the War Office to sanction the sending out of two of the pupils whom I selected. I applied for these assistants and I had more than enough work for them. The committee in London who manage the affairs of this hospital acquiesced in my request for them to be sent, of course at the expense of this hospital and not at that of the War Office; but the latter absolutely refused to endorse the appointment of more than one dental attendant to this British army of about 200,000 officers and men. My chief wonder is that Mr. Fripp succeeded in getting them to allow even that one to be included in the staff of the Imperial Yeomanry Hospital.

ROYAL BRITISH NURSES' ASSOCIATION.—The offices of this association have been removed to new premises at 10, Orchard-street, Oxford-street, W., where all communications for the future should be addressed. On Jan. 17th Mrs. Humphrey Ward will open a discussion in the new rooms of the association on the Education of Crippled Children in which the matrons of various children's hospitals will take part. Tickets may be obtained from the secretary.

BOROUGH COUNCILS AND THE HOUSING OF THE DISSOLUTE POOR.

WITH the new year the new borough councils will have got sufficiently into harness to commence their work of local administration and reform. They are intended to replace the old, and in too many instances, the effete, vestries; and for this purpose they have been armed with more extensive powers and endowed with higher dignity. The Londoner waits anxiously for some good result.

Of all the questions which demand immediate attention and action the housing problem stands first. Past experience is not encouraging, for the grievance is becoming more and more acute and it is the deserving as well as the undeserving who now suffer. It is not only the poor but the comparatively well-to-do artisan who cannot find a suitable home. Though from a sanitary point of view it is the thriftless, the filthy, the vicious, and the intemperate, who create the greatest danger of epidemic disease, from the political and social point of view the fact that more worthy members of the community are in great difficulties is likely to have influence in determining the local authorities to take action. Thus it must be hoped that the agitation arising from the suffering of a better class may help to bring relief not only to themselves but to those who are even less fortunate. Nevertheless it will be necessary to bring much pressure to bear, for past experience has shown how evils accumulate more rapidly than improvements are effected. When we remember that 16 years have already elapsed since one of the most weighty of Parliamentary commissions ever held reported on the question of the housing of the poor, and that comparatively little has yet been done, apprehensions as to the slowness of future progress may well be entertained. It is against further delay that we must act with all possible energy. Six years elapsed before the work of the Royal Commission of 1884 was embodied in the Housing of the Working Classes Act of 1890. Then it was thought that by the creation of a county council for the metropolis a local authority would be brought into existence that would be better able to apply the provisions of this Act. But that, again, required much time and the London County Council did not for several years fully realise the powers it possessed. It is maintained that the Council at first did not appreciate the importance of Part III. of the Act, which embodies Lord Shaftesbury's Act of 1851—a good law badly or feebly applied. The Council then studied in preference Parts I. and II. of the Act, under which the land acquired by the local authority must be sold, while under Part III. the local authority may retain the property. As it had been reported to the Council that 214,840 persons were living in one room, and that 128,000 families of from four to twelve persons had not more than one room, the necessity of taking action was but too evident. It was likewise stated a few years ago that the artisans' dwellings companies had ceased building, so that matters were drifting from bad to worse. This of course was a state of things shocking to contemplate.

As a remedial measure the Housing Committee of the London County Council gave details concerning 30 plots of vacant land within the boundaries of the metropolis which might be bought. They also now began to insist on the value of Part III. of the Act. About a million sterling has been spent to purchase and pull down insanitary property, and model dwellings have been raised instead of old rookeries, but the tenements thus brought into existence contain about 4000 persons less than those which were destroyed. This is a great sanitary improvement but it does not relieve the pressure on house space. To further complicate matters there were differences of opinion between some of the local vestries and the Council. At least one vestry was anxious that the Council should deal with their insanitary areas under Part III. of the Act, that it should acquire the property and put it all in order. The Council, on the other hand, was not particularly anxious to assume such responsibilities in regard to houses that had no structural sanitary defects and replied that the grievances might be dealt with by vestries by more energetic inspection under their by-laws or under the Public Health (London) Act of 1891. Whatever may be the merits of this contention it has been definitely set at rest by conferring on the borough councils themselves the right of applying Part III. of the Act to their own district. They can, therefore, now do what their predecessors, the vestries, asked the London County Council to take in hand, so that if it be true that the impediment in the past has been the slowness of action of the Council this need not affect the future.

The borough councils, however, will now have to examine with the greater care that responsibility engenders whether the vestries were always right when they desired to see Part III. of the Act applied to insanitary areas. The problem is complex and a remedy suited to one insanitary area does not apply to another. The question in some localities is whether a high death-rate alone suffices to qualify houses as insanitary. Some of the highest death-rates occur in houses that cannot, as dwellings, be qualified as insanitary. The streets are broad and there are wide open spaces and big yards behind the houses. The rooms are lofty, the houses are modern, and the drainage if anything is above the average, the drains being carefully trapped and ventilated. Perhaps the subsoil may be at fault or the street sewers may be of insufficient gradient to be self-cleansing, though these are defects that would not be altered by the municipalisation of the houses. Yet death-rates that exceed 40 per 1000 per annum occur in such dwellings. Topographical conditions and bad street sewers may account for some of the ill-health prevailing, but it is self-evident that the principal causes are the habits of the people themselves and overcrowding. This is not a theoretical contention, there is practical proof of its truth. In the same streets there are common lodging-houses and there the death-rate and the sick-rate are somewhat lower. On the other hand, it may justly be argued that this would inevitably be the case as there are fewer children in common lodging-houses than in tenement houses; but against this argument it can be maintained that though there are fewer children, on the other hand the inhabitants of the common lodging-houses are poorer and endure greater privations than those of the tenement houses. One thing, however, is certain—namely, that the common lodging-houses are much cleaner than the private tenement houses, even when the latter, being registered, are open to constant inspection. The contention is that in some districts the inspection of registered tenement houses has not been carried out properly; and it is said that the vestries, instead of asking the Council to buy up this property, should have appointed more inspectors and have kept it under better control.

There can be no doubt that many more inspectors are needed; but the most elaborate system of inspection will not alter economic conditions. The application of Part III. of the Act may contribute to this result; the action of inspectors might, if anything, aggravate the economic difficulty. In more than one specially insanitary area there stand side by side common lodging-houses and registered tenement houses. The old Common Lodging-houses Act applies to the former, the only alteration being that the inspectors are now under the London County Council instead of under the Metropolitan Police. The staff of inspectors is numerous, the most rigorous control is exercised, and the inspection is so frequent that cleanliness is maintained and overcrowding is prevented. In some cases a common lodging-house and a registered tenement house are owned and managed by the same proprietor; they are sometimes in the same street and stand side by side, yet there is no fault to be found with the one, while the other is overcrowded, filthy, and in a deplorable condition. It seems quite natural to conclude that the one inspected by the London County Council inspectors is well inspected and the other badly inspected. The borough councils are, therefore, urged not to follow the parsimonious policy of the vestries but to appoint a much larger number of inspectors. Unfortunately, it does not follow that what is successful with regard to common lodging-houses would be equally effective with regard to the registered tenement houses. The position socially and economically is different. The common lodging-houses are inhabited mainly by single men, single women, and a smaller number of adult couples; the tenement houses, on the contrary, are to a large extent occupied by families. It is the children who very generally cause the overcrowding, who add to the foulness of the atmosphere, and who certainly do not help to keep the rooms clean and tidy. Many of these tenement houses are not structurally

defective. It is the dirt and the overcrowding, the vicious lives, the insufficient food and clothing, &c., which are the principal causes of the high death-rate. To improve these conditions would mean that more money must be spent; and where is the money to come from?

This is the point where the advocates of the application of Part III. of the Act step in. They say that the high death-rate is a sufficient reason, without there being structural sanitary defects, to justify the sanitary authority, whether county council or borough council, in acquiring the property. It is not proposed that in every instance the houses thus purchased should be pulled down and rebuilt. The first of all necessities is to reduce the rents, and a municipal authority could afford to let two rooms for the price now charged for one room. But if this were done, where to-day we have two tenants each renting a room one of these tenants would have to go away so that the remaining tenant might have two rooms instead of one. This might be met either by building new houses on vacant sites or by making better use of some of the space now built upon and erecting in the place of existing small cottages large tenement model dwellings. In all this the first thing to be done is to reduce the rents and to increase the accommodation. Then, and after that is accomplished, it will be necessary to have a very constant and elaborate system of inspection. However cheap the rents may be, there is no inconsiderable section of the population which will still continue to overcrowd and to live in filth, if they can save any rent money to spend in some form of dissipation or enjoyment. But this must be prevented by the strong arm of the law. If the local authorities incur the responsibility and expense of carrying out large schemes for the rehousing of the poor it is for the purpose of preventing overcrowding and insuring cleanliness. It is at this stage that inspection will produce the best results. But at present what is an inspector to do?

We have visited at one time or another not a few of these insanitary areas and we cannot better illustrate the difficulties than by describing some cases. In the small back first floor room of a house originally built to accommodate one single family we found a woman and her husband. The man was a coachman, but being addicted to drink he had been discharged and was out of work. The woman was just recovering from a dangerous attack of pleurisy, and had also suffered from erysipelas. She was able to make dresses and she sewed very well, but in consequence of her illness and the bad repute of the street in which she lived, she could not get any work. The couple were simply starving. They had seen better days and they confessed to have fallen in the main through their own fault, but this did not lessen the difficulty. Indeed, the fact that the people are themselves often very much to blame only adds to the complications of the problem. They paid 4*s*. 6*d*. per week for their very small room; it was supposed to be let furnished with all necessary utensils. These necessary utensils consisted of a saucepan with three holes in it and a kettle without a spout. The bed, with several of the laths broken, stood by the window. One of the panes of glass had been broken, so that for some time the bedclothes were damp with the rain that came through. Now the window had been repaired, not by putting in a new pane of glass, but by sticking fragments of glass over the broken part of the old pane. The sheets of the bed, provided by the landlord, were well-nigh black, and the tenant explained that if she washed them herself she had to wait till they were dry and to sleep without sheets in the meanwhile. Now if by constant inspection the landlord was made to furnish this room properly, would he not increase the rent? Again, if the bedding and the utensils were in a better condition might not the tenants be tempted to pawn or sell some of them? In another small back room we found a woman suffering from pulmonary tuberculosis. Her husband tried to make a little money by selling in the streets some lamp-glass cleaners of his own manufacture, but being lame, he found it very painful to stand about. Here again the rent was 4*s*. 6*d*. a week and it was evident that these people were rarely able to obtain sufficient food. In a large front room there was a woman with so numerous a family that complaints had been made against her of overcrowding. She then sent two of her boys to a neighbouring common lodging-house, but they met such rough company there that she finally took a second room in the house and had to pay 9*s*. a week rent for the two rooms. How was this to be done now that her husband, a labourer, was out of work?

To attack these people for overcrowding when they are already starving themselves so as to pay extortionate rents does not seem a very humane or a very practical proceeding. But if these houses, instead of being in the hands of persons who unscrupulously speculate on the misery of the poor, were owned by the borough council they might be kept clean, be simply but properly furnished, and be let out at much lower rents. They would however, require very keen and constant supervision and the question is whether, in the face of such control, the same dissolute class of people who now inhabit them would remain. If they did not then it would simply mean that the difficulty would be transferred to some other locality. In Fulham we came across a case in point. A woman, her husband, and some of her children slept in one room. Then she had on the staircase landing a sort of lumber-room, in which she managed to squeeze a bed and one chair. Here three of her children slept. A sanitary inspector warned her against overcrowding, so she sent two of her children to sleep with a friend who lived in the same street, and where there was more room. The sanitary inspector imagined that he had put an end to the overcrowding; but no sooner had he expressed his satisfaction than she secured two lodgers, journeyman bakers, who came in late at night and left early in the morning, and were able to sleep in the little room without attracting any notice. This is the sort of thing that will constantly occur. If a family are all living in one room to-day, and in the course of time, through the benevolent action of a borough council, they are given two rooms for the same rent, the chances are that they will sublet the second room and continue to overcrowd just as before. Then it is that strict inspection will be necessary to find all this out and prevent its occurrence. But while the extreme poor are called upon to pay, as in the typical cases described, 4*s*. 6*d*. for a small back room, 6*s*. for a larger front room, and 9*s*. per week for two rooms, one small and one large, it is scarcely fair to complain of overcrowding, for we must take into consideration that many of these people consider themselves fortunate if they earn 12*s*. in a week. Many sell flowers, toys, and other objects in the streets, or live by petty thieving; a more skilful or a professional thief is often better lodged. The women sometimes belong to the lowest class of prostitutes, and whatever may be the expedients by which they live, it is quite certain that they cannot afford to pay high rents. Yet it is precisely this class that pays, in proportion to the accommodation received, higher rents than any other class of the community. The more dissolute the class the higher the rent charged by those who cater for them.

Of late years the problem has presented itself in a comparatively speaking novel aspect. It was supposed that the lowest class lived in low-class dwellings that were so insanitary and dilapidated that the first thing to be done was to pull the houses down. In many instances this is no longer the case. They, on the contrary, live in modern houses of the middle-class type that possess no structural defects and are well drained. But the tenants overcrowd these houses, and such is their poverty, and their dissolute, drunken, dirty habits, that in spite of good drainage and good houses the death-rates in certain areas of this description are generally above 40 per 1000 per annum and have sometimes exceeded 50 per 1000. It is proposed to make this high death-rate the pretext for municipalising such property; but if the compensation given to the owners of such property is sufficiently high, will not this constitute a premium to those who allow their property to be degraded by the advent of tenants of this class? Are borough councils competent to become the landlords of the most dissolute and unmanageable section of the community? It is a heavy responsibility, though it is difficult to see by whom else the work can be undertaken. The London County Council shrank from the hazards of such an undertaking: will the borough councils display greater courage and enterprise? If the rents are to be reduced—and surely they must be reduced—the profits will be too small to tempt private enterprise. At first the strict regulations and the constant inspection that will be necessary to keep such property in order will have a tendency to drive away the more dissolute among the tenants. They will prefer to pay higher rents to the private speculator who will allow them to overcrowd and to wallow in the dirt which they often much prefer to cleanliness. But when the local authorities are able to provide, at low

rents, proper accommodation they will then be justified in prosecuting those who prefer to live in insanitary conditions.

High rents are as effective a cause of high death-rates as defective drainage, since the high mortality occurs where the drainage and structure of the houses are not at fault, where the streets are broad and the open spaces behind the houses are ample. Of the submerged, those who have sunk deepest in the mire stand first in need of municipal intervention on their behalf. It is in catering for them that private enterprise has most conspicuously failed and therefore municipal enterprise would be most justifiable. Private enterprise only succeeds because it tolerates overcrowding. Private enterprise which only prospers by breaking the law may well be suppressed. If it can compete with municipal enterprise that observes the law, well and good, if not, it does not deserve to exist. Private enterprise subdivides into tenements a house worth £40 a year and charges £90 a year to the sub-tenants. Municipal enterprise need not charge more than £40 or £45 a year for the same tenements, and it can do this without increasing the rates. Why, then, should London wait? All that is necessary is to so arrange matters as to prevent the payment of such exaggerated compensation or purchase money as would handicap municipal enterprise by entailing too large an expenditure of capital. For instance, if a house worth £40 a year brings in £90 a year because it is subdivided into small tenements and overcrowded by the lowest class of tenants the compensation for expropriation should be estimated on the £40 annual valuation and not on the £90. On this basis the rehousing even of the poorest and the most dissolute class could be made to pay, and from the sanitary point of view it is for this class that action is most urgently needed. From the moral point of view, though some of these people dearly love the dirt and disorder in which they live, others, on the contrary, would eagerly profit by any opportunity of raising themselves. In this cause, therefore, the social reformer and the sanitary reformer can press forward hand in hand.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6157 births and 3590 deaths were registered during the week ending Dec. 22nd. The annual rate of mortality in these towns, which had been 18·0, 17·7, and 16·8 per 1000 in the three preceding weeks, further decreased to 16·1 during the week under notice. The death-rate in London was 15·7 per 1000, while it averaged 16·4 in the 32 provincial towns. The lowest death-rates in these towns were 10·1 in Derby, 11·6 in West Ham, 12·3 in Norwich, and 12·5 in Burnley; the highest rates were 19·6 in Liverpool, 20·6 in Preston, 22·2 in Salford, and 22·3 in Birkenhead. The 3590 deaths in these towns included 351 which were referred to the principal zymotic diseases, against 363 and 328 in the two preceding weeks; of these, 103 resulted from diphtheria, 76 from whooping-cough, 52 from "fever" (principally enteric), 48 from measles, 39 from diarrhœa, and 33 from scarlet fever. No death from any of these diseases occurred during the week under notice in Norwich; in the other towns they caused the lowest death-rates in Plymouth, Derby, Huddersfield, and Gateshead, and the highest rates in Leicester, Burnley, Blackburn, and Sheffield. The greatest mortality from measles occurred in Swansea; from scarlet fever in Burnley; from whooping-cough in Croydon, Nottingham, and Sunderland; and from diarrhœa in Wolverhampton and Birkenhead. The mortality from scarlet fever showed no marked excess in any of the large towns. The 103 deaths from diphtheria included 36 in London, 20 in Sheffield, 11 in Leicester, and five in Blackburn. No fatal case of small-pox was registered in any of the 33 towns, and only one small-pox patient remained under treatment in the Metropolitan Asylums hospitals on Saturday, Dec. 22nd. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2406, against numbers decreasing from 2728 to 2617 on the five preceding Saturdays; 218 new cases were admitted during the week, against 279, 259, and 255 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 435, 400, and 349 in the three preceding weeks, further declined to 306 during the week under notice and were 204 below the corrected average. The causes of 45, or 1·3 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Nottingham, Bradford, Leeds, Newcastle, and 11 other smaller towns. The largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Sheffield, and Gateshead.

During the week ending Saturday last, Dec. 29th, 1900, 4178 births and 3773 deaths were registered in 33 of the largest English towns. The annual rate of mortality in these towns, which had been 17·7, 16 8, and 16·1 per 1000 in the three preceding weeks, rose again last week to 16·9. In London the death-rate was 16·7 per 1000, while it averaged 17·1 in the 32 large provincial towns. The lowest death-rates in these towns were 9·5 in Huddersfield, 10·2 in Cardiff, 10·7 in Leicester, and 10·9 in Halifax; the highest rates were 20·9 in Newcastle, 21·4 in Birkenhead, 22·4 in Liverpool and in Preston, and 23·2 in Hull. The 3773 deaths in these towns included 334 which were referred to the principal zymotic diseases, against 328 and 351 in the two preceding weeks; of these 88 resulted from whooping-cough, 78 from diphtheria, 59 from measles, 46 from "fever" (principally enteric), 34 from diarrhœa, and 29 from scarlet fever. No death from any of these diseases occurred last week in Wolverhampton, Norwich, and Huddersfield; in the other towns they caused the lowest death-rates in Croydon, Brighton, and Sunderland, and the highest rates in Nottingham, Salford, Blackburn, and Preston. The greatest mortality from measles occurred in Swansea; from whooping-cough in Derby, Nottingham, Salford, Preston, and Sheffield; and from diarrhœa in Gateshead. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 78 deaths from diphtheria included 26 in London, nine in Sheffield, five in Leicester, five in Liverpool, and five in Blackburn. No fatal case of small-pox was registered last week either in London or in any of the 32 large provincial towns, and only one small-pox patient remained under treatment in the Metropolitan Asylums Hospitals on Saturday last, Dec. 29th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2535, against numbers decreasing from 2727 to 2477 on the four preceding Saturdays; 167 new cases were admitted during the week, against 259, 255, and 218 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had declined from 435 to 306 in the four preceding weeks, rose again to 325 last week, but were 235 below the corrected average. The causes of 77, or 2·1 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Salford, Leeds, and 14 other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Preston, Sheffield, Gateshead, and Newcastle.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 21·7, 20·7, and 19·3 per 1000 in the three preceding weeks, further declined to 18·2 during the week ending Dec. 22nd, but showed an excess of 2·1 per 1000 over the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 11 3 in Leith and 16·4 in Dundee to 21 5 in Greenock and 28·7 in Perth. The 563 deaths in these towns included 26 which were referred to whooping-cough, 15 to diarrhœa, 12 to measles, eight to diphtheria, seven to scarlet fever, five to "fever," and one to small-pox. In all 74 deaths resulted from these principal zymotic diseases, against 87 and 79 in the two preceding weeks. These 74 deaths were equal to an annual rate of 2·4 per 1000, which was 0·8 above the mean death-rate from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 31 and 33 in the two preceding weeks, declined again during the week under notice to 26, of which 22 occurred in Glasgow, two in Paisley, and two in Greenock. The deaths from diarrhœa, which had decreased from 20 to 10 in the four preceding weeks, rose again to 15 during the week ending Dec. 22nd and included 10 in Glasgow, three in Dundee, and two in Paisley. The fatal cases of measles, which had increased from eight to 16 in the four preceding weeks, declined again during the

week under notice to 12, of which seven were registered in Edinburgh, two in Glasgow, and two in Aberdeen. The eight deaths from diphtheria showed an excess of five over the number in the preceding week and included five in Glasgow and two in Leith. The fatal cases of scarlet fever, which had been nine and eight in the two preceding weeks, further declined during the week under notice to seven, of which four occurred in Glasgow. The five deaths referred to different forms of "fever" showed a slight decline from the number in the preceding week and included four in Glasgow, where the fatal case of small-pox was also registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 151 and 136 in the two preceding weeks, further declined to 111 during the week ending Dec. 22nd and were 72 below the number in the corresponding period of the preceding year. The causes of 32, or nearly 5 per cent., of the deaths in these eight towns were not certified.

In eight of the principal Scotch towns the annual rate of mortality, which had declined from 21·7 to 18·2 per 1000 in the four preceding weeks, rose again to 20·4 during the week ending Dec. 29th, and showed an excess of 3·5 per 1000 over the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 8·4 in Perth and 17·5 in Edinburgh to 22·6 in Aberdeen and in Paisley, and 25·8 in Greenock. The 638 deaths in these towns included 33 which were referred to whooping-cough, 18 to diarrhœa, 12 to measles, nine to diphtheria, seven to "fever," five to scarlet fever, and three to small-pox. In all, 87 deaths resulted from these principal zymotic diseases, against 79 and 74 in the two preceding weeks. These 87 deaths were equal to an annual rate of 2·8 per 1000, which was 1·3 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 33 and 26 in the two preceding weeks, rose again last week to 33, of which 28 occurred in Glasgow, two in Dundee, and two in Greenock. The deaths from diarrhœa, which had been 10 and 15 in the two preceding weeks, further rose to 18 last week, and included six in Glasgow, five in Dundee and four in Aberdeen. The fatal cases of measles, which had been 16 and 12 in the two preceding weeks, were again 12 last week, of which nine were registered in Aberdeen and two in Edinburgh. The deaths from diphtheria, which had been three and eight in the two preceding weeks, further increased to nine last week, and included three in Glasgow, two in Edinburgh, and two in Aberdeen. The fatal cases of "fever," which had been six and five in the two preceding weeks, rose again last week to seven, of which six occurred in Glasgow. The deaths from scarlet fever, which had declined from 9 to 7 in the three preceding weeks, further declined to 5 last week, and included two in Glasgow and two in Paisley. The three fatal cases of small pox were all recorded in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had declined from 160 to 111 in the four preceding weeks, rose again last week to 121, but were 132 below the number in the corresponding period of last year. The causes of 38, or nearly 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 27·4 and 25·8 per 1000 in the two preceding weeks, further declined to 25·7 during the week ending Dec. 22nd. During the four weeks ending on that date the death-rate in the city has averaged 25·9 per 1000, the rate during the same period having been 16·9 in London and 19·6 in Edinburgh. The 172 deaths belonging to Dublin registered during the week under notice included 16 which were referred to the principal zymotic diseases, against 11 and 12 in the two preceding weeks; of these, six resulted from whooping-cough, four from "fever," four from diarrhœa, one from scarlet fever, and one from diphtheria. These 16 deaths were equal to an annual rate of 2·4 per 1000, the zymotic death-rate during the same period being 1·4 in London and 1·5 in Edinburgh. The fatal cases of whooping-cough, which had been four and seven in the two preceding weeks, declined again to 6 during the week ending Saturday, Dec. 22nd. The mortality both from "fever" and from diarrhœa exceeded that recorded in the preceding week. The 172 deaths in Dublin during the week under notice included 32 of infants under one year of age and 41 of persons aged upwards of 60 years; the deaths of infants exceeded the number in the preceding week, while those of elderly persons showed a decline. Eight inquest cases and six deaths from violence were registered, and 56, or nearly one-third, of the deaths occurred in public institutions. The causes of eight, or nearly 5 per cent., of the deaths in the city during the week were not certified.

The annual rate of mortality in Dublin, which had been 27·4, 25·8, and 25·7 per 1000 in the three preceding weeks, further declined to 21·5 during the week ending Dec. 29th, 1900. During the 13 weeks of the quarter ending Saturday last the death-rate in the city averaged 24·5 per 1000, the rate during the same period being 16·5 in London and 17·6 in Edinburgh. The 144 deaths belonging to Dublin registered during the week under notice were 28 less than the number in the preceding week and included 12 which were referred to the principal zymotic diseases, against 11, 12, and 16 in the three preceding weeks; of these, five resulted from whooping-cough, four from "fever," two from diarrhœa, and one from scarlet fever. These 12 deaths were equal to an annual rate of 1·8 per 1000, the zymotic death-rate during the same period being 1·4 in London and 0·9 in Edinburgh. The deaths referred to whooping-cough, which had been seven and six in the two preceding weeks, further declined last week to five. The four fatal cases of "fever" corresponded with the number in the preceding week. The deaths from diarrhœa, which had been two and four in the two preceding weeks, declined again to two last week. The 144 deaths in Dublin last week included 20 of infants under one year of age and 47 of persons aged upwards of 60 years; the deaths of infants showed a marked decline, while those of elderly persons slightly exceeded the number in the preceding week. Five inquest cases and four deaths from violence were registered, and 53, or more than a third, of the deaths occurred in public institutions. The causes of six, or more than 4 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

THE RETURN OF THE FIELD-MARSHAL.

FIELD-MARSHAL LORD ROBERTS, for so, we suppose, we must continue to call him until the official conferment of the higher titles he has won, landed at Cowes on Jan. 2nd. Here he was received by all classes from Royalty downwards with that respect and affection which he so well deserves. At the landing stage he was greeted by the Duke of Connaught and Princess Henry of Battenberg, both of whom shook his hand in welcome. Owing to the injury received at Johannesberg Lord Roberts was unable to use his right hand, but he was looking in the best of health and had apparently quite recovered from the fatigues of campaigning. Opposite the town-hall of East Cowes there was a grand stand erected for the accommodation of the spectators, while in front of the stand were drawn up five invalid soldiers from South Africa and veterans from various campaigns in which Lord Roberts had taken part. Here were men from Kabul and Kandahar, from Cawnpoore and Lucknow, all come to welcome their chief on his return from his latest and perhaps most arduous campaign, and for all there was a shake of the hand and a kindly word. Addresses were presented from various local bodies, and then Lord Roberts made his speech of thanks—one of those kindly, simple speeches which he so well knows how to make. He thanked them all for the honour done to him and then passed on to consider the state of affairs in South Africa. In his successor in command, Lord Kitchener, he professed absolute confidence, though that commander had no easy task. His lordship continued:—

You, ladies and gentlemen, have been so fully kept informed by the daily telegrams and the newspaper correspondents of the sufferings so nobly borne and the deeds so gallantly done throughout the campaign that I am sure you will not be surprised if I take this, my earliest, opportunity of expressing my pride in having had the command of such a magnificent army—an army composed of men drawn from all parts of Her Majesty's dominions—men of whom the empire and their friends may well be proud. Among them an admirable spirit of camaraderie has ever existed. The soldiers of Great Britain and the soldiers of Greater Britain have pulled together as brothers fighting under one common flag, and owing allegiance to one common Sovereign, who is beloved and revered equally by all. These unanimous outbursts of loyalty must, I think, be extremely gratifying to Her Majesty and must be considered eminently satisfactory by all Her Majesty's loyal subjects, for with our empire firmly knit together we need fear no

outward foe so long as we are careful ourselves to see that there is no weak point in our armour. I thank you all again most sincerely for the great honour you have done me.

Lord Roberts then drove off to Osborne, arriving at the gates punctually at five minutes to four. His bodyguard consisted of his six Indian orderlies, the route being kept by regulars and volunteers, while the carriage was preceded by a squadron of Yeomanry. The Field-Marshal entered by the Queen's entrance and was met in the courtyard by the gentlemen of the household and escorted to the council chamber, where he was greeted by Prince and Princess Christian, Princess Henry of Battenberg, the Duchess of Connaught, and various other members of the Royal family. Shortly afterwards Lord Roberts was received by Her Majesty in private audience, when it was understood that the Queen intimated her intention of conferring an earldom upon him together with the Most noble Order of the Garter. After the audience Lord Roberts left for Southampton and on the morning of Jan. 3rd proceeded to London, arriving at Paddington at 1 P.M. At the station his lordship was met by the Prince and Princess of Wales, the Duke and Duchess of York, and the Duke and Duchess of Connaught. The Queen's route was taken to Buckingham Palace, where at the moment of writing Lord Roberts is lunching.

We express our pleasure at seeing safe home again one who at a time of bitter sorrow put aside his own grief and went at his country's call to bear the hardships and anxieties of a campaign. His work is known to all: let us welcome him in all thankfulness, although by no means forgetting those who are still bearing the burden of empire.

ROYAL NAVY MEDICAL SERVICE.

The following appointments are notified:—Staff Surgeon J. H. Stenhouse to the *Diana*. Surgeons: H. W. B. Shewell to the *Diana*; R. Hughes to the *Arrogant*; R. L. Price to the Royal Marine Division, Portsmouth; M. Breton to the *Vivid*; C. G. Matthew to the *President*; J. G. Corry to the *Duke of Wellington*; F. C. B. Gittings to the *Monarch* for service on ship and Naval Prison; and G. M. O. Richards to the *Mars*.

ROYAL ARMY MEDICAL CORPS.

The undermentioned civil surgeons now serving in South Africa to be Lieutenants:—Walter James Waters, Basil Pares, Henry Francis Shea, Charles Elphinstone Fleming, Percival James Bodington, Joseph Francis Whelan, Percy Samuel Lelean, James Barkley, William Henry Odlum, Frederick Archer Stephens, Miles George Sterling, William Moroney Power, John Tyrer Johnson, Edgar Francis L'Estrange, Robert Barclay Black, and William Morehead McFarlan.

Temporary Captain Thomas Barton Unwin from medical officer, the Imperial Yeomanry, to be Lieutenant.

INDIA AND THE INDIAN MEDICAL SERVICES.

On relinquishing charge of the civil medical duties of the Amritsar District, Captain A. W. T. Buist, civil surgeon, is posted to Gurdaspur as plague medical officer. Lieutenant-Colonel J. Crofts has been appointed surgeon to his Highness the Maharaja of Jodpore.

The Queen has approved of the following promotions among the officers of the Indian Medical Service. To be Colonel: Lieutenant-Colonel James Sutherland Wilkins, D.S.O., Bombay Establishment. Majors to be Lieutenant-Colonels: Bengal Establishment: George Michael James Giles, Arthur Robert Wyatt Sedgefield, Edwin Francis Horatio Dobson, Johnston Shearer, D.S.O., Hem Chandra Banerji, Sambhu Chandra Nandi, and Francis Samuel Peck. Madras Establishment: John Lawrence Van Geyzel, Hastings Norman Victor Harington, Gerard Macklin Eccles McKee, Kavasji Cursetji Sanjana, Hormasji Merwanji Hakim, John Adolphus Burton, Francis Joseph Doyle, Manekshaw Jamshedji Kelá wálá, and Mervanji Pestanji Kharegat. Bombay Establishment: Kavasji Hormasji Mistri, George Ernest Fooks, and Joseph William Townsend Anderson. Captains to be Majors: Bengal Establishment: Herbert Edward Drake-Brockman, William Byam Lane, and Philip James Lumsden. Bombay Establishment: Samuel Esmond Prall.

ROYAL MALTA ARTILLERY.

Surgeon-Lieutenant Robert Vella, from the Royal Malta Regiment of Militia, to be Surgeon-Lieutenant (with local and temporary rank).

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Major J. P. Massingham resigns his commission.

VOLUNTEER CORPS.

Artillery: 1st Norfolk (Eastern Division, Royal Garrison Artillery): Surgeon-Lieutenant John Charles Reynolds Robinson resigns his commission and is appointed Second Lieutenant. *Rifle:* 1st Volunteer Battalion the Royal Fusiliers (City of London Regiment): Brigade-Surgeon-Lieutenant-Colonel S. P. Smith resigns his commission, with permission to retain his rank and to wear the uniform of the battalion on retirement. 3rd Volunteer Battalion the South Staffordshire Regiment: Supernumerary Surgeon-Captain C. A. MacMunn to be Surgeon-Captain on the Establishment. 4th (Perthshire) Volunteer Battalion the Black Watch (Royal Highlanders): Surgeon-Lieutenant Colonel J. Macfee resigns his commission, with permission to retain his rank and to wear the uniform of the battalion on retirement. 1st (Renfrewshire) Volunteer Battalion, Princess Louise's (Argyll and Sutherland Highlanders): The undermentioned officer resigns his commission: Surgeon-Lieutenant C. McBryde. 20th Middlesex (Artists'): Surgeon-Lieutenant C. S. de Segundo to be Surgeon-Captain.

ROYAL NAVAL HOSPITAL, HASLAR.

The session of instruction at the Royal Naval Hospital, Haslar, for newly-entered surgeons in the Royal Navy terminated on Dec. 21st, 1900, when the prizes were distributed by Sir Henry Norbury, M.D., K.C.B., Director-General of the Medical Department of the Navy, and they were awarded as follows—viz., two prizes consisting of a gold medal and a microscope to Surgeon George Ross, B.A., M.B., and one prize, a silver medal and books, to Surgeon Noel H. Harris.

The following is a list of the surgeons who have been under instruction during the session, arranged in order of seniority as determined by the sum total of the marks obtained at the examination in London on entry and those on the conclusion of the Haslar course:—

Name.	Marks.	Name.	Marks.
G. Ross, B.A., M.B. ...	6360	J. M. H. Conway	4348
J. S. Dudding	5407	H. V. Wells	4341
N. H. Harris	5133	W. Bastian...	4254
H. C. Adams	4975	R. B. Scribner	3965
L. Lindorp...	4960	A. J. Sheldon	3673
C. T. Baxter	4922	J. Verdon	3486
W. E. Gribbell	4622	J. Whelan	3466
R. W. B. Hall	4421	C. R. Rickard	3347

MAUSER WOUNDS AND AMPUTATION.

Writing on this subject in a recent number of the *Archives de Médecine et de Pharmacie Militaires*[1] Dr. J. Alvernhe expresses himself to the following effect. During the early months of the South African war the whole of the surgeons engaged had the satisfaction of noting how relatively benign the wounds that were caused by Mauser projectiles showed themselves, rarely necessitating any serious operative intervention. Consequent on reports from such eminent surgeons as Sir William Mac Cormac, Mr. Treves, and Mr. Dent, the notions became widely current that Mauser bullets generally passed clean through bones, making small cylindrical channels which looked as if they had been cut out by a punch; that penetrating wounds of the cranium were, for the most part, attended by merely insignificant disorder; and that the new projectile threaded its way amidst vessels and nerves without giving rise to any immediate or subsequent disturbance of a grave character. Later, however, the conditions to which these favourable results were due seem to have undergone considerable modification, and the surgeons who ached the theatre of war during the second stage of the campaign were unable to emulate the optimism of their predecessors. Equally ardent exponents of conservative surgery, these distinguished men frequently found themselves reluctantly compelled to have recourse to amputation in order to save the lives of patients for whose injuries the Mauser rifle was responsible. Many reasons have been advanced to account for this regrettable alteration of type. In the first place, it is said that the Boers of late have taken to manipulating their cartridges in order to make the bullets spread on impact and in this way to inflict

[1] No. 12, December, 1900, p. 514.

a wide, ragged, and excessively serious wound instead of the smooth, narrow burrow as above described. Secondly, in the opinion of some observers the space between the combatants has tended to grow less than it was at first, and as a natural consequence the severity of the wounds received at the shortened ranges is much greater than it was. In the third place—and according to Dr. Alvernhe it is here that we have to look for the real explanation—the soldiers being all more or less worn out owing to climate, exposure, bad food, privation, and excessive marching are not so apt for recuperation as they were at the beginning of the war. Their constitutions have run down and their wounds consequently suffer from the lack of vitality. Hence the frequency of the suppurations which are now found to retard cicatrisation.

TRANSVAAL WAR NOTES.

Major B. W. C. Deeble, R.A.M.C., and Civil Surgeon H. J. Starling left South Africa for England in the *Dunera* on Christmas Day.

The following have been discharged from hospital to duty:—Civil Surgeons: H. E. Birmingham, W. O. Beddard, W. J. Collins, and A. Thompson.

SOME FACTS RELATING TO CHOLERA IN INDIA.

The annual report for 1898 of the Sanitary Commissioner with the Government of India published recently contains, among other things, some interesting facts in connexion with cholera. The year 1898 was a relatively healthy one both as regards the European and native armies of India and the native population, and the military shared in the immunity from cholera—an immunity which generally existed throughout the Indian Empire. Cholera occurred among British troops in nine stations only, and there were in all 30 cases and 21 deaths, a case-mortality of 70 per cent. In only one instance was the disease in epidemic form—viz., at Umballa, where there were 20 seizures, with 10 deaths out of the 11 Europeans attacked. Among native troops cholera occurred in six stations among 10 bodies of men. There were in all 57 cases, of which 44 ended in death, a case-mortality of 77·2 per cent. Only 11 jails out of the total number of Indian jails suffered, and there were only 18 cases in all. From the cases in which details were available it appears that altogether 259 individuals were in attendance on 102 cholera cases, and none of them were attacked. No seizures followed subsequently to the movement of troops from infected localities in the case of British troops, but the effect of such movement, although generally satisfactory, was not so completely successful in the case of native troops. The outbreak among European and native troops and followers at Umballa was of special interest, because the Punjab was apparently free from cholera at the time of its occurrence. It is unfortunate, however, that the accounts of the outbreak at Umballa were of a fragmentary character. The Umballa cantonment water-supply is conveyed by pipes which were leaky, and the medical officers consequently ascribed the outbreak to a polluted water-supply, but there was no satisfactory evidence pointing to the water as the cause of cholera. It is curious "that the vibrio of cholera was found in the well used by the Government model dairy, but no case occurred at the dairy, and neither the milk nor the butter from the dairy, appear to have been used by the natives who suffered."

THE STORY OF THE THORN.

The story of the thorn is published in the *Times* of Dec. 26th, 1900, as illustrative, we suppose, of the surgical incompetence of the medical staff and the shortcomings of army hospitals in South Africa. It may or may not be an accurate record of the experience of the patient in question, about which we have our own opinion. But it seems to us grossly unfair and wrong for a writer to seek to cast a slur upon a body of men belonging to any service under the shelter of anonymity. "F.R.C.S." may have a keen appreciation of what constitutes a good story, but we cannot congratulate him on any fastidious sense of honour or justice. If he considered it his duty on public grounds that the allegations should be brought to notice he could easily have done this through the proper channel. At any rate, the story should not have been told anonymously but should have been signed and accompanied by such particulars as would have enabled the authorities on the spot to have instituted, in the interest of all concerned, some inquiries into the matter. As it is, "F.R.C.S.," has cast an unworthy aspersion indiscriminately upon a large number of members of his own profession in the army and, in effect and by implication, has maligned them.

ARMY REFORM.

It is understood that Lord Wolseley will take an early opportunity of speaking on this subject in the House of Lords, and there is naturally a good deal of interest and curiosity felt as to what the late Commander-in-Chief will have to say and as to the nature of the reply which the Government will make and the course which it will adopt. The matter is one of national interest and concerns the medical as well as all other branches of the army.

On Jan. 1st Her Majesty the Queen paid a visit to the Convalescent Home at East Cowes. Several men from South Africa were there, and on the evening of the same day members of the Royal family from Osborne entertained them with music, both vocal and instrumental.

Among the names in the list of New Year honours is that of Major John Crimmin, I.M.S., V.C., who has been made a Companion of the Order of the Indian Empire.

Correspondence.

"Audi alteram partem."

LENGTHENING TENDONS FOR THE SO-CALLED ISCHÆMIC PARALYSIS (VOLKMANN) FOLLOWING ON INJURIES ABOUT THE ELBOW-JOINT.

To the Editors of THE LANCET.

SIRS,—In your review of the surgical work of the year you refer to tendon lengthening as one of the surgical procedures worthy of note. The case you refer to is "a little boy suffering from ischæmic paralysis the result of application of splints for a fracture of the lower end of the humerus or separation of the lower epiphysis of the humerus." In THE LANCET of Feb. 3rd, 1900, you kindly published a clinical lecture of mine on this subject, and if you will allow me I should like to again emphasise one or two points I then raised.

I think it is extremely unfortunate that such an inappropriate term as "ischæmic paralysis" should be applied to a condition which is really primarily a contraction of muscles and not due in any way to the involvement of the nerves, nor can it be shown to be the result of deprivation of blood to the parts—ischæmia. In my lecture I stated:—

> The deformity appears always to occur in children after some severe injury about the elbow-joint and generally after a fracture separation of the lower humeral epiphysis. I have once seen it after a dislocation of both bones of the forearm backwards. The cause of the deformity is, I believe, primarily in the muscular portions of the flexor muscles of the forearm. If the histories of these cases are carefully gone into it will be found that the injuries have been severe and that the flexor muscles have been torn, possibly by the displacement of the forearm backwards with the lower end of the humerus. The torn muscle is replaced by fibrous tissue, and this contracting is, I believe, responsible for the deformity. A lump varying in size can be felt in the flexor muscles in the upper third of the forearm and it has been present in all the cases which I have seen. It is a well-recognised condition in the sterno-mastoid muscle. A swelling is found in about the middle of the muscle soon after birth, which is thought to be due to a tearing of its fibres during parturition; this sometimes produces wry-neck.
>
> I do not believe that splint-pressure has anything to do with the production of the deformity, although I am well aware that in most cases a sore—pressure sore—is present; but this is not always so, for in Case 1 no abrasion of any kind was present and in Case 2 a sore formed but was on the extensor surface of the forearm. I am especially laying stress on this point as it has given rise to one theory—that the contraction is due to a secondary inflammation extending to the muscles from the splint sore. That explanation clearly will not account for Case 1 in which there was no sore of any kind, and in Case 2 the sore was on the back of the forearm. One would imagine that any inflammation extending from this sore would have involved the extensor muscles and produced a hyper-extension of the wrist instead of involving the flexor muscles. For these reasons I am inclined to think that the pressure-sores are not causally related to the deformity; they may, however, be taken as some index of the amount of laceration of the soft parts at the time of the injury, producing a great amount of effusion which increases in amount after the application of splints. Probably the effusion of blood into the skin and subcutaneous tissues renders them anæsthetic, acting in the same way as a hypodermic injection of water; and this may explain why a large sore may form and yet the patient will not complain of any pain.

The explanation here given is, I venture to think, worthy of a fuller consideration. As to the treatment by tendon

lengthening the results justify the treatment. Mr. Page and myself quite independently arrived at the same conclusion that this was the most reasonable way of treating this particular deformity. By referring to the records of our cases it will be seen that I performed the operation about a month before Mr. Page—another example of arriving at the same conclusion independently when similar conditions are under consideration. In my first case the result is now excellent; in the second case the result is fair, the fingers are straight, but the movements are weak. I have since operated on a third case, on August 28th, 1900—a girl aged three years. Her fingers are now quite straight and the power is daily improving; it is too early yet to speak of what the ultimate result will be.—I am, Sirs, yours faithfully,

Leeds, Dec. 31st, 1900. H. LITTLEWOOD.

"ARSENIC IN ARTIFICIAL MANURES."

To the Editors of THE LANCET.

SIRS,—THE LANCET of Dec. 22nd contains a short annotation under the above heading which, if copied into numerous country papers, is calculated to produce a most unwarrantable prejudice against the application of artificial manures. It is not sufficient to make general statements, the actual facts should be given. If, as the writer of the annotation states, "the results are not yet ripe for publication," why should a premature prejudice be created in the public mind? In one paragraph it is stated that the Laboratory Commissioners had found certain artificial manures to be rich in arsenic in a soluble form—namely, soluble in water; but further on in another paragraph it is suggested that arsenic accumulates in the soil. Now, if arsenic be present in a form readily soluble in water it must be obvious that it is not likely to accumulate in the soil. On the contrary, if it exists in a soluble form it is more likely to be washed out of the soil than to accumulate. The mere presence of arsenic in a sample of artificial manure is no evidence whatever that crops manured with such a fertiliser would be in any way likely to produce injurious results to the health either of man or beast. In all these matters it is a question of quantity. Some years ago the present writer had occasion to examine some meadow grass which was rendered unfit for grazing purposes in consequence of sediment deposited from the washings of a copper mine, and in order to make a comparison of the amount of copper salts present pieces of turf were obtained from portions of the field not damaged by mineral washings, but, curiously to relate, these pieces of turf contained appreciable quantities of copper, and the grass had been evidently appreciated by the cattle who had refused to eat the portion upon which the detrita of the mine washings had been deposited. The quantity of arsenic likely to be supplied in any artificial manure must be exceedingly small when distributed over the whole field, probably not more than $\frac{1}{10}$th of a grain per square foot, and being in a soluble form is quite as liable to be washed out of the soil as to be absorbed by turnips or cabbages. I am, Sirs, yours faithfully,

Mark-lane, E.C., Dec. 31st, 1900. JOHN HUGHES, F.I.C.

*** Our words "the results are not yet ripe for publication" did not refer to the examination of artificial manures but to an investigation into other substances. A list of these will be found in another column of this issue (see p. 54). The fate of soluble arsenic, according to our correspondent's view, would be precisely the same as that of the equally soluble nitrates and phosphates used for fertilising purposes. Are they also "washed out"?—ED. L.

"ISOLATION HOSPITALS."

To the Editors of THE LANCET.

SIRS,—The following cases occurring during the past week are surely a proof of Mr. E. D. Marriott's contention that the "return" cases from isolation hospitals are probably the greatest source of further infection. Two children, William Neville and Annie Foster of Henham, Essex, living about two miles apart, returned from the Hospital for Infectious Diseases at Bishop's Stortford on Dec. 16th last. William Neville was sent there on Oct. 22nd and Annie Foster on Nov. 2nd, both suffering from scarlet fever. The child Neville was kept longer than the usual six weeks so that they "might return home together." Their respective homes were absolutely free from any disease during the time that the children were in hospital, but on Dec. 23rd, just a week after the return of each, I discovered a fresh outbreak of scarlet fever in both of the homes, two children being attacked in Neville's house and one in Foster's. The child Neville had a nasal discharge when he returned home.

As far as I can ascertain these were the only cases of scarlet fever in the near neighbourhood. So there is certainly no doubt whatever that these "return" cases were the cause of the second outbreak. My idea is that isolation hospitals should be situated on eminences, if possible, as far away from the town as practicable and an intermediary home or hospital (at a distance) should be supplied where convalescents could remain for a further fortnight after discharge from the isolation hospital and where they should be daily bathed, sent out in the open air, and examined and returned to their homes either in new clothes or properly boiled old ones. I am, Sirs, your faithfully,

Stansted, Essex, Jan. 2nd, 1901. EDGAR PITTWAY.

"THE TEACHING OF ANÆSTHETICS."

To the Editors of THE LANCET.

SIRS,—THE LANCET of Nov. 17th, 1900, contains a leading article (p. 1440) and a letter (p. 1460) by a well-known surgeon—Mr. J. Lionel Stretton—on anæsthetics. Mr. Stretton complains that "such recently qualified men as seek for hospital appointments are lamentably ignorant in the administration of anæsthetics," and this being the case with the pick of the men entering the profession "the rank-and-file must be deplorably incompetent." Mr. Stretton further states that the "examining bodies do not demand any special training in this important subject. ..... I hope the General Medical Council will give their early attention to the matter." The leading article adds point to Mr. Stretton's remarks, and makes it tolerably clear that the principal reason for his complaint is to be found in the fear of chloroform which is impressed upon students by the teaching of anæsthetics in London. We are told by the writer of the article that the safety of an anæsthetic depends, not on the method of administration, but on "whether or not its power of destroying nerve protoplasm is great or small. That of chloroform is great, that of ether is slight, that of nitrous oxide is least of all." This antiquated doctrine is destitute of the smallest shred of truth, as chloroform and ether when inhaled have no more effect on nerve protoplasm than they have on the protoplasm of the stomach or the biceps. But the moral of such teaching, of course, is that the use of chloroform, the most beneficent of all anæsthetics, should be restricted to the narrowest limits, and in dental operations, at all events, only gas or gas and ether employed. As long as fustian of this kind constitutes the standard teaching in England it is useless to expect any improvement whatever in the confidence and ability of the rank and file of the profession to administer anæsthetics. Nor would examinations improve the matter, since they would only test the proficiency of the student in the teaching which is at the root of the evil. The effects of this teaching, which has been tolerated a great deal too long, are threefold. It has rendered the anæsthetist inefficient—chiefly through fright; it has been the direct cause of an immense number of preventable deaths; and it has tended to debase surgery.

In THE LANCET of the previous week (p. 1383) Dr. Dudley Buxton, who is an authority on the London methods of teaching anæsthetics, states that the anæsthetist is not to be looked upon "as a giver of an anæsthetic. His familiarity with surgery should enable him to know what the operator requires, and what will be the effect of the operator's manipulations upon the patient under anæsthesia. His knowledge of anæsthetics should be such that he can adapt the anæsthetic to the necessities of the patient and the requirements of the surgeon. The tremendous responsibility of the anæsthetist whose want of knowledge, of skill, or of courage may jeopardise the patient's life or frustrate the surgeon's most skilful endeavours should be most fully recognised." The first part of this statement appears to be tantamount to advising the man who is giving chloroform to devote part of his attention, the whole of which ought to be concentrated on the inhalation, to assisting or furthering in some way or other, or "keeping

an eye on," the manipulations of the surgeon, and if this is Dr. Buxton's meaning it cannot be too strongly condemned, as it is acknowledged to be the most dangerous of all doctrines to preach. But the gist of the whole argument is more fully disclosed in the second part of the statement. It is that the surgeon is no longer to be responsible for the safety of his patient, but the responsibility is to be shared by the man who gives the chloroform or ether. In certain eventualities the anæsthetist is to dictate to the surgeon, so that the surgeon becomes a mere operator, a subordinate instead of the chief who under all circumstances retains the supreme command and the entire responsibility in his own hands. This constitutes in my opinion the tendency to the degradation of surgery against which surgeons should guard with all their might. There is no doubt about its evil effects on the profession. I know of an operation in England where the anæsthetist gave the patient a slight overdose of chloroform with a Junker's inhaler. The patient, a child, became pallid, and the anæsthetist told the surgeon that he must stop the operation as there was some shock. The surgeon meekly obeyed this direction and sent the child back to bed with the operation unfinished. The proper course for the surgeon obviously was that he should have noticed that the chloroform was being given a little too freely and have told the anæsthetist not to give so much.

The writer of the article of Nov. 17th sheds crocodile tears over the "potency" of chloroform, a phrase which must mean one of two things: either (1) it means that the rank and file of our profession are not to be trusted to employ a potent drug—e.g., chloroform—with safety; or (2) that chloroform possesses a special potency for evil of its own. No one, least of all THE LANCET, could insult the profession by attempting for a moment to maintain the first of these propositions, which is belied in practice in the case of other drugs quite as potent as chloroform every day, and the second is only true in so far as faulty and unsafe methods of administration are concerned. Chloroform has no particular or mysterious potency or action of its own apart from overdosing, and overdosing can be avoided by anybody who knows how to look after the breathing in the right way. I would venture to urge that if THE LANCET, instead of using its enormous power to restrict the employment of chloroform, adopted the opposite tactics and exerted all its influence to extend the benefit of the anæsthetic it would be doing the profession a service of the greatest possible magnitude, which it would be impossible to repay. Snow's obsolete methods and teaching have had a fair and extended trial, with the result that of the men who pass out from the English schools the best are said to be "lamentably ignorant" and the rank and file "deplorably incompetent" in the administration of anæsthetics. Let Syme's principles and the Hyderabad method of administration of chloroform now have an equally fair trial and the entire position of anæsthetics will be changed. I am convinced from careful observation that the students of the London medical schools, judging especially by the young men who are entering the services in India, are unsurpassed anywhere, and if properly instructed are capable of giving chloroform with absolute safety. Here we use chloroform for everything, and as a rule we never even extract a tooth, in hospital or private practice, without it, and none of our patients, as far as I am aware, ever runs the smallest risk. It would be absurd to contend that what we do daily in routine practice the men of the English schools cannot do at all. So long, however, as they are controlled and hampered by an unfounded fear of chloroform anæsthetics will remain in their present unsatisfactory state, and surgery will continue subjected to the degrading and throttling thraldom of ether.

I am, Sirs, yours faithfully,

E. LAWRIE, M.B. Edin.,
Lieutenant-Colonel I.M.S., Residency Surgeon,
Hyderabad (Deccan).

Dec. 10th, 1900.

THE DRINKING OF METHYLATED SPIRIT.

To the Editors of THE LANCET.

SIRS,—May I be permitted to draw attention to the ravages which the drinking of methylated spirit, now indulged in to an enormous extent by the poorer classes of all the great towns, brings about amongst its victims. I would also suggest that the time is now opportune to investigate its pathology, and its more characteristic clinical manifestations. Methylated spirit, as now allowed to be sold by the Inland Revenue, consists of about 88 per cent. of alcohol, 62 over proof, 10 per cent. of wood naphtha, and about 1 per cent. of petroleum oil. The addition of the mineral oil was expressly added with a view to prevent its being drunk, but spirit-takers soon discovered that by adding water to the spirit the petroleum oil was separated and could be removed. It generally retails at from 5*d.* to 6*d.* per pint and, containing as it does twice as much alcohol as the best whisky, the drinker is enabled to procure the alcoholic equivalent of half a pint of whisky for three-halfpence. It is quite obvious, then, that the one thing needful in order to obtain an unlimited supply of alcohol for a few pence daily is to acquire a taste for the poisonous spirit, and this is apparently readily cultivated, especially by those who have long learned to seek in spirit a stimulant and not a bouquet.

Cases, although they are numerous enough, where death has followed the use of methylated spirit have usually been classed as due to some form of alcoholism, and even men of considerable experience may be found to deny that they have ever known of a fatal case, short of a history of the habits of the individual. I do not know of any post-mortem signs which would indicate that the methylated and not ordinary alcohol had been used, but the wood naphtha seems to affect the spleen more than is common in cases of mere alcoholism, and the blood seems to stain the serous membranes, as is found after many poisons. The heart muscle seems to become darkened and very friable, and the tendency to general arterio-fibrosis is apparent at a much earlier age than obtains even with alcoholics. Takers of methylated spirit deny the habit with a persistency and an ingenuity which are only equalled by those of a cocainomaniac, and which are infinitely more acute than the excuses of the opium-drinker, whose habits are generally marked on his person. They differ, too, from the mere drunkard in this, that but a small quantity can be taken at a time, and the effects pass away quickly—phenomena which have been already noted in the case of ether-drinkers. Many of the victims are poor students and literary hacks, and unlike purer alcohols methylated spirit does not seem so prone to produce somnolence. The impossibility of early morning sleep and the craving for the spirit with the break of day are marked characteristics, but instead of being heavy, sodden, blear-eyed, stupid, and sick, the victims, even in the earliest morning, are bright, keen, intelligent, active, yet with a yearning for the spirit which might be described rather as a hunger than a thirst. As methylated-spirit-drinking is indulged in to the extent of probably 100,000 gallons per annum, and has doubtless caused infinitely more deaths than arsenical beer, it might be fitting that it should receive some notice at your hands.

I am, Sirs, yours faithfully,

J. C. MCWALTER, B.A., D.P.H., F.F.P.S.

Dublin, Dec. 26th, 1900.

"SOME DISAPPOINTMENTS IN SURGERY."

To the Editors of THE LANCET.

SIRS,—May I add a few remarks to those of Mr. D'Arcy Power in reference to "mental disturbance following a surgical operation" in his interesting paper on Some Disappointments in Surgery in THE LANCET of Dec. 22nd (p. 1789)? It seems to me that none of the three cases he cites from his personal experience is an instance of "post-operative insanity," strictly speaking. His first is "pre-operative," so far as the report shows. The second is most likely "post-anæsthetic," and the third was probably also toxic and septic. In classifying cases, I think those whose "mental condition is clearly impaired from the time of recovery from the anæsthetic," and also those who are evidently septic, should be differentiated from "post-operative" cases pure and simple, in which so far as can be ascertained, the mental disturbance is not due to either the anæsthetic or a septic condition. Sir W. M. Banks and Dr. Macphail have both referred in their recent papers to an article of mine on Post operative Insanity in the *Journal of Mental Science* for January, 1897. The points relating to the action of anæsthetics, sepsis, &c., are, however, more fully discussed in "Cerebral and Mental Symptoms," from which book the article noted was largely taken.

I am, Sirs, yours faithfully.

Cambridge, Jan. 1st, 1901. J. CHRISTIAN SIMPSON.

A POINT IN THE ADMINISTRATION OF NITROUS OXIDE GAS.

To the Editors of THE LANCET.

SIRS,—May I ask for a small space in your columns to try to eliminate during the present century the uncomfortable and pernicious habit of advising a patient "to breathe deeply," "to take a deep breath," "to breathe as if you were blowing on a looking-glass," &c., which has been employed ever since nitrous oxide insensibility has been induced, and seems likely to be with us always. Such a method is perfectly unnecessary, is very disturbing to the patient, and is very much in the way of a comfortable insensibility. I have tried to prevent patients from thinking of their breathing for nearly 40 years, but it happens so often that the patient has been so instructed that I beg once more to call attention to it as at least undesirable and due to want of thought.

I am, Sirs, yours faithfully,

Brook-street, W., Jan. 1st, 1901. TOM BIRD.

"THE TREATMENT OF PULMONARY TUBERCULOSIS."

To the Editors of THE LANCET.

SIRS,—Having read with much interest, and I trust with profit, Dr. Robert Maguire's interesting lectures on the above subject I am delighted to agree with his incisive criticism in a great many particulars. It is time some counterblast was raised against the numerous sanatoria springing up like mushrooms all over the country, the main idea being speculation and the well-being or recovery of the inmates quite a secondary consideration. In this connexion it would be interesting to inquire how many cases are accepted for treatment who are not genuine cases of tuberculosis but who are perhaps allowed to live in that idea and others buoyed up into the false hope of cure who are quite beyond human aid.

No wonder Dr. Maguire makes the remark: "The profession seems to have gone mad on this matter." But it is to be hoped there are some exceptions to this sweeping statement. We all remember the Koch "cure" and the numbers of the profession who rushed to Germany to annex the idea come home and at once float into fame. We know the result, and the open-air treatment will in a short time die, as it has done when tried before. The instance of forced feeding by mutton chops *ad nauseam* will probably be improved upon by mechanical aids, something after the manner of feeding turkeys and cramming fowl. The patient instanced by Dr. Maguire no doubt paid well for his chops but gave a bad return. It would be nearly as sensible to treat juvenile "consumption" with stale bread.

I am, Sirs, yours faithfully,

Dec. 31st, 1900. M.R.C.S.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENT.)

Plague and the Mecca Pilgrimage.—The Benefit to Ceylon of Plague Regulations.—The Epidemic at a Standstill.—The Mortality of the Great Famine.—The Bacillus of Beri-beri.

NOTWITHSTANDING that the European Governments, including that of Turkey, realise the danger of importing plague the Government of India do not think it necessary to prohibit pilgrimage from the unaffected portions of India during the ensuing season. It is said that the Indian pilgrims during last season were subjected at Turkish ports to many vexatious restrictions and consequent hardships, but the Government of India consider it essential that careful precautions should be observed at Indian ports similar to those which were enforced during the past season. Accordingly, the port of Karachi for pilgrims from parts of the north of India and the port of Chittagong for other parts have been determined as the only places where pilgrims may embark for the Haj. No person will be permitted to make a pilgrimage to Mecca this season from any of the infected portions of India—viz., the Presidency of Bombay excluding Sind, the Madras Presidency, the Mysore State, Coorg, the Jullundur District of the Punjab, and Bengal, excepting the Chittagong division.

Ceylon has been peculiarly free from cholera during the past year. The explanation appears to be the following. All outbreaks of cholera can be traced to India and must be introduced, as cholera does not occur spontaneously. The north road coolie route was closed to coolie traffic on Jan. 1st, 1899, in order to guard against plague, but it appears to have had the additional advantage of keeping out cholera. The coolies in former years had to march some 130 miles to their places of employment along the north road, and by the time that they arrived they were generally in such a depressed condition that they readily succumbed to any disease to which they were exposed. Now the coolies have to come straight from the port of embarkation to Colombo and are at once fed and cleansed and then sent to the Ragama camp. On the next day they are sent by train to their destination.

The plague returns for India show little change. There were 1889 deaths for the week ending Dec. 8th, as compared with 2140 deaths for the previous seven days and with 1579 for the corresponding week of 1899. The Bombay Presidency reports a decline from 560 to 329 deaths, and the Mysore State also from 610 to 523 deaths. In Bengal, however, there has been an increase from 798 to 878 deaths, Gaya and Patna and those districts showing the chief development. In Bombay city the returns would make it appear that the plague is about stationary and the same may be said for Calcutta. In both cities, however, there are signs of a recrudescence, more especially in Calcutta where many more suspicious and plague deaths occur than are reported. For the week there were 65 deaths in Calcutta and 70 deaths in Bombay.

Your readers will regret to hear that the Corporation of Bombay have refused to subscribe towards the Pasteur Institute at Kasauli.

The numbers under famine relief have now sunk to about 250,000. Lord Curzon calculates that the famine has cost the parts of India affected about 750,000 lives. As a matter of fact, however, comparatively few died from sheer starvation, although insufficient diet and destitution over a considerable period indirectly caused a large amount of sickness and mortality.

One of the most important communications on the subject of beri-beri appears in the Indian Medical Service paper for December. Captain E. R. Rost, I.M.S., of Burma describes a diplo-bacillus which forms a sort of angle. He has been working on the idea that beri-beri is a rice disease and has found the organism between the starch cells. Several kinds of fermented rice-water are used by the natives and a peculiar yeast which is obtained from Singapore is used to produce them. Captain Rost has also found the same peculiar organism in the blood of beri-beri patients in the cerebro-spinal fluid, and in the serous exudation of the sheath of the sciatic nerve. The organism develops spores and is very active—"wagging one rod in front of the other." In 32 cases of beri-beri the organism was found in every one. It seems to be peculiarly resistant to heat.

Dec. 13th, 1900.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Lord Mayor's Hospitals' Century Fund.

THE Lord Mayor has issued an appeal to the citizens of Liverpool for subscriptions towards a fund which he proposes to call "The Hospitals' Century Fund," with the object of freeing the hospitals from debt. The gross amount of the debit balances of the various hospitals stands at present at about £26,000; and the Lord Mayor is anxious that these adverse balances should be discharged during his year of office, thus enabling the hospitals to commence the century free from debt. The Lord Mayor heads the subscription list with the sum of £200. Already £4039 have been promised towards this laudable object. The Lord Mayor's suggestion is a good one and there is every probability that the requisite amount will be obtained.

Low Death-rate of Liverpool.

At the weekly meeting of the Health Committee of the City Council held on Dec. 27th, 1900, the chairman congratulated Dr. E. W. Hope, the medical officer of health, upon the low death-rate at present prevailing in the city. The death-rate for the past week was equivalent to 18·6 per 1000, as

against 32·1 per 1000 for the corresponding period of 1899. This satisfactory feature in the health of the city is no doubt due to good management and improved sanitation on the part of the health department. 72 deaths took place in public institutions of which 10 were deaths of non-residents. The epidemic of peripheral neuritis still continues in the two workhouses recently alluded to in THE LANCET. I have not heard of any cases having been treated at the general hospitals.

Presentation to the Medical Officer of Health of Rochdale.

At a meeting of the Health Committee of Rochdale Corporation held on Dec. 28th, 1900, Dr. Joseph Henry, J.P., the medical officer of health of Rochdale, was presented by the chairman, on behalf of the members of the committee, with a handsome silver salad bowl on his completing 21 years' service as medical officer of health of the borough. Alderman Hardman, the chairman of the committee, in making the presentation, spoke in cordial terms of the manner in which Dr. Henry had performed his duties as medical officer of health. Some members had been associated with the work of the committee during all the time of Dr. Henry's service, and their esteem for him had grown as the years went on. In accepting the gift Dr. Henry warmly thanked the members of the Health Committee for the kindly thought which prompted the presentation of the gift, which he accepted as a manifestation of the goodwill which existed between the committee and himself. He assured them that he and the members of his family would value the gift as the expression of the good feeling entertained by the committee towards him.

Jan. 1st.

WALES.

(FROM OUR OWN CORRESPONDENT.)

Sanitary Authorities and Water-supplies.

AT the end of 1897 a circular letter was addressed by the Local Government Board to the sanitary authorities in England and Wales directing attention to the subject of the water-supplies of their districts and urging the importance of ascertaining whether the water delivered to consumers was fully protected from all risk of contamination. In many parts of Wales the water-supply is absolutely above suspicion, but in some of the more thickly populated districts epidemics of water-borne typhoid fever are not at all infrequent; yet it is doubtful whether in more than one or two instances any action at all was taken upon the communication from the Local Government Board. In strange contrast to this inertia is the activity displayed by the same authorities upon receipt at the end of 1900 of a circular letter from the Board recommending that samples of beer and other articles of food likely to contain arsenic should be obtained for analysis. Even the County Council of Glamorgan is not exempt from this criticism, for at the last quarterly meeting of this body, when the sanitary committee recommended the appointment of an inspector to act under the direction of the county medical officer of health in procuring evidence of the pollution of water-supplies the recommendation was strenuously and successfully opposed by the chairman of the local government committee, who immediately afterwards proposed that the inspectors under the Food and Drugs Acts be ordered to obtain for analysis samples of beer and of sweets, jam, golden syrup, and canned fruit. This proposition was unanimously carried. The medical officers of health for Cardiff, Rhondda, and Swansea, the three largest towns in Wales, have reported that after investigation they have been unable to obtain evidence either of any cases of sickness due to drinking arsenicated beer or of the presence of arsenic in the beer consumed in their respective localities. In Merthyr and in Blaina, on the other hand, it is reported that suspicious cases have been found of peripheral neuritis which may be associated with beer consumption. In connexion with this subject it is of interest to record that in a newly-erected hotel in Aberdare the pipes along which the beer is drawn from the barrels in the cellar to the beer-engine in the bar are of glass. The pipes rest upon long narrow wooden shelving, and breakages are rare.

A Convalescent Home for Cardiff.

A convalescent home for women and children has recently been established at Cardiff which will relieve somewhat the strain upon the wards of the general infirmary. The building utilised was formerly a private residence and stands in grounds at the outskirts of the town. The entire cost of acquiring the house and of making extensive alterations has been borne by the executors of the late Mr. James Pyke Thompson, and the maintenance of the institution is provided for by the income arising from a sum of money left by him. At present there is only accommodation for 12 patients who will be received without payment. The Cardiff Infirmary is entitled to the use of six beds. Hitherto the Porthcawl Rest was the nearest convalescent home available for Cardiff patients.

An Accident Hospital for Pontypool.

A movement has been started to establish an accident hospital in or near Pontypool to serve the eastern valleys of Monmouthshire, where the need for a properly equipped hospital has long been keenly felt. At a meeting of the promoters it was announced that 7000 workmen had each promised to contribute 1*d.* a week towards the support of the institution.

The Pollution of the Rhymney.

The river Rhymney, which divides Glamorganshire from Monmouthshire, has long been the cause of much concern to the county councils affected. A joint committee of the two councils was established to take united action in preventing pollution of the stream, and as the result of the pressure brought to bear by this committee several districts, notably Caerphilly, Rhymney, and Gelligaer, have been induced to spend considerable sums upon drainage schemes which will result in withdrawing sewage from the Rhymney river and thus lessening the amount of pollution. The work of the committee has been very much hampered because the Monmouthshire County Council declined to delegate to their representatives on the committee their powers under the Rivers Pollution Acts. The Glamorganshire County Council have therefore decided to dissolve the joint committee.

Prayer-meetings at Infected Houses: a Persistent Action in Wales.

At the village of Deri in the parish of Gelligaer, Glamorganshire, an outbreak of diphtheria took place five weeks ago, when five cases, including two deaths, were notified to the medical officer, Dr. W. W. Jones, Merthyr. During the month this number has been increased to 42, including 11 deaths. This abnormal jump caused an investigation to be made, when it was discovered that the people persisted in visiting infected houses, quite disregarding a printed notice prohibiting this wholesale method of spreading the disease. Verbal intimation was given at each house to isolate the premises as far as possible, but the inhabitants were determined to run the gauntlet of all possible risks, and they almost defied the efforts of the officials of the county council to prevent them from calling at any house which was infected. The situation was becoming a serious one. The sanitary inspector, hearing of a contemplated prayer-meeting at a house where a death had taken place, resolved that at all hazards he would prevent this and to do so he remained at the house during the whole of the afternoon prior to the day of the funeral. Towards evening, when he thought the prayer-meeting had been abandoned, he left the house for half an hour. During that time a few friends assembled and the meeting was held. Such determined recklessness on the part of the people of the house and those attending the meeting will not be met by a casual reprimanding, though the inflicting of a penalty for obedience to religious feeling will be very odious. Yet matters have now become so serious that it may be necessary to engage special constables to assist the officers in their endeavours to save the lives of people. It seems curious that such measures should be required in the twentieth century to enforce elementary precautions against the spread of an infectious disease.

Jan. 1st

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Rebuilding of the Royal Infirmary, Glasgow.

THE scheme for the rebuilding of the Royal Infirmary as a memorial of the Queen's Diamond Jubilee has advanced

a stage. At a recent meeting of the committee the report of the assessor on the plans sent in by the competitors was considered, and after a vote had been taken the plan submitted by Mr. James Millar, M.I.A., was adopted. It is perhaps noteworthy that the scheme selected by the committee is not the one placed first in order of merit by the assessor. The scheme adopted provides for the complete reconstruction of the infirmary. Provision will be made for nearly 700 beds and the arrangements in every respect are to be of the most modern type. The estimated cost is £224,500. Towards this sum nearly £100,000 have already been raised, and as the infirmary is the oldest medical charity in the city it is anticipated by some that a scheme which will make the institution one of the largest and most complete hospitals in the kingdom will be enthusiastically supported by the citizens. It is possible, however, that the new scheme for rebuilding may be submitted to some adverse criticism.

Meat Extracts.

Dr. Hugh Galt has presented to the Glasgow Philosophical Society a report on an examination of a number of well-known meat extracts all claiming more or less energetically to be concentrated foods. His verdict is entirely opposed to this claim, as his analyses show that not one of those examined contains more than a small proportion of nutritive matter. Their value, he concludes, is purely a stimulating one, depending entirely on the proportion of meat bases present.

The John Reid Prize.

This prize, which is intended to promote pathological research and is awarded for an investigation conducted in one of the medical schools of Glasgow, has been given for two years to Mr. John McIntyre of St. Mungo's College. Mr. John McIntyre's thesis was on Some Points in the Formation of the Connective Tissue of the Liver, with Special Reference to Hepatic Cirrhosis.

Medical Presentation.

Dr. A. Johnston, medical superintendent, and Miss Adams, matron of the Glasgow Fever Hospital, have received handsome Christmas presents from the nursing staff in appreciation of their efforts to secure the comfort of the nurses and other hospital workers.

Glasgow Corporation and Consumption.

A considerable number of years ago the Glasgow Medico-Chirurgical Society drew the attention of the corporation to the fact that tuberculosis is to be regarded as an infectious disease and urged the authorities to take the steps necessary to prevent the spread of the malady. The memorial in which these considerations were advanced was referred by the health committee to Dr. J. B. Russell, at that time medical officer of health to the city. Dr. Russell made a report on the whole question and this was published and widely circulated. The matter has not been allowed to rest. The corporation has now decided to confer with representatives of the Glasgow medical societies with a view to holding a meeting of the citizens for the purpose of educating public opinion on the necessity for providing in the interest of the public health sanatoria or hospitals for the isolation and treatment of consumptive patients. No doubt this determination has been aided by other influences, but the Glasgow Medico-Chirurgical Society may justly claim the credit of being one of the earliest educators of the public conscience as regards the infectious nature of pulmonary consumption. The original memorial drawn up by the society was signed, among others, by Sir William Gairdner and the late Professor Joseph Coats.

Aberdeen Hospital for Incurables.

At the annual meeting of the managers and subscribers held on Dec. 27th it was reported that on the ordinary income there was a deficit of a little more than £446, but owing to the receipt of legacies the deficiencies of the past and former years had been wiped out, and a favourable balance of £352 odd was left. The number of patients at the close of the year was stated to be 73.

Aberdeen Royal Infirmary.

The appeal issued in connexion with the annual Hospital Sunday collection to be made in the churches on Jan. 6th, 1901, states that between Jan. 1st and Dec. 22nd, 1900, the number of patients treated in the wards was 2596; the number who had received advice and medicine as out-patients was 3597; and the casualty cases (minor accidents) numbered 3534—total, 9727.

New Asylum near Aberdeen.

The Aberdeen City Parish Council have contracted with a local builder to execute the mason work of a new asylum at Kingseat, Newmachar, for the sum of about £30,000.

New Hospital in Banffshire.

Mr. James Campbell, Old Cullen, has intimated that he will be glad to give £3000 towards the cost of an isolation hospital for infectious diseases for Banff and the lower districts of Banffshire, including all the boroughs. The scheme has been favourably entertained by the various local authorities concerned.

Jan. 1st.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Health of Belfast.

AT a meeting of the Belfast City Council on Jan. 1st reference was specially made to the fact that in 1900 there was the lowest death-rate on record in Belfast, 21·3 per 1000. For the period between Nov. 18th and Dec. 15th, 287 cases of zymotic disease were reported—viz., 90 of typhoid fever, 53 of scarlet fever, 72 of simple continued fever, 33 of erysipelas, 24 of diphtheria, 11 of membranous croup, and four of puerperal fever. 231 deaths occurred from phthisis and diseases of the respiratory organs. The number of cases of typhoid fever notified and the deaths therefrom are steadily decreasing. The epidemic of scarlet fever seems to be subsiding. The assistant surveyor has been instructed to furnish an estimate of the cost of erecting an arrangement for the destruction of condemned meat (mainly tuberculous) at the abattoir similar to that in use at the Central Meat Market, London. This is due to the exertions of Dr. H. O'Neill, at whose suggestion a deputation from the market committee of the Belfast Corporation visited various places for the purpose of acquiring knowledge as to meat inspection.

The Royal Victoria Hospital, Belfast.

Dr. W. Calwell (one of the physicians) has been appointed to organise and to take charge of the new department for diseases of the skin; and Dr. R. J. Johnstone and Dr. V. G. L. Fielden have been selected as the new anæsthetists. Dr. Henry O'Neill (on resignation of the post of surgeon to the Royal Victoria Hospital) presented a gift of £100, which is, in accordance with his wishes, being utilised in the purchase of instruments and appliances for the benefit of patients under treatment. Mr. T. S. Kirk has been appointed to take charge of the Throne Children's Hospital, an annexe of the Royal Victoria Hospital.

Jan. 2nd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Cultivation of the Microbe of Soft Chancre.

AT a recent meeting of the Society of Biology M. Besançon, M. Griffon, and M. Le Sourd communicated to the society that they had succeeded in cultivating the microbe of soft chancre with great ease, although up to the present time its cultivation had been found very difficult. They used blood gelose as a culture medium, a substance which M. Besançon and M. Griffon had previously found singularly adapted for the growth of the bacilli of tubercle and of that of gonococcus and also of the coccus of meningitis. The three observers reported that some 24 hours after this culture medium has been inoculated with material from a soft chancre shining round colonies make their appearance which at the end of 48 hours become greyish and opaque. When taken up for microscopical examination they glide away before the platinum loop and when spread out on the slide are difficult to separate. They are seen to be formed of bacilli either isolated or grouped in a mass or sometimes in chains. Their morphology answers to that

which Ducrey, Unna, and Nicolle described as existing in microbes from the pus or sections of a chancre. In the liquid which collects at the bottom of the culture-tubes the microbe develops in a characteristic form—namely, as long slender chains. The organism preserves its vitality and virulence in the blood gelose for a long time. By using a colony taken from a culture of the eleventh generation the three observers were able to reproduce a typical soft chancre. Ducrey's bacillus was found to develop well in the liquid serum of a rabbit. This culture medium became turbid and full of little flocculent masses which under the microscope were seen to consist of bacilli growing in entangled chain forms. But their vitality in this medium was of short duration. M. Besançon and his coworkers consider that blood gelose is evidently the preferable culture medium for this organism, and think it possible that this method of examination may be useful for diagnostic purposes and do away with the necessity for having recourse to inoculation for proof of the nature of a chancre.

State Subvention for the Assistance Publique.

The Assistance Publique of Paris has to dispense very considerable sums of money and these are always increasing, although the receipts hardly increase at all. The Assistance has to provide hospital accommodation for a daily increasing number of patients—it provides alms, food, clothing, fire, and lodging for an ever-growing crowd of poor of a city the population of which is always being swelled by an influx from the country. As it is the municipal funds and the rates paid by Parisians which mainly make up the income of the Assistance it is obvious that Paris and the Parisians provide to a very large degree for the poor of the whole of France, and not merely for those of their own city. This is especially the case with the hospitals where innumerable patients from the country are treated, to say nothing of foreigners. These two classes have enormously increased of late owing to the Exhibition. Numbers of countrymen and foreigners who came to work there preferred to stay in Paris instead of going home, and a number of them, work having stopped, drift into vagabondage and swell the criminal classes. Those who remain honest are very hard put to it, and the funds of the Assistance have been very strained in providing for them. The Municipal Council in view of these facts has passed a number of resolutions, amongst others one to the effect that donations, &c., and work should be reserved by preference for those poor who have lived in Paris for a certain number of years. With regard to the hospitals, M. Gelez gave it as his opinion that Paris could not continue to be a central hospital for the whole of France without the help of the whole country, and that either the State or the Department should contribute. In the budget of the Assistance for 1901 the estimated receipts are 11,000,000 francs below the estimated expenses, and this deficit is in great part due to an expense of 3,500,000 francs incurred by Paris in providing for the provincial poor. The Municipal Council asks that the State should subsidise the Assistance Publique by a sum of 10,000,000 francs per annum.

Episodes of the Small-pox Epidemic.

A Paris medical practitioner has just formulated a complaint dealing with the following circumstances before the Syndicate of Medical Practitioners of the Seine. He was asked to vaccinate a member of a family whose medical attendant he had been for some years past. The patient was a young man who had that day to present himself before the Faculty of Medicine for registration and who had to be provided with a certificate of revaccination. Armed with the certificate of his medical man he repaired to the office of the Faculty and was there told that the certificate was of no use, but that he must go and be again vaccinated at one of the two re-vaccination stations appointed by the Faculty, which he accordingly did, although still bearing on his arms the marks of the vaccination performed that very morning. The council of the syndicate could only say that such proceedings were very annoying for the average general practitioner and many members of the syndicate were anxious to apply to the Faculty of Medicine to have these restrictions removed; but the president of the syndicate reminded the meeting that the Faculty was not responsible for the regulation, which was due to a decree of the Minister of Instruction bearing date Jan. 6th, 1891. Then was the time when protests should have been made. Another interesting case from the point of view of public health arose during the epidemic. The porter of a block of flats was attacked by small-pox. One of the tenants, who happened to be a lawyer, pressed the landlord to have the porter removed to the hospital and to have his rooms disinfected, for, as he said, every tenant passed the lodge every day and so ran great risk of infection. The landlord refused and so the lawyer haled him before the court to recover damages for the dangers to which he and other tenants had been exposed. But before the case came on the landlord gave in, and had the porter removed and his rooms disinfected. This was a regrettable result from one point of view, for the judgment of the court would have been of great interest to sanitarians.

The Sanatorium of Angicourt.

The sanatorium at Angicourt intended for the treatment of tuberculous patients is on the point of being opened. It has taken 14 years to build. I shall in my next letter lay before your readers some details of the working of the institution.

Dec. 31st, 1900.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Prolongation of the Medical Curriculum.

IT is announced that various alterations are to be made in the conditions under which medical qualifications are granted, and a Bill on the subject has been submitted by the Imperial Government to the Federal Council. The existing law, which states that a candidate becomes qualified on passing the State examination, is to be altered as follows: Candidates are to become qualified when they have passed the State examination and spent a year in practical work. A qualification may be refused to candidates who have committed grave criminal or ethical misdemeanours. The Bill provides that the time of study will be five years instead of the present term of four and a half years. After having passed the State examination the candidates have to apply themselves to practical work under the direction of competent physicians and surgeons (probably in hospitals only, though nothing has yet been decided). The fees for the preliminary examination will be raised from 36 marks (£1 16*s.*) to 90 marks (£4 10*s.*), and the fees for the State examination will be 200 marks (£10). The study of medicine, which has hitherto been restricted to the pupils of the "Gymnasia," will now be thrown open to the pupils of the "Realgymnasia" and the "Oberrealschulen." Only abstracts of the Bill have as yet been made public. I will return to the subject when more particulars are known. The prolongation of the curriculum, which hitherto has occupied four and a half years and in future will occupy six years, including the practical year, will make the study of medicine rather expensive, but it is very doubtful whether the present rush to a medical career will be checked by the additional expense, because the area from which students are drawn will be enlarged by the admission of the new class of pupils coming from the "Realgymnasia."

Statistics of the Medical Profession.

Dr. Schwalbe's Medical Directory for 1901 has just appeared. The statistics in this valuable book show that the number of medical men in Germany has again increased, being now 27,374, or 2·6 per cent. more than in the previous year. In 1899 the increase was 3·6 per cent.; between 1894 and 1898 it was from 3·6 to 3·9 per cent, In Prussia there are 16,498 medical men, in Bavaria 3036, in Saxony 2048, in Würtemberg 881, in Baden 1087, in Hesse 683, in Alsace-Lorraine 683, and the remainder in the other States of the Empire. In 1900 there were 5·24 medical men for each 10,000 inhabitants, the proportion being 5·11 in 1899. On an average 5·06 medical men resided in an area of 100 square kilometres (38 square miles) in 1900 and 4·94 in 1899, but this number varied very much in the different parts and provinces of Germany. In Saxony, for instance, there were 13·66 medical men on the above area; in Prussia, 4·73; and in Bavaria, 4·00. In several districts of Prussia the proportion was exceedingly small, being only 0 99 in the district of Cöslin and 1·11 in the district of Gumbinnen. Also in some districts of Bavaria there were only 1·68 medical men on 100 square kilometres. As to the great towns, Berlin has 2360 medical men, as compared with 2314 in the previous

year, being one medical man for each 798 inhabitants; Munich has 694 medical men, Hamburg 585, Breslau 545, Dresden 428, Leipsic 416, Cologne 338, Frankfort 334, and Strassburg 213. The above statistics have been published by Dr. Heiman in the *Deutsche Medicinische Wochenschrift*.

Local Taxation of the Medical Profession.

By a recent law every medical man is required to pay a certain sum to the medical chamber of his district, and the money thus collected is to be used for the expenses of the chamber and for a fund to support distressed medical men of the district or their families. It is left to each chamber to fix the amount to be paid in this way and to decide whether it shall be uniform for all or regulated according to the income of individual practitioners. This question was discussed at a recent meeting of the medical chamber of Berlin and the province of Brandenburg. The committee proposed that a uniform rate of 10 marks (10*s*.) should be paid by every practitioner of the district and that an additional sum should be charged to those earning more than 3000 marks (£150). After a long and animated debate the chamber adopted these proposals. As to the fund for the support of distressed members the chamber was of opinion that a scheme of regulations should be prepared by a special committee and afterwards submitted for the consideration of the chamber.

Dec. 31st, 1900.

ROME.

(FROM OUR OWN CORRESPONDENT.)

The Medicinal Prophylaxis of Malaria.

IT has been abundantly demonstrated that protection against the bites of mosquitoes is an effectual measure in the prophylaxis of malaria. It has also been proved that much may be done to limit the extension of the disease, at any rate in suitable localities, by destroying the mosquitoes themselves both in their larval and adult states. But the difficulties encountered in carrying out such measures in practice efficiently and on a large scale have led several investigators to attempt what is undoubtedly the ideal method of prophylaxis—namely, the immunisation of the human organism against the infection. Various agents have been used more or less successfully with this object, but none with more encouraging results than the medicinal substance euchinin employed by Professor Celli. This is an almost tasteless crystalline derivative of quinine obtained by acting upon the latter with ethyl-chlorocarbonate. It is prepared in tabloids by Zimmer of Frankfort, and is given in doses of half a gramme (seven and a half grains) per diem for adults and a quarter of a gramme for children twice daily before food. Its administration in this way, even when continued for months, does not appear to give rise to any ill-effects and can therefore be begun at the commencement of the malarial season in June and kept up regularly without inconvenience until its termination at the end of November. For these reasons it was selected by Mori[1] for a series of experiments which he has carried out under Professor Celli's supervision during the past season in the Roman Campagna at three places, all with a highly malarial reputation. The subjects of the experiments were selected from six families of peasants and numbered 42 individuals, 16 of whom resided at Amatello, 14 at the Affitti del Gotti, and 12 at the Caldanelle and Lavoriera Bacci. In each of these localities there were other persons who served as controls. Of the first group of 16 subjected to the euchinin treatment 6·25 per cent. sickened, while of the controls 81 per cent. took fever. Of the second group of 14 the percentage affected was 28·57, whilst among the unprotected it was 85·76. (This locality is at all times extremely unhealthy.) Of the third group, numbering 12, none contracted malaria, whereas among the controls 75 per cent. were affected. The total results were therefore as follow. Of 42 persons living in malarious surroundings subjected to the preventive treatment by euchinin only five, or 11·9 per cent., became infected, while of 47 persons not so protected but living otherwise under the same conditions 39, or 82 97 per cent., were attacked. It should be added that in those who took the infection, notwithstanding the use of the euchinin, the disease showed itself in a very mild form easily cut short, except in one case of quartan fever, by ordinary treatment, whereas in those not immunised the infection took severe intractable forms with a tendency to successive relapses.

[1] Relazione sulla profilassi della malaria coll'euchinina del dott. Antonio Mori. Il Policlinico, sezione pratica. An. vii., fasc. 8.

Dec. 29th, 1900.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

A Novel Application of Vaseline in Surgery.

A VERY interesting application of vaseline for surgical purposes has been made by a well-known Vienna surgeon, Dr. R. Gersuny. Without previous experiments on animals Dr. Gersuny made a trial of vaseline injected under the skin or mucous membrane as a substitute for some of the artificial contrivances of the surgical instrument maker. His first case of importance treated in this way was operated on a year ago. The patient was a girl, 18 years of age, on whom a successful operation for cleft palate had been performed, but her voice remained nasal as before the operation; by injecting vaseline under the mucous membrane of the velum palati and uvula an artificial obturator was produced the effect of which was that her speech became normal and even difficult consonants like "g" could easily be pronounced. In this case the submucous injection of the vaseline caused considerable pain for the first two days, perhaps on account of the pressure exerted by it on the sensitive bones of the palate, but the pain soon subsided. The injection has remained in position till now—namely, for a period of more than a year—without any disagreeable consequence, and the compact mass formed by the vaseline has not undergone any change in its size or shape during the whole time. In some other cases where this method was tried no pain resulted from the injection of the vaseline. An injection of cocaine is generally given before the injection of the vaseline. The effect produced by the vaseline—namely, the filling out of a cavity or the formation of an artificial protuberance—remains unaltered for many months. Dr. Gersuny has operated in this way on an Indian lady from Bombay suffering from congenital depression of the nose, for which a plastic operation was not considered advisable by the various surgeons who had been previously consulted. A very important use of this method has been made by Dr. Gersuny in the treatment of incontinence of urine, and a successful case of this kind was shown lately at a meeting of the Vienna Obstetrico-Gynæcological Society. The patient was a woman, aged 25 years, who suffered from vesico-vaginal fistula, the result of parturition. The fistula had been operated on, but the sphincter vesicæ remained inefficient. With a view to the remedying of this latter condition torsion of the urethra had been performed by a surgeon, and as the state of the patient did not improve she had been operated on by Dr. Gersuny himself six times since 1896, but on account of ulcerative processes these operations (torsion of the urethra) did not produce any lasting benefit. In July, 1900, the patient came again under the treatment of Dr. Gersuny with almost complete incontinence of urine. As the urethra had been so much lacerated by the previous operations Dr. Gersuny tried to produce closure of the vesical orifice by an artificial annular mass formed by injections of small quantities of vaseline into the prolapsed folds of the mucous membrane of the bladder. The injections were made through the mucous membrane of the vestibulum and through the vagina in the neighbourhood of the vesical orifice. The total quantity of vaseline injected was 3·3 cubic centimetres. After the operation the incontinence ceased, but in a few days it commenced again when the patient was walking or sitting. A second injection of vaseline was therefore made by which the deposit formed around the vesical orifice was so much thickened that a firm ring projecting into the vagina resulted. After the second injection she was able to retain her urine for some hours: she then complained of tenesmus for three days (she was also suffering from gonorrhœa). But on the fifth day after the second injection of vaseline she had regained control of her urine so that when walking she remained dry for one and a half hours. Four weeks later she could retain her urine for five hours even when walking. The vaseline deposit, which was about as large as a cherry, remained of the same size during the whole period. At the

present time, five months after the operation, the state of the patient has not changed; she can hold her urine for five or six hours when in the erect posture and from 10 to 12 hours when recumbent, and the capacity of her bladder now amounts to 350 cubic centimetres (12 fluid ounces). Dr. Gersuny employs for his injections the unguentum paraffini of the Austrian Pharmacopœia, melting at 40°C. The vaseline is first sterilised by boiling and is injected in a semi-liquid state. It does not produce any inflammation, but it seems that slight proliferation of the connective tissue takes place round it so that the vaseline becomes encysted. The histological changes produced by the injections are now being studied at Dr. Gersuny's laboratory, and experiments on animals are being made for the same purpose. The course of the cases treated up to the present proves that the vaseline remains unaltered in the place where it was deposited, that it does not become absorbed, and that it is without action on the tissues of the body. The size and shape of the vaseline deposit have not changed since the date of the operations, though some of them were performed more than a year ago. The changes in the connective tissue around the injected vaseline seem to be caused by mechanical pressure, and they are somewhat analogous to the very marked effects produced by the chemical action of Professor Lannelongue's injections of chloride of zinc. It is obvious that this method may find a very wide use in surgery, especially for elevating and supporting the skin over unsightly depressions, for the formation of artificial obturators, and for the treatment of various prolapses, as for instance of the rectum. The effect of a pessary might also be produced by circularly arranged injections of vaseline under the mucous membrane of the vagina, as has been shown recently by a case of vaginal prolapsus successfully treated in this way at the gynæcological clinic by Dr. Halban. At Dr. Gersuny's hospital experiments are now being made on the prevention of ankylosis after resections of joints by interposing vaseline partitions between the ends of the resected bones.

Dec. 28th, 1900.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Canadian Beer.

THE alarming news from Manchester in reference to the deaths and wide-spread illness through beer-drinking has caused some little concern to the lovers of that beverage in Canada, and inquiries have been numerous as to whether the same misfortune might not occur here as has occurred in Manchester and its vicinity. The vice-president of the Canadian Breweries (Limited) has, however, given out a statement to the press which will no doubt quiet any alarm that may have been engendered by reports from the mother country. Canada has never adopted the "free mash-tun" principle, and the law here provides that no substitute whatever for malt shall be used, as the duty is levied directly on the malt and no further duties are imposed on the beer produced. In Canada all beer is manufactured exclusively from malt and hops and no substitutes are permitted for these substances under heavy penalties. It is a well-known fact that Canada produces the finest barley grown on this continent and therefore the drinkers of Canadian beers have two substantial guarantees of purity which are said to be absent in England and the United States, the two great countries which have adopted the "free mash-tun" principle—(1) that no substitute for malt is permitted, and (2) that owing to the high duty on malt only that made from the choicest barley may be employed with economy.

New Civic Hospital for Montreal.

Last week representatives from all of the hospitals in Montreal, both French and English, met the city council and perfected plans for the immediate erection of a new hospital for contagious diseases, as the present one is a very antiquated structure. Four pavilions for hospital purposes will be erected with a central administration building. Each pavilion will be of two floors containing the necessary accommodation for about 50 beds, with 12 beds for private cases. There will be provision made for all cases of diphtheria, scarlet fever, small-pox, measles, typhoid fever, and other infectious diseases liable to break out at any time in the city. The administration building will contain the medical officers' apartments, observation-rooms, &c. A fine block of land has already been secured. The control of the institution will be vested in a joint board of nine members, five of whom, including the chairman, will be appointed by the city council, and two by the executives of the English hospitals, while two will come from the French hospitals. All matters of finance and expenditure by this board will be subject to ratification by the city council. The estimated cost will be $100,000, which will be raised by a special loan.

Manual Training Schools.

Through the generosity of Sir William Macdonald of Montreal manual training schools will, after Jan. 1st, 1901, be a part of the public school system in every province in this Dominion. These schools will be established in the following places: Charlottetown and Summerside, Prince Edward's Island; Truro, Nova Scotia; Fredericton, New Brunswick; Waterloo, Knowlton, Bedford, Montreal, and Westmount, Quebec; Ottawa and Brookville, Ontario; Winnipeg, Manitoba; Regina and Calgary, North-west Territory; and Victoria and Vancouver, British Columbia. Arrangements have been made for five instructors in Winnipeg alone, where 1000 boys will take the course. These classes will be made up from the three highest forms in the public schools in the places named; and the teachers, in all about 30, have come, or are coming, from England and the United States under three-year engagements. On Jan. 1st 5000 boys will be taking this course. Sir William Macdonald provides all the equipment of every school and pays the salaries of all the teachers and the cost of maintenance for the three years.

The Smoke Nuisance in Toronto and Montreal.

Toronto has just completed a costly new city hall, and as it is becoming discoloured by the smoke of a large industrial establishment in its immediate neighbourhood the city council has taken up the question of compelling all manufacturers to consume their own smoke. Some 20 years ago Professor Carpenter, the eminent physiologist, visited Toronto and was then very much surprised that a city of such beauty and such salubrity of climate should be befouled, and have the health of its citizens jeopardised, by the ever-pouring out of these clouds of black smoke from the tall chimneys of the great manufactories of the city. Montreal suffers greatly from the same nuisance, and it is understood that the city fathers of that metropolis are to follow the lead of Toronto in maintaining a purer atmosphere for its citizens. Cape Breton is a part of Canada which is now passing through a period of great development through the energy of the well-known Boston capitalist, Mr. Henry M. Whitney. This gentleman believes that the best way of dealing with this smoke nuisance in a satisfactory manner is to provide smokeless fuel, which he is now doing on a large scale for the city of Boston. He has erected 400 by-product coke ovens in which the coal of Cape Breton is converted into a cheap smokeless fuel. He states that the gas, tar, and ammonia which are saved more than pay for the trouble of converting the coal into coke. When this fact becomes to be generally recognised in Canada its cities and towns will produce a purer atmosphere for their inhabitants.

Free Consumption Sanitarium for Toronto.

The National Sanitarium Association which controls the Muskoka Cottage Sanitarium at Gravenhurst has offered to construct, equip, and maintain an institution for the consumptive poor of Toronto, without asking any municipal aid from the city on capital account, with the exception of the ordinary per diem hospital allowance of 40 cents for each patient. The erection of the building will be begun at once and it will be ready in a year for the accommodation at first of 50 patients. This accommodation will be for those patients who are in the very first stages of consumption, and the association proposes to erect the institution in the immediate neighbourhood of the Muskoka establishment. Arrangements have already been made with the Grand Trunk Railway Company for free transportation of 100 patients per annum to and from Gravenhurst, with half rates for all over 100. The advantages for its location in Muskoka are the climate, the site, and the suitability as already demonstrated by the results achieved at the Muskoka Cottage Sanitarium. When this part of the work is under way the association will then take up the question of providing accommodation for advanced cases at

a distance from the city of not more than five or six miles. Toronto was about to submit a by-law to the ratepayers for funds to the amount of $50,000 towards this purpose, but the offer of the National Sanitarium Association will now render this unnecessary.

Providing for the Insane in Ontario.

The Government of the Province of Ontario has lately been coming in for some severe criticism at the hands of the medical and lay press for its failure to provide ample and proper accommodation for the insane of the province. Nearly 100 of these unfortunate people can be found in the common gaols, and it is said that in Toronto alone some 49 lunatics are confined who are awaiting transference to the asylums. These, however, are all full, so the lunatics must continue to be housed with thieves and other criminals. Work is being pushed on at the old Victoria College at Coburg, which, when completed, will accommodate 200 patients, and a new boys' reformatory is about to be erected in Oxford county, when the present reformatory at Penetang will be available for further accommodation for the insane. With this added increase to their accommodation the Government will hereafter endeavour to keep abreast of the growing requirements of this unfortunate class of the community.

A Toronto Physicians' Protective Association.

In its November issue the *Dominion Medical Monthly* advocates the formation of the above association. It states that in Detroit an organisation of this character has been formed and that over 400 of the physicians of that city have signed the roll of membership and that the organisation is proving a great benefit to the profession in that city. Other cities of the United States are said to be following in the footsteps of Detroit; in fact, organisation amongst medical men is in the air across the border. It appears that there has been some quiet talk going on among the members of the medical profession in Toronto tending to the formation of some sort of protective association, though on what lines is not apparent. There is, no doubt, wide room for such an organisation, and it is altogether probable that the near future will see something tangible done in the way of lightening the burdens under which the profession suffers in this city. Toronto is a rather conservative city—an attribute which has to a great extent been incorporated in the medical body—but when professional organisation has proved to be successful in neighbouring cities the benefits to be derived therefrom cannot long be resisted.

Toronto, Dec. 17th, 1900.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Typhoid Fever prevented by a Filtering Plant.

THE city of Albany formerly had an evil reputation because of the prevalence of typhoid fever. It obtained most of the water it used from the Hudson river, which was contaminated by sewage from all the towns and cities along the Mohawk and the Hudson rivers and their tributaries, some of which penetrate into Massachusetts and the border factory towns in the Berkshires. Strangers visiting Albany, many of them members of the Legislature or students attending the schools, sickened and died. No family in Albany of any prudence drank water from the Hudson river unless it had been first boiled and put through a good filter. Thousands of persons never drank any of the water provided by the city but bought spring water which was peddled through the streets. Nevertheless, there were a large number of fatal cases of typhoid fever in the city and Albany suffered in reputation. In 1896 the Board of Water Commissioners changed the intake of water for the city, which drew from the Hudson river opposite the heart of the city and below some of its sewers, two miles further up the river, to a point above all the local sources of pollution, and pumped the water by low-lift pumps to a settling basin, from which it could flow to sand filters and be purified. The water after being filtered is pumped to reservoirs on the hills west of Albany and thence is distributed through the city. A small part of the city is, however, still supplied with the unfiltered water. The report of the first year's results is as follows. The bacterial removal has averaged 99 per cent. For nine months of this year there have been reported to the Board of Health 30 deaths from typhoid fever. Of these, 12 deaths were alien cases—i.e., the attending physician has reported that the patient contracted the disease outside of the city—four cases were "unaccounted for" and occurred in institutions where it was impossible to obtain information concerning them, or else they lived within the city limits, but in localities where they did not have a city water-supply. Of the remaining 14 cases one occurred in the part of the city supplied with unfiltered water, five occurred in the portion of the city supplied with mixed filtered and stream water, and eight occurred in the section of the city supplied with only filtered water. This number of deaths reported, 30, compares favourably with 83 deaths reported for the same months in the year before the filter was put in operation. The average number of deaths for the nine years previously to the construction of the filter plant was 67, so that more than 50 per cent. decrease in the deaths from this disease has followed on the new works.

Bureau of Animal Industry.

This bureau of the United States Government reports that during the year the number of abattoirs and packing-houses receiving the benefit of inspection was 148 in 45 localities, as against 138 in 41 localities in the preceding year. The total ante-mortem inspections of cattle aggregated 53,087,994; the animals rejected, subject to post mortem, were, at abattoirs 5958, and in stock-yards 153,561. The total post-mortem inspections were 34,737,613 and the total carcasses condemned were 61,906. In the microscopic inspection of pork 999,554 carcasses were examined. Of these but 19,448, or 1·95 per cent., were found to contain living trichinæ. The work of preparing serum for treating hog cholera and swine plague and experiments in treatment therewith are continued, with results which, while they do not justify definite conclusions as yet, are sufficiently encouraging to justify continued experiments, including some on entirely new lines. With regard to rabies, the secretary declares that this disease is unfortunately on the increase in the United States and that local authorities in most cases have not efficiently controlled its outbreaks. He also earnestly recommends an inspection of dairy products designed for export. Elaborate work in the investigation of food adulteration has been continued.

Proposed Change in the Management of New York City Hospitals.

The Charter Revision Commission has proposed an amendment which provides that on Feb. 1st, 1902, Bellevue, Gouverneur, Harlem, and Fordham Hospitals, and the Emergency Hospital for Women, shall be taken from the Department of Public Charities and be vested in a board of trustees appointed by the mayor. The city hospitals would, therefore, be brought under the same system of control that prevails in private hospitals.

Massachusetts State Sanatorium for Tuberculosis.

From the fourth annual report of this institution, the first established in this country, the following facts appear. 132 patients remained from one to 19¾ months. In 82 incipient cases 53 patients were dismissed as apparently cured, 28 were improved, and one was not improved; none died. Of moderately advanced cases (40 in all) six patients were dismissed as cured or the disease arrested, 18 were improved, 15 were not improved, and one died. Of the patients in 10 far advanced cases three improved, six did not improve, and one died. The total was 132; of these 59 were apparently cured or the disease was arrested, 49 were improved, 22 were not improved, and two died. Dr. Bowditch, the visiting physician, says, "The chief value of such an institution as this sanatorium is its educational influence upon the community at large. Abundant and gratifying proofs of this are constantly being shown to us by the numerous letters received from former patients, telling us of their improved methods of life and their endeavour to teach their relatives and friends the importance or fresh air, good food, and regular living as the best method for the prevention of disease. The sanatorium is, therefore, in one sense a great educational establishment, and as such should receive the hearty and generous support of everyone who is desirous of combating the ravages of tuberculosis."

Separate Prisons for Tuberculous Convicts.

Dr. W. H. Blake, physician to the board of inspectors of convicts for Alabama, states that the statistics of deaths among the convicts in the Alabama State prisons for the

past 20 years show that for the first half of this period tuberculosis caused 20·3 per cent. of the total mortality; for the latter half it caused 42 per cent. In the penitentiaries of the different States, of the total deaths, the percentage caused by tuberculosis reads thus:—Mississippi, 20 per cent.; Arkansas, 20 per cent.; Florida, 30 per cent.; Ohio, 31 per cent.; Michigan, 33 per cent.; Alleghany County Workhouse, Pa., 33⅓ per cent.; Virginia, 41 per cent.; Kentucky, 42 per cent.; Joliet, Ill., 70 per cent.; Huntsville Penitentiary, Texas, 33 per cent.; Washington, 16 per cent.; Connecticut (1898), 60 per cent.; and in 1897 every death that occurred in this penitentiary was caused by tuberculosis. In the Alabama convict institutions the inmates are not kept in separate cells, but from 50 to 100 are confined together in one large cell. Tuberculous convicts, unless in an advanced stage of the disease, are shut in with the healthy inmates; the consequence is that the prison is to a large extent a death-trap and the mortality from phthisis is increasing. Dr. Blake urges a separate camp for the tuberculous convicts, the further from the other prisons the better, in order to give the non-tuberculous prisoners the greatest possible immunity from the disease. This would give the tuberculous man better treatment and the healthy man a chance to remain well. In this matter the duty of the State is plain—it has the right to deprive the offender of his liberty but it has not the right to deprive him of his health.

Dec. 19th, 1900.

Obituary.

THOMAS TAYLOR, M.R.C.S. ENG., L.S.A.

ON Dec. 23rd there passed away one of the best-known practitioners of East Essex and one of the few now left who have served under the old apprenticeship system. Born in 1819, Thomas Taylor when 15 years of age was apprenticed for five years to Mr. Hester, a prominent surgeon at Abingdon. On the termination of his articles he came to London and entered at St. Bartholomew's Hospital, living whilst there in the house of Mr. Stone, the then medical officer to Christ's Hospital. Here Taylor's love of nature asserted itself, for he did his best to cultivate a window garden. Qualifying M.R.C.S. Eng. in 1842 and L.S.A. in 1843, he shortly afterwards obtained the appointment of house surgeon at the Essex and Colchester Hospital, where he remained till 1853, when, being desirous of settling down, he purchased a practice in the village of Bocking, where he remained for the rest of his life.

Thomas Taylor possessed a strong and attractive personality and was a familiar figure in the district where he lived. He delighted in seizing opportunities for quietly and unostentatiously giving pleasure to others and he was a strong supporter of the Royal Medical Benevolent College, having acted as local secretary for some years. His professional services were highly appreciated, his practice extended over a wide district, his opinion was frequently sought in consultation by his colleagues, and he always kept himself well abreast with the advance of medical knowledge. To his patients he was the same to all alike, gentle and sympathetic; and as he knew the personal history of a large proportion of them and was gifted with sound judgment his advice was often asked on other than professional matters. Taylor's mind was essentially a scientific one; his interests outside his profession were in horticulture, geology, natural history, and microscopy, but particularly the first-named, for his acquaintance with gardening matters and with those interested in the same pursuit was extensive, and there are many gardens scattered over the country containing flowering plants the original stock of which was contributed by him. A few years back he found that he was suffering from glycosuria, on Dec. 20th lung symptoms showed themselves, on the 22nd coma set in, and the end came early and peacefully on the 23rd. The last rites were held on Dec. 27th, when a congregation which filled the parish church of Bocking assembled to express the esteem with which he had been regarded. Mr. Taylor was twice married and leaves behind him a widow, two sons, both in the medical profession, and two daughters, who have each married a medical man.

Medical News.

INFECTIOUS DISEASES IN LEICESTER.—The Sanitary Committee of the Leicester Town Council report that during the past 12 months the following certificates have been received. Diphtheria, 1415; scarlet fever, 797; erysipelas, 215; typhoid fever, 113; puerperal fever, 14; total, 2554.

THE Ipswich *Evening Star* of Dec. 29th, under the heading of "A Testimony to Antitoxin," gives a brief account of a testimonial recently presented to Mr. E. A. Hunt of Colchester in appreciation of his services during an epidemic of diphtheria which lately prevailed in the village of Old Heath. The testimonial was signed by 140 persons and was accompanied by a silver matchbox and a sovereign-case purchased by subscriptions limited to 6*d*.

THE LATE DR. A. LOWE.—Dr. Alexander Lowe died at his residence, Bailey-street, Brynmawr, Breconshire, on Dec. 26th. The deceased, who received his medical education at the University of Glasgow, graduated as M.B. and C.M. in 1882, and shortly afterwards commenced practice in Brynmawr, He was medical officer of health of the Llanelly Rural District Council and district medical officer of the parish of Llanelly. He was also surgeon to the collieries and a certifying factory surgeon for the district. Dr. Lowe, who had been for 18 years in practice at Brynmawr, was very highly esteemed in the town and neighbourhood and much regret is felt there at his early death.

FATAL DENTAL CASE.—An inquest was held at Newport (Mon.) on Dec. 28th and 31st, 1900, upon the body of a collier, aged 21 years, who had died on Dec. 27th at the dental surgery of Mr. H. W. Griffiths, L.D.S. R.C.S. Irel., of Newport, after having had 11 teeth extracted under nitrous oxide gas and ether. According to the report which appeared in the *Western Mail* Mr. Griffiths in his evidence stated that shortly after the operation had been successfully performed the deceased sprang up in the chair and gasped. Mr. Griffiths felt for an obstruction in the throat, but could find none. He applied artificial respiration and a medical man was fetched. A post-mortem examination showed that one of the sponges which had been used was fixed in the windpipe. Mr. Griffiths's female attendant stated that she believed she had taken out all the sponges from the patient's mouth. The jury returned a verdict that death was due to misadventure and that everything possible had been done for the deceased.

IMPORTANT SHIPPING CASE.—On Dec. 28th, at the Gravesend police-court, Henry Parry, the master of the steamship *Montery*, was summoned by the corporation of London, as the port sanitary authority, for an infringement of the by-laws made under the Public Health (London) Act, 1891, in failing to report to the medical officer of health on his arrival at Gravesend a case of dangerous infectious disease—viz., typhoid or enteric fever. Mr. Lewis Noad represented the owners, Messrs. Elder, Dempster, and Co., of Liverpool, and Mr. T. Vickery, the assistant City solicitor, appeared to prosecute on behalf of the corporation. Mr. Vickery, in opening the case, stated that the vessel arrived at Gravesend on Dec. 7th and was visited by the medical officer of health in conjunction with Her Majesty's Customs. In reply to the usual question as to whether all were well on board the master stated "All well" and subsequently signed a declaration to this effect, and further, that there had been no case of sickness during the voyage. On the following day it was found that the fourth engineer had been taken ill with typhoid fever on Nov. 14th and had been under treatment by the surgeon of the vessel since that date with the full knowledge of the master, who had entered the fact in his official log and had also reported it at Havre. The medical officer of health thereupon removed the patient to hospital and disinfected the vessel. These facts were not disputed by the defence and Mr. Noad on behalf of the master pleaded guilty and stated the circumstances under which the offence was committed. The bench imposed a penalty of 40*s*. with costs.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

BARRACLOUCH, H., M.B., C.M. Aberd., has been appointed Assistant Medical Officer to the Lunatic Asylum at Porirua, New Zealand.

BELGRAVE, T. R., M.E. Edin., M.R.C.S., has been appointed Officer of Health to the Abbotts Local Board of Health, West Australia.

BELL, H. T. S., L.R.C.P. Lond., M.R.C.S., has been appointed Acting Visiting Medical Officer, Jubilee Sanatorium for Consumption, Dalby, Queensland.

BLACK, GEO., M.B., M.S. Glasg., has been appointed Medical Officer to the Mokikinui Coal Mines, near Westport, New Zealand.

BLAXLAND, H., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Superintendent, Hospital for the Insane, Gladesville, New South Wales.

BONNIN, J. A., M.B., B.S. Adel., has been appointed a Public Vaccinator for South Australia.

COOKE, T. A. B., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health, Neyland Urban District.

CORLIS, J., M.D., Ch.M. McGill Coll., Montr., has been appointed a Public Vaccinator for the District of Menzies, West Australia.

DUNCAN, WILLIAM, L.R.C.P., M.R.C.S. Edin., has been appointed District Medical Officer, Dover Union, vice J. Gordon, resigned.

ELVINS, R. S., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed District Medical Officer, Easingwold Union, vice W. C. Ellis, resigned.

GARDNER, T. FRED., M.R C.P. Lond., has been appointed Physician to the Royal Boscombe and West Hants Hospital.

GODSON, EDWIN, M.R.C.S., has been appointed Medical Superintendent, Hospital for the Insane, Kenmore, New South Wales.

LAVERY, E. A., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Resident Medical Officer, Newcastle Hospital, New South Wales.

LEMIN, OSCAR, L.S.A. Lond., has been appointed Resident Medical Officer to the St. Marylebone General Dispensary, 77, Welbeck-street, Cavendish-square, W.

MUDGE, JAMES, L.R.C P., L.M. Edin., M.R.C.S., has been appointed Medical Officer of Health, Ludgvan Urban Sanitary District, vice J. Q. Couch, resigned.

MULLEN, W. L., M.D., Ch.B. Melb., has been appointed *pro tem.* Medical Superintendent to the Sunbury Lunatic Asylum, Victoria, Australia.

MURRAY, BABINGTON STEUART, M.B., C.M. Edin., has been appointed District Medical Officer for Bovey Tracey and Ilsington (North Devon).

POOLER, J. R., L.S.A. Lond., has been appointed House Surgeon to the Birmingham and Midland Ear and Throat Hospital.

RIDDELL, JAMES, M.B, B.S. Melb., has been appointed Honorary Medical Officer at the Port Augusta Hospital, South Australia.

RIGBY, HUGH MALLINSON, M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Demonstrator of Anatomy at the London Hospital Medical College.

ROSS, CHISHOLM, M.D. Syd., Ch.M. Edin., has been appointed Medical Superintendent for the Insane, Callan-park, New South Wales.

ROW, L. E., M.D. Brux., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Acting Health Officer at Townsville, Queensland.

RUTHERFORD, A. H., M.B., M.S. Edin., has been appointed Government Medical Officer at Casino, New South Wales, and also Medical Attendant upon the Aborigines at Casino.

WEBSTER, W., M.B., E.S. Glag., has been appointed Assistant Medical Officer to the Lunatic Asylum at Auckland, New Zealand.

WILLIAMSON, W. C., M.D., Ch.M. Irel., has been appointed Medical Superintendent, Hospital for the Insane, Parramatta, New South Wales.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ADELAIDE HOSPITAL, South Australia.—Two Resident Medical Officers for twelve months. Salary £120 per annum, with board, &c. Apply to the Agent-General for South Australia, 1, Crosby-square, Bishopsgate-street Within, London, E.C.

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Church-street, Birmingham.—Assistant House Surgeon. Salary £60 per annum, with apartments and board.

BOROUGH ASYLUM, Portsmouth.—Junior Assistant Medical Officer. Salary £120 per annum, rising by three equal annual increments to £150, with board, lodging, and washing.

BOROUGH OF RICHMOND (SURREY) AND THE HESTON AND ISLEWORTH URBAN DISTRICT JOINT ISOLATION HOSPITAL COMMITTEE.—Resident Medical Officer at the Isolation Hospital for Infectious Diseases other than Small-pox situate at Mogden, near Kneller Hall, Twickenham, unmarried. Salary £200 per annum, payable quarterly, with furnished house, coals, gas, and washing. Applications to the Clerk to the Committee, Hounslow, Middlesex.

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY.—House Surgeon. Salary £80, with board and lodgings in the infirmary.

COUNTY ASYLUM, Gloucester.—Junior Assistant Medical Officer, unmarried. Salary £120 per annum, rising £10 yearly to £150, with board (no stimulants), lodging, and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell, E.—Pathologist and Registrar for one year.

EAST SUFFOLK AND IPSWICH HOSPITAL, Thorofare, Ipswich.—Two House Surgeons, unmarried. Salaries £100 for the senior and £70 for the second House Surgeon, with board, lodging, and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark-bridge-road, London.—Senior Resident Medical Officer. Salary £70, with board and washing.

FISHERTON HOUSE ASYLUM, Salisbury.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and washing.

GENERAL HOSPITAL, Nottingham.—House Physician for two years. Salary £100, rising £10 a year to £120, with board, lodging, and washing.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, London.—Senior House Surgeon for six months. Salary at the rate of £60 per annum, with board, lodging, and washing in the hospital. Also Junior House Physician for six months. Salary at the rate of £30 per annum, with board, lodging, and washing in the hospital.

GUEST HOSPITAL, Dudley.—Senior Resident Medical Officer. Salary £100 per annum, increasing by £10 a year to £120, conditionally, with board, residence, attendance, and washing.

HOSPITAL FOR WOMEN, Soho-square, London, W.—Assistant Physician.

HULL ROYAL INFIRMARY.—Senior House Surgeon for two years, unmarried. Salary 100 guineas per annum, with board and furnished apartments. Also Senior Assistant House Surgeon for not less than one year. Salary £40, with board and lodging.

KENT COUNTY ASYLUM, Barming Heath, Maidstone.—Fourth Assistant Medical Officer and Pathologist for two years, unmarried. Salary £175 per annum, rising £5 a year, with furnished quarters, attendance, coal, gas, garden produce, and washing.

LIVERPOOL DISPENSARIES.—Assistant Surgeon, unmarried. Salary £100, with board and apartments. Apply to the Secretary, Leith Offices, Liverpool.

LIVERPOOL STANLEY HOSPITAL.—Third Resident Junior House Surgeon. Salary £70, with board and washing.

LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—Assistant Surgeon.

MILLER HOSPITAL and ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer for six months. Salary at the rate of £60 per annum, with board, attendance, and washing.

MONKWEARMOUTH AND SOUTHWICK HOSPITAL, Sunderland.—House Surgeon, unmarried. Salary £80 per annum, with board, residence, and washing.

NORTHAMPTON GENERAL INFIRMARY.—House Physician, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Salary £140 per annum, all found except board.

QUEEN'S HOSPITAL, Birmingham.—Resident Surgeon for 12 months. Salary £50, with board, lodging, and washing.

RAMSGATE AND ST. LAWRENCE ROYAL DISPENSARY AND THE GENERAL HOSPITAL AND SEAMEN'S INFIRMARY.—Resident Medical Officer, unmarried. Salary £100 per annum, with furnished apartments, board, and attendance. £10 allowed for substitute during annual holiday.

ROYAL INFIRMARY, Newcastle-on-Tyne.—Accident Room House Surgeon for three months. Salary £25 for that period, with board, residence, and washing.

ROYAL SEA-BATHING HOSPITAL, Margate.—Assistant Resident Surgeon. Salary £52 per annum, with board and residence. Apply to the Secretary, Royal Sea-Bathing Hospital Offices, 30, Charing-cross, London.

SCHOOL BOARD FOR LONDON—EVENING CONTINUATION SCHOOLS.—Lecturers and Examiners in First-Aid and Home Nursing. Qualified practitioners (men and women). Apply to the Clerk of the Evening Continuation Schools Committee, School Board for London, Victoria Embankment, W.C.

SHEFFIELD ROYAL HOSPITAL.—Honorary Physician for Mental Diseases.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies as Certifying Surgeons, under the Factories Act, at Bolsover, in the County of Derby; at Market Bosworth, in the County of Leicester at Barnsley, in the County of York; at Arklow, in the County of Wicklow; and at Penshurst, in the County of Kent.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior Resident House Surgeon, unmarried. Salary £100 per annum, with furnished residence and board.

WEST DERBY UNION.—Resident Assistant Medical Officer for the Workhouse, Rice-lane, Walton-on-the-Hill, Liverpool. Salary £100 per annum, with first-class rations, apartments, &c. Subject to statutory deduction. Apply to the Clerk to the Guardians, Brougham-terrace, Liverpool.

WESTMINSTER GENERAL DISPENSARY.—Honorary Physician. Apply to the Secretary, 9, Gerrard-street, Soho.

Births, Marriages, and Deaths.

BIRTHS.

NEILL.—At 46, Melville-street, Edinburgh, on Dec. 31st, the wife of Charles Neill, M.B., of Ranaghat Medical Mission, of a son.

REYNOLDS.—On Dec. 25th, at Silverhowe, College-park, N.W., the wife of B. Gore Reynolds, M.R.C.S., L.R.C.P. Lond., of a daughter

MARRIAGES.

NEWTON—GRAY.—On Dec. 27th, at Marylebone Presbyterian Church, Upper George-street, W., Duncan Gray Newton, M.B., C.M. Edin., Brook-hill, Sheffield, to Janet Mackinnon, daughter of the late Archd. Gray, of Holland-park, W.

PANCKRIDGE-HOULGATE—On Dec. 27th, at the Church of the Holy Redeemer, Clerkenwell, William Panckridge Panckridge, M.B., to Marie Houlgate.

DEATHS.

BURTON-BROWN.—On Friday evening, Dec. 7th, Dennis, son of F. H Burton-Brown, M.B., B.Ch., 3, Via Venti Settembre, Rome, aged 13 months.

POTTER.—On Dec. 30th, John Baptiste Potter, M.D., F.R.C.P., of George-street, Hanover-square, W., aged 61 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE YARMOUTH PRACTITIONERS AND THE FEES FOR LUNACY CERTIFICATES.

THE members of the medical profession at Yarmouth are well organised and they have made a good fight in regard to the abuses arising out of the medical aid societies. They are now contesting the question of fees paid for certificates of lunacy by the Poor-law guardians. This fee is only half a guinea and the practitioners are demanding a guinea. Recently there was a case of idiocy, but no medical man in the town would give a certificate and the guardians met on Dec. 28th to decide what was to be done. The claims of the medical men were supported by half the board, and the vote on the question resulted in a tie. The chairman, however, gave his casting vote against the proposal that the fee should be raised to one guinea. For the moment nothing further has been done, and, presumably the lunatic is still at large. The question arises whether, out of the many grievances that require redress, this matter is sufficiently serious to fight over. In any case, and in all these contentions, it is very important to secure the sympathies of the general public. Also it is very necessary to make it quite clear that a medical union is not constituted merely for the sake of improving the financial position of medical practitioners. The main purposes are the maintenance of the dignity of the medical profession and the progress of science, because the public at large is, or should be, equally interested with the members of the profession in these matters. Therefore the struggle should be not so much against insufficient remuneration as against those conditions of work which tend to degrade the profession. The practitioners at Yarmouth will, we hope, be able to prove that the public as well as themselves will benefit by the proposed increase in the fees for lunacy certificates.

AN UNDESIRABLE WHISKER.

To the Editors of THE LANCET.

SIRS,—I shall feel much obliged if some of your readers will advise me about the following case. A young lady patient four months ago had an alveolar abscess which she neglected, and the inflammation extended to the cheek, resulting in a large abscess which had to be opened externally. She presented herself the other day with a well-developed whisker on one side of her face. Naturally she is much concerned about this. Would the x-rays be the best mode of dealing with the case, and if so how should they be used? I shall feel much obliged for any suggestions in the matter.

I am, Sirs, yours faithfully,
Jan. 1st, 1901. M.D.

THE CHOICE OF A CEPHALOTRIBE.

To the Editors of THE LANCET.

SIRS,—Will any professional brother specially versed in such matters kindly inform me whether Simpson's cephalotribe (which I possess) would answer every purpose in cases where it should be considered necessary to make use of such an instrument? Dr. Galabin is in favour of Braxton Hicks's form, whereas Dr. Barnes, on the contrary, considers this pattern "too short," but recommends that of Dr. Fancourt Barnes "as the best he has used." Dr. Lloyd Roberts thinks highly of his own invention, whilst Dr. Kidd insists upon there being "no curve" in the instrument; yet these various instruments are all of greater length than Sir James Simpson's.

I am, Sirs, yours faithfully,
Dec. 26th, 1900. G. P.

TOO PERTINENT.

he *Evening News* is responsible for the following story:—

A doctor in the East-end of London had a long blank wall, fronting a big railway station. To him there entered an advertisement contractor with inviting terms for the garden wall as a hoarding. The doctor saw many fees to be had without attendance or medicine. He closed with the offer. But the first morning found a religious maniac had instructed the billposter to affix to the wall, "Thy days are numbered," in letters a foot long. The doctor considered the warning to his patients as too pertinent, and withdrew from the contract.

INCOME-TAX PAYMENTS.

To the Editors of THE LANCET.

SIRS,—With the income-tax at 1*s.* in the pound the amount payable by persons of even small means is very considerable, being one-half more than last year. It is therefore the more necessary to ascertain without delay whether or not it is possible to obtain a reduction in the amount payable, or, where the tax has been paid, a repayment of a portion. As most of your readers who are engaged in business are now ascertaining the amount of their profits for the year 1900, will you allow us to remind them that if such profits show a diminution they may be entitled to the repayment of a considerable portion of the income-tax paid in respect of the same? Many submit to overcharges, having failed on previous occasions to get their assessments reduced. In most cases the reason why they have failed is that they have not furnished proper accounts, while many have neglected to keep any accounts of their business transactions. If proper accounts be kept, or even if a proper cash account be presented (which is very simple by using the "Taxpayer's Cash Book"), there is but little difficulty in establishing a claim. Thousands of people pay taxes for which they are not liable, more particularly those whose incomes are derived from property and investments where tax is deducted before being paid to the recipients, or when dividends are paid "free of income tax." Where the income of the current financial year has all been received, claims can, in many cases, now be made for four years, and the sum repayable might in the case of private incomes alone exceed £42, to say nothing of tax allowed in respect of life insurance premiums even when the income exceeds £700. We shall be glad to advise any of your readers, gratuitously, whether they can make a claim for repayment if they send us full particulars of their incomes and a stamped addressed envelope.

We are, Sirs, yours faithfully,
THE INCOME-TAX ADJUSTMENT AGENCY, LTD.
12 and 13, Poultry, London, E.C.,
Jan. 1st, 1901.

HOW NOT TO DO IT.

A CORRESPONDENT forwards us the following advertisement which was left in the form of a card upon a patient of his at the same time as similar cards from the butcher and the chimney-sweep:—

SURGERY,
——STREET, ——

Legally qualified and experienced Physician and Surgeon.

HOURS.

Mornings, 9 till 11
Evenings, 6 till 9.
Sunday Evenings, 6 till 7.

Moderate fees.

This sort of thing should not be, and we hope that the "Legally qualified and experienced Physician and Surgeon" will make a note of what we have said. For the present we forbear from mentioning his name.

THE PROVINCE OF THE DRUGGIST.

AN inquest was held on Dec. 26th, at West Hartlepool, upon the body of a female child, aged three years. According to the evidence of the mother, the child had an abscess under her arm. For this she consulted "Mr. Clarkson the chemist," who told her to poultice it and also "gave her something to put on the place." The abscess "healed up nicely," but as the general health of the child was not good she went to Mr. Clarkson again who "gave her a bottle." The child seemed to be getting on all right but unfortunately she suddenly died. Mr. Clarkson in his evidence said, according to the report in the *Northern Daily Mail* of Dec. 27th, 1900, from which paper we have been quoting, that "he had not considered the child in any danger whatever. ..... When the mother came to him about the child's general health he gave her a soothing bottle. Judging from what he had seen and from what the mother said he thought death must have resulted from failure of the heart's action." A verdict was returned accordingly. It is not suggested that Mr. Clarkson's "something to put on the place" or his "soothing bottle" did actual harm to the baby, but, judging from the account of the case given by our contemporary, the druggist clearly went out of his province, which is always a very dangerous thing to do.

MEDICAL QUALIFICATIONS.

To the Editors of THE LANCET.

SIRS,—It is, of course, conceded that medical practitioners who have graduated as "Doctors of Medicine" from our different universities are legally entitled to add to their names the letters M.D. and to be styled "Doctors." It is also generally understood that Licentiates and Members of the Royal College of Surgeons are addressed as, and styled "Mr.," but the discussion has so far left undecided what is the proper title of the physician—"Mr." or "Dr." Several dictionaries which give an unprejudiced explanation of the title state that the term "Doctor" is used to denote one who treats diseases by means of internal remedies, and the term "Surgeon" one who practises external remedies or manual operations. Hence from this one would gather that all duly licensed practitioners of medicine as distinguished from surgery have the right to be styled "Doctor." I also venture to think that it is not generally known that the Licentiates, Members and Fellows of the King and Queen's College of Physicians, Ireland, are by virtue of the *original* Charter entitled to add M.D. after their names and to be styled "Doctors." A case to test this right was instituted by the University of Dublin *v.* King and Queen's College of Physicians, and heard before the Master of the Rolls. The decision given by this high legal authority was that although the diploma does not *now* entitle the holders to place the letters "M.D." after their names (which had been previously done since the establishment of the College, whose charter confers "the rights, style, title, and precedence of a Doctor of Physic" on its diplomates), yet in his opinion they had the right to the prefix of "Doctor." Another test case was submitted to the Attorney-General (afterwards the

distinguished Baron Deasy of the Court of Exchequer, Ireland) in 1861 as to whether the L.K. & Q.C.P.I. as such, were entitled to the degree of Doctor of Medicine and to use the letters M.D. after their names. His opinion was as follows: "I think the Licentiates and Fellows, as such, of the King and Queen's College of Physicians, are entitled to the degree of Doctor in Medicine and to use the letters M.D. after their names.—Signed, R. Deasy." Though we have no desire to place "M.D." after our names, yet we wish to assert that we have the legal right to the title and prefix of "Doctor," and that while by courtesy it is also usually extended to those who are physicians, yet they have no legal right to affix the title of "Doctor" to their names in documents, visiting-cards, or door-plates unless the charter of their College confers that right upon them. The whole question is based on the assumption that "Doctor" means "M.D.," whereas, as stated above, in most dictionaries "Doctor" means "physician."

I am, Sirs, yours faithfully,

Dec. 31st, 1900. K. & Q.C.P.I.

THE GIVING OF TESTIMONIALS.

A CORRESPONDENT has sent us two cards received from a masseur. The one bears his name, his address, and an intimation that he is "Certificated in Massage, Electricity, and the Nauheim treatment." The other is a copy of a certificate signed by a medical practitioner of Harley-street who is a graduate in medicine of the University of Cambridge and M.R C.P. Lond. It is worded as follows: "This is to certify that on the termination of a three months' course of Lectures and Demonstrations in Medical Electricity, Massage, and the Nauheim Treatment, Mr. —— [the full name is given] passed an excellent examination, and that he is highly qualified to administer these treatments under medical direction." We think it extremely unwise of any medical man to give certificates of this kind. Of course, there is no harm in a medical man recommending any one whom he considers to be a skilled masseur or administrator of electricity to his patients or to other medical men who may be seeking such a person, but it is not fitting that a masseur should have in his possession for general distribution testimonials recommending himself signed by a medical man. The distribution of such cards as those we have referred to advertises the medical man quite as much as the holder of the certificate. Possibly the medical man in question may not be aware of the abuse of his certificate, but now that we have called his attention to the matter we hope that he will take such steps as he should do.

THE LEGALITY OF BRITISH QUALIFICATIONS ABROAD.

To the Editors of THE LANCET.

SIRS,—I shall be very much obliged if you will kindly inform me what are the necessary conditions of practice in Ontario, Canada, and if a holder of the triple qualification dated 1900 would require to take a Canadian qualification in addition.

I am, Sirs, yours faithfully,

Dec. 28th, 1900. H. M. ROBERTS.

*** Practitioners must be registered by the Council of the College of Physicians and Surgeons of Ontario. In certain cases registration is optional on the part of the Council.—ED. L.

MILNE'S BATTIST AND ABSORBENT RIBBON GAUZE.

MILNE'S battist is a thin but strong waterproof fabric, prepared with india-rubber and intended as a substitute for oiled silk or gutta-percha tissue. The manufacturers claim for it that it is grease-proof and spirit-proof, and can be boiled for two hours without injury, thus rendering the same piece fit for use over and over again. It is said to withstand all antiseptics and to be imperishable and non-adhesive in any climate. Milne's sterilised absorbent ribbon gauze is used for the plugging of wounds and cavities in surgical operations, for which purpose it is made very soft and has a woven edge to prevent fraying. It is supplied in several widths and either medicated or plain as desired. These dressings are made by Mr. John Milne, the Galen Manufacturing Company, Ladywell, London, S.E.

THE QUESTION OF THE COMMUNION CUP.

To the Editors of THE LANCET.

SIRS,—The Vicar of Wragby, the Rev. E. H. Sankey, has written to the *Yorkshire Post* to point out that the danger of infection from the chalice is nothing like so great as that from the universal practice of kissing. "When people," he writes, "are prepared to abandon this it may be worth while to consider the possibility of making some change in the present way of administering the chalice." The Vicar of Wragby forgets that people with sore mouths are not likely to wish either to kiss or to be kissed. Such persons can abstain from kissing, but all cannot abstain from communicating with a good conscience.

I am, Sirs, yours faithfully,

Dec. 29th, 1900. M.B.

HOSPITAL APPOINTMENTS AND ADVERTISING.

IT appears that there was recently a vacancy for the post of surgeon to the Jessop Hospital for Women at Sheffield. Naturally this post is sought after, but we must confess that we were surprised to see in the *Sheffield Daily Telegraph* of Dec. 18th, 1900, an advertisement on page 4 covering one-third of a column in which the candidature, qualifications, and testimonials of a medical man, an aspirant to the post, were set out in full. A similar advertisement from another candidate covering over half a column appeared in the same journal for Dec. 20th, 1900, upon page 1. The gentlemen seeking the appointment were both University graduates, and judging from their testimonials singularly able and intelligent men. But we do not think that for a medical man to state his name, address, qualifications, and the work that he has done, in the advertisement columns of a lay, or, indeed, of any other journal is at all fitting. It is possible that the advertisements were inserted by the board of the hospital, or it may be that it is a rule of the hospital that when a vacancy occurs the candidates should be compelled to advertise in this way. If so, the sooner the rules are altered the better.

Jock.—The amount of public advertisement advisable where a man changes his address and desires to signify this to his patients must be left to the advertiser's taste. We can only say that it should be small and that the issue of a printed notice to all the patients on his books is a preferable proceeding. A newcomer starting in practice should not advertise the fact at all in the newspaper. He has no patients of his own on his books in the locality and the advertisement is therefore directed entirely at those of his fellow-practitioners.

Turicensis.—Dr. Conan Doyle's book "The Great Boer War" will probably meet our correspondent's wants. See our review of this work in THE LANCET of Dec. 22nd, 1900, p. 1815.

J. L.—We do not recommend individual practitioners.

M.B., B.Ch.—There is no harm in accepting the offer.

Victor must consult his family medical attendant.

F.R.C.S. has taken the safer course.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 3rd, 1901.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Dec. 28	28·98	W.	0·08	52	48	47	43	47	Cloudy
,, 29	29·69	W.	0·09	62	45	39	37	39	Cloudy
,, 30	29·83	W.	...	52	51	39	43	44	Raining
,, 31	29·23	N.E.	0·74	52	43	40	43	43	Raining
Jan. 1	29·99	W.	...	43	42	38	37	38	Overcast
,, 2	30·18	W.	0·02	50	45	36	37	37	Foggy
,, 3	30·32	N.	...	43	41	37	40	41	Foggy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

WEDNESDAY (9th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

THURSDAY (10th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

FRIDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

SATURDAY (12th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (8th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—Address:—Dr. E S. Reynolds (Manchester): Recent Cases of Arsenical Beer Poisoning (with lantern demonstration).

SOCIETY FOR THE STUDY OF INEBRIETY (Medical Society's Rooms, 11, Chandos-street, Cavendish-square, W.).—3.30 P.M. Council Meeting. 4 P.M. Dr. A. E. T. Longhurst: Moderate Drinking, can it Injure Health? Visitors are invited to join in the discussion.

WEDNESDAY (9th).—HUNTERIAN SOCIETY (London Institution, Finsbury-circus).—8.30 P.M. Clinical Evening.

THURSDAY (10th).—BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Election of Officers for 1901. Specimens will be shown by Dr. Macnaughton Jones and Dr. Purcell. The President: Valedictory Address.

FRIDAY (11th).—BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION (11, Chandos-street, Cavendish-square, W.).—3.45 P.M. Cases and Specimens will be shown by Mr. Mayo Collier, Mr. Lennox Browne, Dr. Kelson, Dr. W. Wingrave, and Mr. Nourse. Postponed Discussion on Mr. Lennox Browne's Cases of Epilepsy in Relation to Adenoid Growths.

CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Papers:—Dr. Sidney Phillips: A Case of Fatal Pancreatic Cyst of enormous size Simulating Ascites.—Dr. F. E. Batten: A Case of Subacute Combined Degeneration of the Spinal Cord in Association with Pernicious Anæmia.—Dr. C. W. Chapman: A Case of Syphilitic Disease of the Aortic Valve.—Dr. H. Thursfield: Rheumatic Periostitis with Subcutaneous Nodules.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (7th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. F. Payne: Consultation. (Skin.)

TUESDAY (8th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. H. Campbell: Consultation. (Medical.)

WEDNESDAY (9th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—5 P.M. Clinical Lecture:—Mr. M. Morris.

THURSDAY (10th).—CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Mr. Lennox Browne: Obstructions in the Fauces and Naso-Pharynx.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

CHARING-CROSS HOSPITAL.—4 P.M. Dr. Green: Medical Cases. (Post-graduate Course.)

FRIDAY (11th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. R. Lake: Consultation. (Throat.)

During the week marked copies of the following newspapers have been received: *Brighton Gazette, East Daily Press (Norwich), Hull Daily Mail, Dundee Advertiser, Leicester Daily Post, Nottingham Daily Guardian, Wigan Observer, Glasgow Herald, Leeds Mercury, Nuneaton Observer, Bedford Record, Kentish Observer, Midland Counties Herald, Times of India, Pioneer Mail, Cheltenham Mercury, Surrey Leader, Whitby Gazette, Western Mail, Western Morning News, Bradford Observer, Ealing Guardian, Warrington Guardian, Scotsman, Architect, Builder, Citizen, Liverpool Daily Post, Health, Bristol Mercury, Sanitary Record, Yorkshire Post, Hereford Mercury, Poole Herald, Mining Journal, Jackson's Oxford Journal, Birmingham Daily Mail, Beverley Guardian, Normanton Herald, Tewkesbury Record, Belfast Evening Telegraph, Indian Daily News, Rossendale Free Press, Sanitary Record, Towyn-on-Sea Times, Scarborough Post, Northern Daily Mail, Local Government Chronicle, Reading Mercury, City Press, Hertfordshire Mercury, Oswestry Advertiser, Weekly Budget, Montgomery County Times, Blyth News, Alfreton Journal, Local Government Journal, Surrey Advertiser, Australasian Gazette, Wine and Spirit Gazette, Le Courrier de la Presse (Paris), Burton Chronicle, Shrewsbury Chronicle, Ayre Advertiser, Madras Standard, Boston Independent, Crewe Guardian, &c., &c.*

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1900 which was completed with the issue of Dec. 29th, and the Title-page to the Volume, are given in this number of THE LANCET.

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BY P. J. FREYER, M.A., M.D, M.CH.,
SURGEON TO ST. PETER'S HOSPITAL FOR STONE AND URINARY DISEASES.

LECTURE I.

Delivered on Nov. 2nd, 1900.

GENTLEMEN,—To-day I propose considering with you that condition commonly called "hypertrophy of the prostate," an enlargement of the organ incidental to declining years and which frequently causes obstruction to the urinary flow. It is sometimes named "senile" enlargement, a not particularly appropriate description, as the disease, if it occur at all, sets in long before senility in the general acceptation of that term supervenes, and one that men who have scarcely turned middle life sometimes resent as offensive. As the disease is not a hypertrophy as generally understood, perhaps the most appropriate description would be enlargement of the prostate of declining life, but for brevity we will refer to it simply as "enlargement of the prostate."

It will be convenient in the first instance to briefly recall some of the characteristic features of the healthy organ. The prostate is a glandular body which surrounds the neck of the bladder and the adjacent inch of the urethra. In the adult it is of the size and shape of a chestnut, being about one and a half inches broad, one inch long, and three quarters of an inch deep. Its average weight is six drachms. The base is directed backwards towards the bladder, the neck of which it embraces, and the apex forwards, touching the triangular ligament. The under surface, which is smooth and slightly grooved longitudinally, rests on the rectum, with which it is connected by dense fibrous tissue. The prostate consists of two lateral lobes and a median portion placed at the under and posterior aspect of the organ, between the ejaculatory ducts, which perforate the lower part of the gland obliquely before opening into the prostatic urethra. This median portion is, as a rule, a mere transverse band, but occasionally a rounded prominence is formed in this situation even in the healthy organ, forming a true third or middle lobe, which, as we shall presently see, plays an important rôle in enlargement of the gland. It is to be noted that this median portion lies immediately beneath the neck of the bladder, forming, in fact, its floor.

Structurally the prostate is composed of glandular substance and a stroma made up of muscular and fibrous tissues. The glandular substance consists of follicular pouches with ducts, lined with columnar epithelium. The excretory ducts, from 12 to 20 in number, open into the urethra beside the veru montanum. The muscle forms the bulk of the prostate, its function being to eject the glandular secretion, or prostatic fluid, to mix with that from the ejaculatory ducts.

It is now recognised that the prostate is a purely sexual organ. It has a tendency to increase in size in a large proportion of men after the age of 50 years, but the enlargement does not generally declare itself by any marked symptoms till after 55. This rule does not hold good in India, for it is generally recognised by surgeons in that country that decided symptoms of enlargement of the organ manifest themselves in natives as early as at the age of 45 years. It must be borne in mind, however, that the expectation of life in Orientals is about 10 years less than in Europeans—that is to say, a native of India is at 45 years of age comparatively as old a man physically and sexually as a European is at 55 years. Even in Europe we occasionally meet with instances of true enlargement at an earlier age, but they are not sufficiently numerous to invalidate the general rule laid down.

It is estimated from statistics collected by Thompson and others that about 33 per cent. of men beyond 55 years of age are subject to enlargement of the prostate, but not more than 5 per cent. ever suffer from symptoms.

The overgrowth may be uniform in character, the hypertrophy extending equally to all parts of the gland, which thus preserves its symmetry. This is the form of enlargement that is least liable to be attended by symptoms. But any one or two of the three lobes into which the organ may be divided surgically may assume a more pronounced overgrowth than the remaining portion of the gland. Thus there may be a very marked enlargement of one or both lateral lobes, the middle lobe being scarcely prominent, or there may be an outgrowth of the latter to such a degree as to cause obstruction, or even retention, of urine and no enlargement of the general body of the gland be felt through the rectum. It is the enlargement of the middle lobe that gives rise to the most urgent symptoms. Situated as it is immediately beneath the inner orifice of the urethra, even a small nipple-shaped projection of the median portion may give rise to troublesome symptoms by presenting a valvular obstruction to the flow of urine. This lobe has a tendency to grow upwards and inwards into the bladder, pushing the trigone before it and forming a pyramidal tumour with narrow pedicle, which during micturition falls against the urethral orifice, plugging it somewhat after the manner of the glass ball in a soda-water bottle.

If we examine the enlarged prostate histologically we find that all its constituents are invariably increased, though, as a rule, to an unequal degree. It is not a neoplasm—the microscope revealing no new elements; nor is it the result of inflammatory action. It is an irregular hypertrophy of the organ but not of a compensatory character, no useful purpose being served thereby. Sometimes the overgrowth is mainly confined to the stroma, and particularly to the fibrous elements, thus partaking of the character of a fibro-myoma. As a rule, however, hypertrophy of the glandular tissue predominates to such an extent that some authorities regard the enlargement as an adenoma throughout its whole course, as it would seem always to be in the beginning. The most important feature of the enlargement from a surgical point of view is the presence of localised overgrowths with more or less defined capsules, forming the so-called "prostatic tumours," which may occur in any part of the gland. These are always confined within the capsule of the prostate; though, carrying the capsule before them, they may project from its surface as bosses or form polypoid-like outgrowths projecting into the cavity of the bladder and connected with the main body of the organ merely by a narrow pedicle, which, however, is always composed of true prostatic tissue.

The average weight of the normal prostate being six drachms, one weighing seven drachms is regarded as hypertrophied, and the weight may increase to several ounces. In size the enlarged prostate may reach from anything beyond that of a chestnut to that of an orange, or even of a cocoanut. The urethra and bladder will be altered in shape in accordance with the size and form of the overgrowth. The prostatic urethra is invariably lengthened and may attain to four inches, so that 12 or 13 inches of catheter may be introduced before the urine begins to flow. When the lateral lobes are symmetrically enlarged the urethra is compressed from side to side and on section resembles a vertical slit. When one lobe only is enlarged the urethra, being diverted to the opposite side, will be curved laterally. If the median lobe be hypertrophied the urethra will be curved upwards towards the inner orifice, and if it be very large, pyriform, and projecting into the bladder, there will be a channel on either side, the urethra being Y-shaped. When the overgrowth assumes the form of a collar round the neck of the bladder, as it sometimes does, the urethra will necessarily be contracted at this situation.

The prostate being debarred from expansion in front by the triangular ligament and beneath by the dense fascia between it and the rectum, in its enlargement it gradually advances forwards and upwards in the direction of least resistance. The urethra is carried with it and the inner orifice placed on a higher level than the base of the bladder, which remains stationary. A post-prostatic pouch is thus formed in the bladder which is never emptied of urine during the acts of micturition. This remaining quantity of urine, which is termed "residual," gradually increases in quantity as the hypertrophy progresses and the muscular power of the bladder diminishes, owing to the persistent overstrain that the organ is subjected to in order to overcome the obstruction to the flow of urine. In the early stages of the disease there is a compensatory hypertrophy of the bladder walls to overcome this obstruction, but in time, owing to the

constant straining, atony and dilatation ensue, so that the bladder may contain several pints of urine. The walls may become extremely thin, or muscular trabeculæ may develop, between which the mucous membrane bulges outwards, forming saccules of various sizes. In course of time changes occur in the ureters and kidneys from the backward pressure due to the obstruction of the urinary flow—changes similar to those that have already been described as taking place in connexion with stricture of the urethra. Hæmorrhoids and prolapsus ani also occur frequently in connexion with this disorder from the constant straining in micturition.

THEORETICAL CAUSES OF PROSTATIC ENLARGEMENT.

Many theories have been from time to time put forward to account for the enlargement of the prostate peculiar to declining life, none of which, however, can be said to fit completely with all the phenomena attending this disorder. I shall confine myself to stating briefly the two rival views that at present hold the field.

Guyon and the French school generally maintain that the enlargement of the prostate is not a purely local disease; in that it is merely a local manifestation of a constitutional disorder which commences with general arterial sclerosis and ends in fibroid degeneration; that the genito-urinary organs—prostate, bladder, ureters, and kidneys—are liable to undergo this change in a pronounced form, the muscular and glandular structures being replaced by dense fibrous tissue, but that these latter changes are never independent of general atheroma. The enlargement of the prostate and changes already described as taking place in the urinary tract behind are held to be coincident and not related to each other as cause and effect. It is pointed out in this connexion that all the symptoms commonly regarded as the result of hypertrophy of the prostate may occur when there is no enlargement of that organ as a result of sclerosis of the bladder. Against this theory it is urged that the fact that atheroma and enlargement of the prostate occur together is no proof that the latter is the result of the former—as well might cancer and other diseases which are liable to occur during the atheromatous age be attributed to this degeneration; that enlargement of the prostate occurs when there is no such general atheroma of the system; that arterial sclerosis induces atrophy rather than hypertrophy; that enlargement of the prostate frequently commences before the atheromatous period; and that this enlargement always commences as adenomatous overgrowth and not as fibroid degeneration.

The other theory is that propounded by Velpeau, and at present supported by some of the highest authorities in this country and America, notably Thompson and White—viz., that enlargement of the prostate is analogous to fibroid disease of the uterus. In support of this view it is pointed out that the utricle of the prostate is the equivalent of the uterus (and vagina); that the structure of the prostate and uterus are somewhat similar; that there is a great resemblance in structure, position, and mode of growth between the fibro-myomata found in the uterus and the overgrowths that constitute enlarged prostate; and that the disease in both instances sets in when sexual activity is on the wane and does not originate when that activity has completely ceased. In opposition to this view are advanced the facts that the utricle, which is the true analogue of the uterus, takes no active part in the prostatic enlargement and that the uterine tumours commence as fibro-myomata, whereas the prostatic overgrowths originate as adenomata.

One of the most important effects, from a surgical point of view, of the acceptance of Guyon's theory, if carried to its logical conclusion, would be to prohibit the employment of any form of operative interference aimed at the radical cure of the disease—to limit the treatment, in fact, to the palliative kind. Whatever may be thought of the other view, it offers, at any rate, a plausible basis for active interference, as will subsequently appear.

SYMPTOMS.

We now come to the symptoms of enlarged prostate. A man aged over 50 years consults you because (1) he finds that for some time he has suffered from increased frequency of micturition which troubles him more at night than throughout the day; (2) he has some difficulty in starting the stream; (3) there is diminution in the strength of the urinary flow, which instead of being projected in the normal curve falls directly downwards from the meatus simply by its own weight; (4) he strains to propel the urine onwards, but his efforts have little or no effect in strengthening the stream, but, on the contrary, the straining may arrest the flow completely; (5) there is incomplete stoppage, as indicated by dribbling at the end of micturition; and (6) there may be intermittency of the flow due to the ball-valve action of the middle lobe. If the patient does not complain of pain, beyond perhaps an undefined aching about the perineum, and there is no hæmaturia, the case is in all probability one of enlargement of the prostate in a comparatively early stage. It will be observed that none of the symptoms are referable to the prostate itself. They are attributable to interference with the functions of the urethra and bladder caused by changes in the gland which are so gradual that they do not cause pain like inflammation or malignant disease. As the disease progresses, unless relieved by art, all the symptoms are aggravated and others—notably pain and hæmaturia—supervene.

In the early stages of the disorder the increased frequency of micturition is due to some outgrowth at the neck of the bladder which acts as an irritant, like a foreign body, to this the most sensitive portion of the organ. Local congestion or even inflammation of the mucous membrane ensues and this induces further frequency. Later another factor comes into play: a post-prostatic pouch is formed in which a gradually increasing quantity of urine is retained after micturition. This retained urine is, as we have already seen, termed "residual," and the manner in which it causes increased frequency requires some explanation. The bladder is a reservoir capable of containing a certain quantity of fluid, which is voluntarily discharged at convenient intervals. Let us assume that the quantity passed in 24 hours is 50 ounces and that the capacity of the bladder is 10 ounces. It will thus be necessary to empty the bladder at least five times in the 24 hours. But if, the actual capacity remaining the same, a pouch is formed in the bladder containing, say, four ounces of urine that is never expelled, it follows that the *effective* capacity is reduced to six ounces, so that in order to get rid of the 50 ounces that daily flow into it the bladder must be discharged of these six ounces about eight times. As the pouch enlarges and the bladder walls grow weaker the quantity of fluid permanently retained increases and its *effective* capacity diminished, so that eventually micturition has to take place every half-hour or even less. Indeed, this condition may advance to such an extent that the bladder is incapable of discharging any urine whatever, when we have another symptom—viz., continuous dribbling, the urine passing away by day and night as rapidly as it enters the bladder, but the latter always remaining full. The urine passing in this condition is termed the "overflow" and has to be distinguished from "incontinence," a rare occurrence in certain spinal complaints in which the urine runs away from an empty bladder.

The frequency of micturition is, as already stated, worse at night, or rather towards the latter part of the night, and in the early morning on rising—in this respect contrasting with the frequency due to stone, which is always worse in the day time when the patient is going about. Why this should be so has not as yet been satisfactorily explained. It cannot be due to the recumbent position alone, for it does not occur in the daytime if the patient keeps lying down provided he remains awake. It may, as has been suggested, be due to the fact that during the first sleep of the night the bladder is not relieved for a longer period than usual. Distension of the bladder results, with congestion, giving rise to increased frequency which does not subside for some hours till the congestion has subsided.

The urine in the early stages of the disorder is clear and acid. The quantity will probably be increased and the specific gravity be lowered—changes due to fibroid degeneration of the kidneys met with in elderly persons, particularly when prostatic obstruction is also present. As the disease advances the urine becomes cloudy and gives off a fishy odour. Sooner or later the urine has a tendency to decompose, whether as a contingency of catheterism or otherwise, cystitis sets in, and pus is deposited on the bladder walls in thick flakes. This condition is favourable to the formation of phosphatic calculi which are a frequent complication of enlarged prostate, lying in the post-prostatic pouch or in the cysts formed as already described by the bulging-out of the mucous membrane between the muscular trabeculæ.

DIAGNOSIS.

With the presence of symptoms that point to the probable existence of enlargement of the prostate we proceed to verify

our diagnosis by a physical examination of the urethra and rectum.

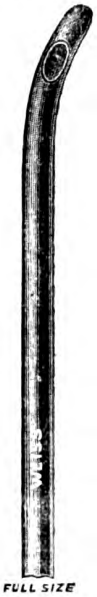
The patient is first directed to pass all the urine he can and we note the strength and general character of the stream. He is then placed on his back on a couch; the glans and foreskin are thoroughly washed with an antiseptic, and a cathether, 13 or 14 of the French scale (7 or 8 E), is slowly and carefully introduced. Our choice of catheters will lie between a Jaques's vulcanised rubber (Fig. 1), a very pliant cylindrical gum-elastic (Fig. 2), or a French coudée (Fig. 3). This latter is, as a rule, the most

FIG. 2.

FIG. 1.

ZE FULL SIZE

FIG. 3.



FULL SIZE

easily introduced. It should be held almost horizontally at first, with the curved point turned downwards, and gradually elevated into the perpendicular position as the instrument passes onwards through the urethra and into the bladder. It should be noted if there be any obstruction at the neck of the bladder and if the end of the catheter rides over it, which would probably indicate an enlarged middle lobe. The quantity of urine drawn off, if any, indicates the amount of "residual" urine. This will vary from a few drachms to three or four pints, according to the stage the disease has reached when the patient first comes under examination. If the quantity be considerable he will express surprise, seeing that he had just previously passed urine and was under the impression that he had emptied his bladder. If the quantity of urine be large the whole of it should not be drawn off at the first interview, lest the patient may faint, or hæmorrhage set in from the vessels of the bladder giving way through loss of their habitual support. If the quantity be moderate a second or third examination should be made to avoid error as to the real amount of the "residual" urine. Before introducing the catheter the hypogastric region should be palpated, for in this way it may at once be recognised that the bladder is distended with urine.

We next make a digital examination of the rectum. The forefinger is greased, the crevice beneath the nail having been previously filled with soap, and introduced slowly and gently to avoid giving pain, and a careful survey of the prostate is made. The extent of the enlargement, if any, should be noted and whether this is general or confined more to one side than the other; whether the contour of the gland is smooth or nodulated; what its consistency, whether soft, indicating adenomatous enlargement, or hard from fibroid overgrowth; also if pressure on the gland gives pain and, if so, to what degree. Much pain with fluctuation would suggest the probability of abscess, particularly if the patient has had fever recently; uterine hardness with nodulation would suggest malignant disease; and a very hard nodule in the substance of the gland accompanied by tenderness on pressure the presence of a calculus in the organ. The finger should pass beyond the gland if possible and sweep the base of the bladder, to ascertain if this is normally soft or hard from sclerosis. Possibly a stone may be felt in the post-prostatic pouch. The examination will be facilitated by making counter-pressure on the abdomen above the pubes with the other hand. The patient should next be placed on his knees on the couch, with his head bent forwards and downwards and the buttocks rendered prominent by the thighs being flexed on the legs. The finger is again introduced and the rectum surveyed as before. This position renders the prostate more prominent in the rectum than the recumbent one and the finger can be introduced farther. The impressions conveyed to the finger in both positions are contrasted and important information may thus be acquired.

Little information with reference to the condition of the middle lobe will be gained by rectal examination. In fact, there may be great outgrowth of this lobe into the cavity of the bladder when no enlargement of the gland is recognised by the rectum. It will, as a rule, be desirable to ascertain the extent and form of the enlargement of the middle lobe. A rough estimate of this can be arrived at by the introduction of a short-beaked sound. When the instrument has entered the bladder the handle is depressed between the thighs and the beak rotated to one side and then to the other, feeling on which side of the instrument the enlarged middle lobe lies and to what extent it projects into the bladder. If the finger be introduced into the rectum whilst the sound is in the bladder a rough idea of the size of the outgrowth may be formed.

Examination of the bladder by the cystoscope will in a large proportion of cases give a still more correct estimate of the size and shape of the middle lobe and as to whether or not it is capable of being removed by operation in a manner that will be described later. At our first visit, however, it will not be advisable to employ either sound or cystoscope. This should always be deferred to a later interview, when the patient should be examined in his own room. At the first visit we rest content with the information gained by the catheter and by rectal examination, taken in connexion with the general symptoms.

After examination the patient should go home and to bed for the day. Indeed, when the case is at all far advanced and the patient feeble it will be advisable to postpone the introduction of even a catheter till he is in his own room.

UNIVERSITY COLLEGE, BRISTOL. — The second annual dinner of the University College Colston Society will take place in the new lecture hall of the college on Jan. 15th under the presidency of Mr. Albert Fry. The guest of the evening will be Sir Michael Foster, K.C.B., M.P., and amongst others Sir William S. Church, Bart., President of the Royal College of Physicians of London, and Canon Ainger will be present. The object of this society is the endowment of Colston chairs in connexion with University College, Bristol, and the assisting of the College in such manner as the committee of the society may approve. In 1900 the sum of £325 was handed to the college by this society.

MEDICAL OFFICERS AT FEVER HOSPITALS.— At the meeting of the Bristol Town Council held on Jan. 2nd the sanitary committee reported that although they had advertised for a resident medical officer for the Ham Green Fever Hospital at a salary of £100 per annum they were unable to obtain any suitable candidate. The committee suggested that the salary be increased to £150 a year, and the town council eventually decided to agree to this proposal, an amendment to increase the salary to £200 per annum being defeated by 38 votes to 30.

PNEUMOCOCCIC ARTHRITIS.

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IT would seem that hitherto no observations have been made in this country of the occurrence of arthritis associated with the presence of the pneumococcus in the affected joint, and although the association is probably a very uncommon one, yet, having regard to the comparative rarity of bacteriological examination of morbid fluids, one cannot but suppose that such cases may have occurred and yet escaped detection. The case herein related led to an examination of the literature of the subject, and as some 30 instances are recorded by continental observers there exists sufficient material to form the basis of a fairly complete picture of the disease. The observations up to 1899 have been collected by Dr. L. Leroux[1] of Paris and are embodied in an excellent monograph. These cases, together with three others recorded during the past year, are analysed in the accompanying table. Following Dr. Leroux no account has been taken of records prior to Weichselbaum's[2] observations in 1888, although not a few instances are scattered through the periodical literature of the past century in which arthritis has supervened during or shortly after an attack of pneumonia,[3] and in some of these the clinical accounts are so definite and conform so closely to what we now know of the course of the affection as to leave little doubt of their pneumococcic nature. Noticeably is this the case in some records of Grisolle.[4] Four patients, he says, who had never suffered from any form of articular or muscular rheumatism were attacked either early in the course of a pneumonia or shortly after its subsidence with acute arthritis, affecting in one case the two shoulders, in another the right knee, in the third the left ankle, and in the fourth the right wrist and the left knee. The last case was examined after death and both the affected joints were distended by odourless pus and the synovial fringes were injected. The joint affection was always a continuous one with none of the fugitive character of true rheumatism, and after discussing the relations with this latter disease Grisolle came to the conclusion that the nature of the two affections was quite distinct. He could not, however, exclude the possibility of a pyæmic process. In this country Wilson Fox,[5] after referring to Grisolle's cases, mentions that of a man of dissipated habits who was under the care of Dr. Russell Reynolds for pneumonia. On the day after the crisis there occurred a slight rise of temperature and an effusion into the knee-joint. The pneumonia resolved perfectly, but the arthritis became chronic. These cases occurred prior to the discovery of the pneumococcus and the true significance of the association could not therefore be appreciated. It was not until 1883 and following years that the infective nature of pneumonia, together with the causative agency of the pneumococcus in that disease, was worked out by Talamon, Sternberg, Fraenkel, Weichselbaum, and other observers, and shortly after the earliest publication of this association was discovered the pathogenic efficacy of the same organism in the production of inflammations of various serous membranes and of the joints. Attacks of arthritis associated with pneumococci were recorded in 1884 and 1885, but the first case to be satisfactorily established was that of Weichselbaum which has been already referred to and which was published in 1888. As in the case recorded in this paper the observation related to a suppurative arthritis of the shoulder.

In April, 1900, I was asked to see a man suffering from pneumonia. I found that the patient was a stout, burly farmer, 51 years of age, of alcoholic habits. When I saw him he was moribund. The account of his illness given to me was that he had been seized 11 days before with rigor, pain in his side, and other symptoms of pneumonia, with physical signs of consolidation confined to the lower lobe of the *right* lung. After a severe attack with much delirium crisis supervened on the sixth day of his disease and for 12 hours his temperature was normal or below and his general condition improved. In the evening of the same day his temperature again rose to 103·5° F., violent delirium set in, and on the following day were detected signs of consolidation at the base of the *left* lung. It was on the fifth day of this recrudescence of the disease that I saw him, when he was in a state of coma-vigil, with a pulse of 160 or over, profusely perspiring, with dilated pupils, and evidently near his end. He was too ill to be examined, but on looking at the front of his thorax I was immediately struck with the condition of his left shoulder. This was swollen, deep red, and œdematous, and slight movement of the upper extremity evoked, even in his well-nigh unconscious state, signs of suffering and remonstrance. I was told that five days earlier, [illegible] delirium, and while struggling with his [illegible]ained that his arm had been twisted. [illegible] complained persistently of pain in his [illegible], being delirious for most of the day. On the following day (the third of the injury and ninth of the disease) his shoulder was noticed to be red and swollen and the least movement led to violent exclamations. The condition had persisted, with the appearance of œdema, until the time of my visit. He died within an hour, and shortly after death, no complete post-mortem examination being possible, the skin over the deltoid muscle was seared with a hot iron and a sterilised needle was thrust into the joint. A syringeful of thick greenish creamy pus was drawn off. This contained an abundance of pneumococci, in pairs and short chains of three or four elements, distinctly encapsuled and in pure culture. The leucocytes were polynuclear. The cocci stained well by Gram's method, and were decolourised by Ziehl's solution and partly decolourised in 1 per cent. acetic acid the capsules were very well shown. Typical dew-drop cultures were obtained on agar and blood serum. Its virulence to mice or rabbits was not tested.

This is a very typical case of the acute suppurative form of pneumococcic arthritis and it illustrates many of the ordinary features of the disease; its occurrence as a complication or immediate sequel of pneumonia, its tendency to affect a joint previously damaged by trauma or disease, a "locus minoris resistentiæ," its acute course, its early suppuration, and its commonly fatal event.

Of the 31 cases analysed in the table 23 patients died and eight recovered. The vast majority of the cases occurred in immediate association with pneumonia (28 out of 31), the symptoms of arthritis usually following the onset of the pneumonia at intervals varying from a few days to a fortnight. In two instances (observations of Boulloche and Oliva) the arthritis is said to have preceded the pneumonia by an interval of three days in one case and seven days in the other. Both these cases occurred in children, being the only instances recorded under 30 years of age, and that of Oliva is so unlike most of the other cases in the table that it will be referred to later in connexion with a case of multiple arthritis which the writer has hesitated to include. Three cases are described as occurring independently of pneumonia. The first, related by Griffon[6] in 1896, was that of a woman, aged 71 years, who was admitted comatose with a temperature of 104° F. and a suppurative arthritis of the right ankle. The joint was incised on the same night, but the patient succumbed on the following day. In addition to extensive suppuration in the ankle and calcaneo-astragaloid joints and the neighbouring synovial sheaths, the necropsy disclosed meningitis of the vertex and a recent vegetating endocarditis. Pneumococci were demonstrated in the pus of the affected joint, in the cardiac vegetation, and in the purulent exudation on the meninges. The second case is related by Widal and Meslay[7] in 1896. The patient, an adult male who was the victim of chronic impregnation with lead, complained of dysphagia and arthritis of the first metatarso-phalangeal joint of the left foot; the joint was painful and slightly swollen, and the skin over it was hot and red. The temperature varied from 101° to 102·2° F. At the end of a fortnight the temperature fell and the pain abated, but the patient was mildly delirious and extremely feeble. There was a localised pericardial

[1] Les Arthrites à Pneumocoques, Paris, J. Rousset, 1899. I have made the freest use of the observations collected in Leroux's work.
[2] Ueber seltene Lokalisationen des Pneumonischen Virus, Wiener Klinische Wochenschrift, 1888, Nos. 28–32.
[3] No reference is made here to the well-known association of pneumonia or of physical signs indistinguishable from those of pneumonia at the left base with acute pericardial effusion in the course of rheumatic fever. In the recorded cases the general symptoms and characteristic sputa of pneumonia have generally been absent and the diagnosis made from the physical signs alone. Cf. Southey: THE LANCET, Dec. 9th, 1882, p. 968; Cheadle: THE LANCET, May 5th, 1888, p. 861.
[4] Traité de la Pneumonie, second edition, 1864. p. 394.
[5] Treatise on Diseases of the Lungs and Pleura, 1891, p. 333.
[6] Bulletin de la Société Anatomique, April, 1896.
[7] Bulletin de la Société Médicale des Hôpitaux, Jan. 24th, 1896.

friction rub. Ten days later he died collapsed and the necropsy disclosed a large purulent pericardial effusion, and a sero-purulent collection in the affected metatarso-phalangeal joint. The pus both from the pericardium and the joint contained the pneumococcus in pure culture. The third case, described as occurring independently of pneumonia, is also related by Widal in association with Lesne.[8] A man, aged 68 years, with good previous health except for slight chronic rheumatism of his smaller joints, was seized quite suddenly with a violent chill, headache, fever, and general aching. The next day he had pains in the whole of his left upper extremity. On the following day, the third of his illness, the pain was localised in the left sterno-clavicular joint and the back of the hand, and these parts were red and swollen. He was admitted on the eighth day when his temperature was 102·2° F., and there was an inflammatory swelling over the left sterno-clavicular joint and on the back of the left hand, especially over the third and fourth metacarpal bones. The swelling of the hand gradually abated, but there was still pain when he was discharged six or seven days later. The sterno-clavicular joint suppurated and a small quantity of pus was drawn on two occasions by a sterilised pipette and found to be pure culture of pneumococci. The swelling was slowly absorbed without incision, but there remained some enlargement of the inner end of the clavicle.

The affection is essentially one of adult and advanced life and is far commoner in males than in females (in 28 cases there were 25 males and three females). Both these peculiarities may stand in relation to the predisposing influence of previous damage of the joint, a point to be considered later with the experimental pathogeny of the disease. The age incidence in 29 cases is as follows: from one to 10 years, two cases; from 10 to 20 years, no cases; from 20 to 30 years, one case; from 30 to 40 years, seven cases; from 40 to 50 years, nine cases; from 50 to 60 years, four cases; from 60 to 70 years, four cases; and from 70 to 80 years, two cases. The arthritis is commoner in the upper extremity than in the lower. In 14 cases the upper extremity alone was affected; in 10 cases the lower extremity alone; in the remaining seven there was a multiple lesion affecting joints of both the upper and the lower limbs. In 19 cases inflammation was confined to a single joint; in the remainder two or more joints were involved—viz., in seven instances two joints, in two cases three, and in one case four, while in the two remaining cases the arthritis was multiple and affected more than four joints. With the exception of the hip the larger joints seem more prone to be affected than do the smaller. Thus, of 41 joints affected the sterno-clavicular was concerned four times, the shoulder eight times, the elbow five times, the wrist six times, the metacarpo-phalangeal once, the hip twice, the knee 12 times, the ankle once, and the metatarso-phalangeal twice. In 27 of the 31 cases, one or more of the joints suppurated, in one case the occurrence of suppuration was doubtful, and in three cases there was no suppuration, the fluid effused into the joint being of a sero-fibrinous character. In two or three cases of multiple arthritis the inflammation has been suppurative in one joint and serous in another; this was noticeably the case in the patients of Rendu[9] and of Duflocq and Ledamany.[10] In all of the cases included in the table, with one exception—that of Oliva—the pneumococcus was demonstrated in the fluid in the joints, but cases have been noticed of suppurative arthritis following on a recent attack of pneumonia in which the pus on examination has proved to be sterile. Widal suggests that these cases may none the less be due to the action of the same virus, but that the coccus may have died out at the time of examination; or alternatively, that in these cases with sterile effusion the arthritis may be due to the action of toxins produced by the same organism elsewhere in the body. It is certain that some toxins of microbial origin can induce a suppurative arthritis when injected directly into a joint—e.g., the sterilised culture of the bacillus pyocyaneus (Charrin), and it is conceivable that the toxins produced by the pneumococcus in the lung may have a selective affinity for the joints in certain cases, particularly for a damaged and vulnerable joint, and produce there an arthritis with a sterile purulent effusion. But if we grant so much, how much more probable does it seem that the same toxin may induce a sero-fibrinous exudation, knowing as we do that under certain circumstances and in certain subjects the exudation induced by the living organism itself is a serous (non-purulent) effusion. It is therefore not unlikely that some cases of infective pseudo-rheumatism, characterised by a serous arthritis with sterile effusion, may depend upon the action of pneumococcic toxin. It is well-nigh certain that all the forms of febrile multiple arthritis now commonly classed together as "acute rheumatism" are not of the same nature, and Triboulet and Coyon[11] in their most recent contribution on the subject suggest that while simple uncomplicated acute rheumatism which responds at once to salicin treatment and in which no organisms of parasitic nature have been hitherto demonstrated[12] is due to the action of some unknown virus, the severe cases complicated by visceral inflammations are due primarily to the same unknown virus as the simple cases characterised by fever and arthritis alone *plus* a secondary infection which may be of several different kinds, the bacillus of Achalme in some cases, staphylococci in others, and the much-discussed diplococcus in the majority. We may perhaps class Oliva's case as one of this kind due to the action of pneumococcic toxin, or we may consider it as an ordinary case of acute rheumatism accidentally complicated with pneumonia. The patient was a child, aged eight years, with the symptoms of a febrile polyarthritis which was very slightly influenced by salicylate of soda. The pyrexia did not abate and on the seventh day pneumonia supervened with pneumococci in the sputa. The pneumonia and arthritis subsided together ten days later.[13] Leroux includes this case among those of pneumococcic arthritis on, as it seems, hardly sufficient evidence, and himself admits that the record is too scanty to allow of a positive judgment. It may, however, be compared with the following case in which there was not only clinical evidence of pneumonia, but an organism, which was probably the pneumococcus, was cultivated from the blood.

A woman, aged 24 years, was admitted to the Royal United Hospital, Bath, on March 1st, 1900. She had complained on Feb. 25th, four days before admission, of pain in her chest and indigestion. On the following day she had shivering fits followed by pain in both hips. She went to bed and the pain on the same day affected her ankles, knees, wrists, and shoulders. She had had rheumatic fever three times previously, the first attack 12 years before, when she kept her bed for a month, and the last five years before. On admission her temperature was 102° F., her pulse was 110, and her respirations were 24. She had a flushed face and perspiring skin, with an acid smell. The tongue had a creamy white fur. Nearly all of the joints in her limbs were painful, tender, and swollen, and the more superficial joints were slightly red. The heart's apex beat was in the fifth space in the nipple-line, with a slightly increased force. There was a systolic bruit at the apex and the pulmonary second sound was accentuated at the base. She was ordered 20 grains of sodium salicylate with an alkali every four hours. She remained in much the same condition for the next few days, her temperature ranging between 99° and 101°, and although the physiological effects of the salicylate were quite pronounced there was no abatement of the severe pain in her joints. She was very wakeful at night, and on the third day of admission she had a dose of nitrate of potash and Dover's powder at bedtime, which was repeated the next night, but each time without sleep. She also had five grains of calomel. Her mental state now became odd. She was mostly taciturn, but at times, especially after the visits of her friends, very excited and seemingly hysterical. A week after admission she still complained of the pain in her joints and of slight headache. She would talk continuously in a loud, slow, jerky tone and repeat some statement, usually on a religious topic, over and over again. She passed her urine several times into the bed but the motions were controlled. The urine contained a trace of albumin. There was no optic neuritis.

The salicylate, which had been reduced to 15 grains three times daily when she became delirious, was now replaced by salicin, 20 grains every three hours. Three

[8] Ibid., May 6th, 1898.
[9] Ibid., June, 1900, p. 679.
[10] Ibid., April, 1897.
[11] Le Rhumatisme Articulaire Aigu en Bactériologie. Paris, 1900.
[12] The seven cases recently related by Poynton and Paine associated with the presence of a diplococcus were all of severe type and complicated by cardiac inflammation—so severe, indeed, that all but one proved fatal. THE LANCET, Sept. 22nd (p. 861) and 29th, (p. 932), 1900.
[13] Oliva: Rhumatisme et Pneumococcie, Gazzetta degli Ospedali No. 60, 1896.

days later the pains were decidedly less, but she still complained of tenderness in both hands. There had been no further incontinence of urine. She was delirious, at times noisy. On this date (March 11th) was first noted a to-and-fro pericardial friction rub. Her temperature was rather higher, ranging for several days from 102° to 104°. There was more albumin in the urine. There was no perceptible enlargement of the spleen and at no time were there any rose spots on the abdomen. Blood was drawn aseptically from a vein at the bend of the elbow. The skin was washed and scrubbed with soap and spirit lotion, with 0·1 per cent. solution of perchloride of mercury, ether, and alcohol. The skin immediately over the selected vein was frozen with a spray of chloride of ethyl, well seared with a red-hot rod, and perforated by the needle of a sterilised syringe. Ten cubic centimetres of blood were withdrawn from the vein and distributed over a number of agar and blood-serum tubes. From these were grown many colonies of a diplococcus described below. The blood serum at ordinary dilutions showed no clumping influence on emulsions of bacillus typhosus. The red discs numbered 3,900,000 per cubic millimetre and the leucocytes 23,000 per cubic millimetre. On March 13th there were incontinence of urine and fæces, continuous delirium, and some complaint of pain in her head. She frequently tried to get out of bed. There was no optic neuritis. Pericardial friction was still well marked, the heart's apex beating more forcibly and as much as one and a quarter inches outside the nipple-line. The

TABLE OF CASES OF PNEUMOCOCCIC ARTHRITIS.

No.	Observer.	Date.	Sex.	Age.	Relation to pneumonia.	Seat of arthritis.	Nature.	Complications and remarks.	Result.
1	Weichselbaum.	1888	?	54	Pneumonia, 3 days before.	Right shoulder.	Suppurative.	—	D.
2	Belfanti.	1889	?	?	Pneumonia, 11 days before.	Right wrist.	,,	—	D.
3	Monti.	1889	?	?	Pneumonia.	Metacarpo-phalangeal.	(?)	—	D.
4	Ortman and Samter.	1890	M.	34	Pneumonia, few days before.	Shoulder.	Suppurative.	Arthrotomy.	R.
5	Macaigne and Chipault.	1891	F.	60	Pneumonia, 4 days before.	Right knee.	,,	,,	R.
6	Chantemesse.	1891	?	Adult	Pneumonia, crisis 2 days before.	Elbow; knee.	Serous.	Meningitis.	D.
7	Boulloche.	1891	M.	5	Pneumonia, 3 days after.	Knee; both elbows.	Suppurative.	—	D.
8	Picqué and Veillon.	1891	M.	36	Pneumonia, 4 days before.	Right knee.	,,	Arthrotomy.	D.
9	Brunner.	1892	M.	52	Pneumonia, 2 days before.	Left wrist.	,,	,,	D.
10	Juvigny.	1894	M.	52	Pneumonia.	Both knees; ankle.	,,	,,	D.
11	Dominici.	1896	M.	44	Pneumonia 12 days before.	Right shoulder.	,,	Peri- and endocarditis; meningitis; lead.	D.
12	Griffon.	1896	F.	71	None.	Right ankle.	,,	Endocarditis; meningitis; arthrotomy.	D.
13	Mercantonio.	1896	M.	71	Pneumonia, some days before.	Right shoulder.	,,	Arthrotomy.	D.
14	Oliva.	1896	M.	8	Pneumonia, 7 days after.	Arms and feet (multiple).	Serous.	Pneumococcus found in sputa only.	R.
15	Vogelius.	1896	M.	38	Pneumonia, 5 days before.	Right sterno-clavicular.	Suppurative.	Arthrotomy.	R.
16	,,	1896	M.	60	Pneumonia some days before.	Hip.	,,	Endocarditis; empyema; lead; arthrotomy.	D.
17	Schabab.	1896	M.	45	Pneumonia.	Left hip and knee.	,,	—	D.
18	Ausset.	1896	M.	41	Pneumonia 7 days before.	Both knees.	,,	Rheumatism 2 years before.	D.
19	Fernet and Lorrain.	1895	M.	56	Pneumonia.	Left sterno-clavicular; right shoulder (recovered).	,,	Endocarditis; meningitis. The arthritis of shoulder subsided before death.	D.
20	Widal and Meslay.	1896	M.	Adult	None.	Left first metatarso-phalangeal.	Suppurative.	Purulent pericarditis; lead.	D.
21	Duflocq and Ledamany.	1896	M.	32	Pneumonia 9 days before.	Both elbows; left shoulder. Right knee.	,, Serous.	Old rheumatic arthritis.	D.
22	Tournier and Courmont.	1896	M.	50	Pneumonia, 6 days before.	Left knee and shoulder.	Suppurative.	Empyema; secondary syphilis.	D.
23	Widal and Mercier.	1897	M.	46	Pneumonia, 4 days before.	Multiple, wrist and ankle.	,,	Endocarditis; typhoid arthritis 25 years before.	D.
24	Galliard and Morèly.	1898	M.	44	Pneumonia, 9 days before.	Right wrist.	,,	Stiffness and grating of joint; arthrotomy.	R.
25	Widal and Lesné.	1898	M.	68	None.	Left sterno-clavicular. Left wrist.	,, (?)	Old chronic rheumatism of small joints of hands and feet.	R.
26	Petit.	1898	M.	42	Pneumonia, 5 days before.	Left knee.	Suppurative.	Meningitis; arthrotomy.	D.
27	Sorel.	1898	M.	48	Pneumonia, 8 days before.	Left shoulder.	,,	Empyema.	D.
28	Leroux.	1899	M.	45	Pneumonia, 9 days before.	Left wrist.	,,	Endocarditis; pleurisy; peritonitis; meningitis.	D.
29	Fernet and Lacapère.	1900	M.	47	Pneumonia, 3 or 4 days before.	Right wrist.	Serous.	Joint stiff.	R.
30	Rendu.	1900	M.	66	Pneumonia, 15 days before.	Left sterno-clavicular. Left knee.	Suppurative. Serous.	Arthrotomy.	R.
31	Cave.	1900	M.	51	Pneumonia, 9 days before.	Left shoulder.	Suppurative.	—	D.

area of dulness was correspondingly increased. The following day the respirations were from 48 to 54 per minute, there were a troublesome, short, hacking cough and deep orange-coloured expectoration, viscid, and teeming with capsuled diplococci which stained by Gram. There were dulness, tubular breathing, and bronchophony at the left base to two inches above the angle of the scapula. On the 16th her condition had remained practically unchanged with incontinence of urine and fæces as before. The pulse was 136, the respirations were 44, and the temperature was 102·5°. She was ordered four grains of quinia salicylas every four hours. On the 20th, four days later, her general condition showed some improvement, the temperature was lower, about 100°. Pericardial friction was still loud. There were dulness and crepitatio redux at the left base. On the 25th the temperature was still about 100°. The patient was better in herself. There was a little delirium at times and she tried often to get out of bed. The delirium was not worse at night. She complained of slight vertical headache. She was quite rational at the time of examination. She took milk well. The tongue was moist, with a thin white fur. The face was rather flushed. The pupils were equal and active. The heart's apex was in the fifth space, half an inch outside the nipple-line. The impulse was still too forcible. The area of dulness was only slightly increased upwards and outwards. There was a scratching to-and-fro friction over the whole præcordial area except at the apex, where a long systolic bruit was the only sound audible. There were still some dulness and moist sounds at the left base. There were swelling, redness, and tenderness of the knuckles of the left hand, especially of the index finger, and effusion into the right knee-joint with some tenderness. The other joints were free. On March 27th the pericardial friction was much fainter and on the 30th it was no longer audible. The pains had disappeared from the joints. By April 5th she was much better, with a normal temperature for four or five days and no pain. There was no pericardial friction. A long swishing systolic bruit was the only sound audible at the apex and the second sound was accentuated at the base. The urine was now free from albumin. From this date except for a slight recurrence of pain and swelling in the joints of the right arm and hand (from April 8th to 11th) her convalescence was uninterrupted.

This case has not been included in the table as one of pneumococcic arthritis because the identification of the organism cultivated from the blood was not established by animal inoculation. Its cultured characters as tested in broth and in milk and on the surface of blood-agar and blood-serum closely resembled those of the pneumococcus, although it seemed to grow rather more freely than does the pneumococcus when recently isolated, and the colonies on agar presented a slight central opacity or haziness. No growth occurred in the cool incubator, which was kept at 21° C. Morphologically it was a diplococcus, the individual cocci also occurring singly and in short chains. The first cultures, obtained on agar with a plentiful supply of blood, showed the presence of a distinct capsule. The cocci were round or slightly oval, measuring from 0·75 to 1 μ in diameter. They were not typically lanceolate. Treated by Gram's method and stained in the aniline-gentian-violet solution or carbol-crystal-violet for from 30 to 45 seconds only, they retained the stain. The organism differed from the diplococcus isolated by Poynton and Paine by this retention of Gram's stain, by its slightly greater dimensions, and by the distinct presence of a capsule. Triboulet and Coyon, however, in describing the morphology of their diplococcus, which Poynton is inclined to regard as identical with his own, say, "*Ce microbe prend le Gram.*"[14] and, again, speaking of cultures in carbonated milk, "*il n'est pas rare de voir parfois un espace clair donnant une apparence d'encapsulement.*"[15] Unfortunately the case occurred at a season of the year when professional work is heavy, and the cultures died out before an opportunity arose for more careful investigation. Still more unfortunately, working alone in a provincial town the crucial test of animal inoculation could not be applied. The case, therefore, is recorded for what it is worth as one of *severe multiple serous arthritis, with pneumonia, pericarditis, and endocarditis, not influenced by salicylate of soda, and with the presence in the blood of a diplococcus closely resembling (? identical with) the pneumococcus.*

[14] Loc. cit., p. 68.

[15] Loc. cit., p. 67.

Turning now from the consideration of these cases of arthritis in which, while the pneumococcus has been demonstrably present and active in other parts of the body, its presence has not been detected even after skilled examination in the effusion of the affected joints, and reverting to the cases analysed in the table, we find that the mortality has been high, not so much as a direct result of the arthritis, but in relation to other distributions of the pathogenic micro-organism. Of the 31 cases 23 patients died and eight recovered. In the eight recoveries are included two of the cases in which the inflammation was non-suppurative, while the remaining six were attended by suppuration. In five of these recovery ensued after incision and drainage of the joint, while in the remaining case a suppurative lesion of the sterno-clavicular joint was absorbed (the case of Widal and Lesné already referred to).

The association of the arthritis with other localisations of the pneumococcic infection is the rule, and this associated lesion is commonly in a vital part and more directly threatening to life than is the arthritis. The occurrence of pneumonia in 28 out of 31 cases has already been referred to. But often there has been a widespread infection of the system by the virus, with malignant endocarditis (six cases), pleurisy and empyema (five), pericarditis (two), nephritis (three), meningitis (six), and peritonitis (one). In some of the cases there has been a simultaneous inflammation of more than one serous membrane; thus in Leroux's case[16] the necropsy disclosed, in addition to recent endocarditis, a purulent meningitis, pleurisy, peritonitis, and arthritis. This tendency to infect more than one serous membrane at the same time is also pronounced in certain cases of tuberculous and common septicæmic infections, and the associated multiple *seritis* has recently received the name of *polyorromenitis*.[17] The morbid anatomy of the joint infected by pneumococci is essentially that of any other septic arthritis. The presence of the pneumococcus has been demonstrated in all the cases included above save one, that of Oliva, in which it was detected only in the pneumonic sputa. Its identification by chemical, morphological, and cultural characters has in most cases been confirmed by inoculation experiments, and the degree of virulence determined for mice or rabbits. The organism is found in the fluid exudation, either free or embedded in the larger cellular elements, and a thin layer of cocci may exist on the free surface of the fibrinous layer which covers the inflamed synovial membrane. The deeper parts of sections, whether of synovial membrane, cartilage, or bone, show as a rule no micro-organisms. The synovial membrane is thickened irregularly and sections stained by Weigert's method show two layers of about the same thickness; the deeper, vascular and infiltrated with embryonal cells embedded in a meshwork of connective tissue (stained pink with picro-carmine); the superficial, consisting of a network of fibrin arranged for the most part parallel to the free surface and containing leucocytes in the interstices. The leucocytes become more and more numerous towards the free surface and the fibrin less evident, except for a thin layer on the surface itself, this layer containing a number of embedded pneumococci.[18]

In mild cases or those of short duration the synovial membrane alone may be affected, with loss of polish and injection of the fringes. But in many the cartilage is partially or completely eroded and the surface of the bone is laid bare. The changes in the cartilages begin with irritative lesions of the capsules and cells, which are swollen and œdematous-looking, while in some of the cells degenerative changes may be observed with disappearance of the nuclei, the ground substance meanwhile remaining intact.[19] In the older or more virulent cases the changes are much more destructive, the ligaments and cartilages being completely destroyed, as also in some cases the articular ends of the bones. Pus may perforate the capsule and penetrate several inches along the inter-muscular planes or the sheaths of tendons. In the case of Picqué and Veillon[20] it tracked upwards from the knee for six inches along the femoral artery and downwards between the muscles of the calf. One can well understand that in cases which eventually recover the joint is often left with adhesions or

[16] Loc. cit., pp. 86–94.

[17] Cf. Dr. Frederick Taylor, Brit. Med. Jour., vol. ii., 1900, p. 1693.

[18] Macaigne et Chipault: Remarques sur deux cas d'Arthritis à Pneumocoques, Revue de Médecine, 1891, p. 749. Abstracted in the Practitioner, vol. i., 1892, p. 127.

[19] Widal, in Brouardel's Traité de Médecine, vol. ii., p. 785.

[20] Archives de Médecine Experimentelle, January, 1891, p. 68

complete ankylosis. The milder cases with serous effusion may, however, leave behind little evidence of the preceding inflammation, and the function of the joint may be perfectly restored.

Reference has already been made to the fact that the arthritis is especially liable to be located in a joint previously damaged, whether by disease or mechanical injury. In the case herein recorded the association with a violent twist of the shoulder-joint was direct and immediate. In two other cases in the table there is the story of a fall on the affected joint shortly before the attack, in one case the shoulder and in the other the knee being affected. One patient had suffered from acute rheumatism, three from rheumatism in a chronic form, and in one of these, while the preceding rheumatism affected the knees and feet only, the pneumococcic arthritis affected the knees.[21] Two other cases were impregnated with lead, in one with the definite discovery of uratic crystals in the cartilage of the affected joint, and one patient had previously suffered from arthritis following typhoid fever. Thus, 10 cases out of 31 gave direct evidence of the situation of the infection in a previously damaged joint. This fact is of interest when we compare it with the experimental investigation of the pathogeny of the affection in animals.

To begin with, we may fairly assume, in the absence of any evidence of external inoculation of the joints, that the virus is conveyed thither by the blood, and there is ample proof of the possibility of this mode of infection. Indeed, it is notorious that in the later stages of severe pneumonia, practically in all cases that prove fatal, the pneumococcus can be directly cultivated from the blood, and the writer has succeeded in doing so in several instances. In these the natural barrier to the production of septicæmia set up by the fibrinous exudation in the alveoli has been broken through with a resulting general infection. The virus circulating in the blood stream, a medium generally unfavourable to the prolonged vitality of parasitic germs, will naturally tend to settle and develop in any part of the economy where the natural defensive mechanisms of the organism are weakened by injury or disease, that is to say, in any *locus minoris resistentiæ*. Widal thus expresses himself on this head[22] "Clinical experience supplies many instances of damage to the joints from internal disorders serving as a gathering-ground for infection. The preceding articular lesions are sometimes clearly in evidence, such as arthritis sicca or the arthropathies of tabes or syringomyelia which become infected by various organisms. Here the predisposition to infection is favoured by the nerve lesion. The experiments of M. Hermann[23] have shown that section of the sciatic nerve predisposed to the localisation of staphylococci circulating in the blood in different parts of the limb which was deprived of its innervation (joints, bone marrow, bursæ, and cicatrices). Recently Kasparek has repeated these researches with cultures of staphylococci, streptococci, and pneumococci[24] and has shown that in animals killed after intravenous injection of the culture, pus containing the injected microbe was already present in the ankle-joint and bone marrow of the tibia on the side of the nerve lesion at the end of 24 hours. In the limb whose nerve was intact, on the other hand, there was complete absence of suppuration or, at the most, the joint contained only a few micro-organisms. Most frequently, however, the explanation of this gathering-ground is not to be discovered, though in some cases careful investigation reveals an unexpected cause. Thus I have recently observed at the Hôpital Beaujon a mon-arthritis of the left first metatarso-phalangeal joint in a confirmed victim of lead impregnation who was attacked by a primary pneumococcal purulent pericarditis. At the autopsy two or three drops of sero-purulent fluid, containing pneumococci in pure culture, could be collected from the joint. By the naked eye no gouty lesion could be detected, but microscopic examination revealed the presence of crystals of urate of soda in the articular cartilages. This solitary localisation in a small joint not usually liable to infection was only apparently fortuitous. The previous uratic deposit led to the succeeding infection. In a word, in this patient attacked by pneumococcic infection the determination to this particular joint was of a 'professional' nature and should be sought in the saturnism which produced the uratic deposit." The same point, together with other details of interest, is brought out by various experiments with the pneumoccus alone. The observations of numerous investigators may be summarised as follows:—1. The injection of a virulent culture of the pneumococcus directly into a joint of a susceptible animal is almost invariably followed by acute suppurative arthritis.[25] 2. The subcutaneous injection of virulent cultures after the previous excitation of an aseptic inflammation in a joint, whether by direct injury or by the injection into the joint cavity of essence of turpentine, gives varying results, in many cases negative (Gabbi), in many positive (Ausset, Zuber). 3 The intravenous injection of virulent cultures with associated aseptic traumatism of a joint leads to arthritis much more certainly than do injections by the subcutaneous method. Finally, Bezançon and Griffon[26] have succeeded in producing an experimental pneumococcic arthritis by modifying the resistance of the animal experimented on in relation to the virulence of the pneumococcus. They find that if a rabbit is first *partially* immunised by the injection of cultures five or six days old and consequently of diminished virulence, and after a few days a full dose of a virulent culture is injected, local lesions are produced rather than a general septicæmia, and especially are these local lesions apt to appear in the joints as pneumococcic arthritis. Leroux, who has admirably summarised these experimental investigations[27] sees in this arthritis after partial immunisation a correspondence with the clinical experience that arthritis usually supervenes after a pneumonia has run its course or towards the end of an attack, when a condition of greater or less immunity has been acquired.

We can deal very briefly with the clinical characters of pneumococcic arthritis. The symptoms may vary in severity from pain and slight swelling limited to a single joint to an intense inflammatory œdema of the whole neighbourhood of the articulation or of a whole limb, with severe pain, heat, and redness, with abnormal mobility from destruction of the ligaments, and with grating of the bared surfaces of the bones. The fever is generally high (from 102° to 104°). The nature of the arthritis can be determined only by its association with pneumonia or other pneumococcic infection and by bacteriological examination of the joint contents. The prognosis is grave both as regards danger to life and the ultimate restoration of function to the joint—in the former respect on account of the extreme frequency of constitutional infection by the pathogenic organism and its characteristic localisations in the endocardium, meninges, and other tissues previously specified. In the cases that recover progress is slow, extending over many weeks, and the function of the joint is as a rule permanently impaired.

Little that is special need be said with regard to the treatment of this particular form of arthritis. In suppurative cases—which, as we have seen, comprise the majority—there can be no hesitation in practising aseptic incision of the joint with flushing, drainage, and fixation, as in any other acute suppurative arthritis. Those cases in which the effusion, drawn off by a sterilised syringe, has proved to be serous or sero-fibrinous in character have generally been treated by fixation on a splint with moderate compression by a bandage over cotton-wool. But even in cases of serous effusion it may be questioned whether an arthrotomy for the removal of the morbid products, avoiding important ligaments and tendons, would not be followed by a speedier cure and more favourable result as regards the ultimate restoration of function to the joint; while at the same time one possible source of generalised infection would be largely removed. In any case convalescence is apt to be tedious and prolonged with much stiffness and adhesion in and about the articulation. This condition must be treated on general principles, by massage, by douches and other hydrotherapeutic measures, or by hot-air baths, and when it seems necessary by forced movements of the joint; in all cases followed by suitable exercises for the restoration of wasted muscles and the preservation of the mobility that has been gained.

Bath.

[21] Ausset: Bulletin Médical du Nord, April 24th, 1896.
[22] Loc. cit.
[23] Annales de l'Institu Pasteur, April, 1891.
[24] Wiener Medicinische Wochenschrift, August 8th and 15th, 1895.
[25] Gabbi: Lo Sperimentale, 1889; Cornil, &c.
[26] Société de Biologie, July 22nd, 1899.
[27] Loc. cit., pp. 98-105.

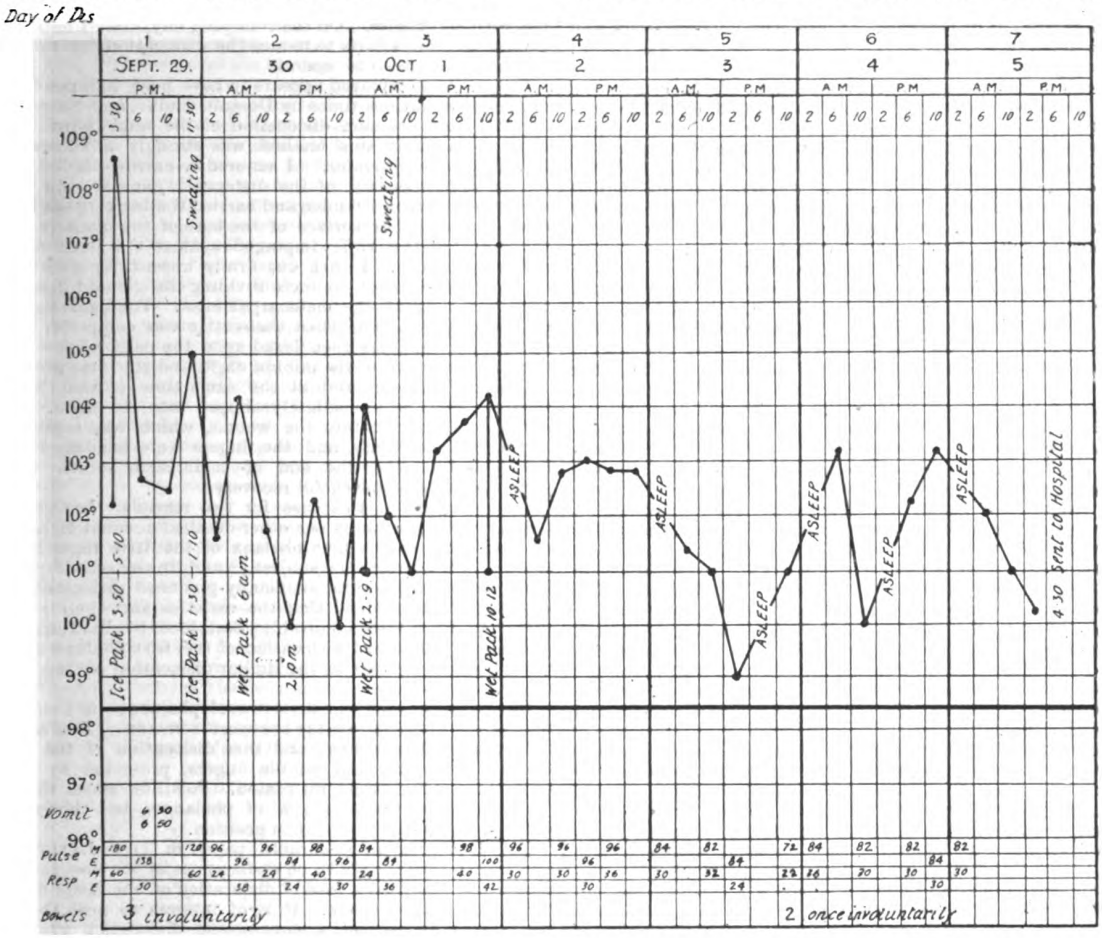
HEALTH OF CARDIFF.—The death-rate of Cardiff during 1900 was at the rate of 13·9 per 1000, which is the lowest of the recorded rates for the 33 great towns.

A CASE OF SIRIASIS.

BY A. E. GRIFFIN, M.R.C.S. ENG., L.R.C.P. LOND.

THE following case occurred in my practice on board ship while passing down the Red Sea. I have adopted the nomenclature of Dr. Sambon and Dr. P. Manson for the condition, described under many different names, of intense pyrexia developed by prolonged exposure to a heated atmosphere, and which is not to be confounded with that of simple "heat exhaustion." Numberless theories have been propounded as to its causation and Dr. Sambon in 1898 suggested that the condition was of microbic origin and he has since stated that the micro-organism has been isolated by foreign observers. In his paper he mentions the fact that stokers on large steam-vessels never show symptoms of siriasis and also suggests that the disease is contracted while coaling ship or stopping along the Red Sea coast.

On Sept. 29th the assistant engineer, a man aged 25 years, had been working in the engine room at a temperature of 114°. He was in good health ate a hearty dinner at one o'clock, went below at 2 P.M. to finish plugging a joint on the top of a boiler, where the temperature was probably 140°, came up at 2.15 P.M. and went to his cabin. At 3.30 P.M. he was found lying unconscious half out of his bunk, still in his boiler suit. When I was called I found the condition of the patient to be as follows: He was unconscious, his limbs were flaccid, his face was cyanosed, his skin was dry and burning to the touch, the pupils were pin-point, all reflexes were lost, the temperature in the axilla was 108·6°, the breathing was shallow and frequent (about 60 to the minute), and the pulse was 180, thin and small. I packed him in an iced sheet, with small pieces of ice round the chest and the neck, and applied ice to the head at 3 40 P.M., and at 3.45 P.M. I injected 20 minims of solution of digitalis over the præcordial area, repeating the same at 4.20 P.M. and again injecting 10 minims at 4.40 P.M. The temperature was taken every 20 minutes in the rectum. He reacted well. He defecated



In the case now reported there seems to be no evidence of focal lesion. The sufferer was an Englishman of good physique, temperate, and a "first-class life," but he had never been in the tropics or at sea before. He was an assistant engineer, and may therefore truly come under the above-named category. After an hour's stay at Suez, where we did not coal, we proceeded direct to Aden, having no communication with the shore meanwhile. It is interesting to note the recovery after a temperature of 108·6° F. Gihon states that there had been only two cases of recovery when the temperature had reached 109°, and seven when 108° and over had been registered out of the several hundreds of cases recorded in America. In the case which I am about to describe I followed Chandler's treatment, as recorded by Manson.

three times involuntarily during the first half hour. The corneal reflex returned at 4.40 P.M. when the temperature had fallen to 104°, the pulse being 122, and the respirations 30. At 5.10 P.M. he moved his arms and legs and became semi-conscious, and as the temperature was then 102·2°, the pulse 120, and the respirations 30 he was removed from the ice-pack, and placed in blankets. At 5.30 P.M. there were paroxysmal movements of the arms and legs. At 6.10 P.M. the temperature was 102·8°, the pulse was 138, and the respirations were 30. The patient was then cold-sponged. At 6.30 P.M. he vomited a large undigested meal, with much frothy mucus, and at 6.50 P.M. he again vomited. At 8 P.M. there were slight convulsions of the limbs. At 9 P.M. the temperature was 103°, the pulse was 120, and the

respirations were 40. The reflexes had returned but they were exaggerated, and it was noted that the chin was turned to the left and the angle of the mouth to the right. At 10 P.M. he showed signs of sweating, and at 11.30 P.M. he was sweating profusely, but the temperature had risen to 105°, the pulse remained at 120, and the respirations had risen to 60. He was again put into the ice-pack till 1.10 A.M. (Sept. 30th), when the temperature had fallen to 101·6°, the pulse to 96, and the respirations to 24, and there was much less cyanosis. He slept till 2.30 A.M., when he spoke for the first time, and again there was profuse sweating at 4.45 A.M. At 6 A.M. the temperature was again 104·2° (in the axilla), with a hot and dry skin, and the patient was wrapped in tepid sheets and ice was applied to the head. At 10 A.M. the temperature was 101·8°, the pulse was 96, and the respirations were 24. He was now seen by Major Hojel, I.M.S., and Dr. Miley of the Coolie Emigrant Service, in consultation. He was then conscious, answered questions said he had no pain, and wanted to sleep. Five grains of calomel and five grains of sulphate of quinine in solution were injected hypodermically and an ice-bag was applied to the head. At 2 P.M. the temperature had fallen to 100° and the patient was put in blankets. He took iced milk-and-soda well at frequent intervals. At 6 P.M. the temperature was 102·4°. Three grains of sulphate of quinine were injected and the patient was again put into tepid sheets till 10 P.M., when the temperature was 100°. He had passed urine involuntarily at frequent intervals all day, the urine having a characteristic odour. On Oct. 1st the temperature was 104° at 2 A.M. The patient was put in the wet pack till 9 A.M., when the temperature was 101°. All reflexes were normal and he complained of no headache or pain. The head was shaved on this day. He was given 20 grains of bromide of ammonium with diaphoretics every four hours. At 10 P.M. the temperature was 104·4° and the patient was in a muttering and semi-delirious condition. He was wet-packed till 12 P.M., when the temperature was 101°. On the 2nd the temperature at 10 A.M. was 102·8°. There were rhonchi and râles over both sides of the chest. A red patch over the sacrum due to constant dribbling of urine was treated with spirit and a powder of equal parts of boric acid and sulphate of zinc. At 10 P.M. the temperature was 102 8°. There was muttering all day, but it was easily controlled. There was herpes of the right cheek, perhaps due to the ice. On the 3rd the temperature at 10 A.M. was 101°. The patient was icteric. He was muttering and picking his fingers. He had been out of bed. His tongue was yellow and drier and there was sordes on the teeth. The bromide was omitted, and 10 minims of oil of turpentine were given every four hours, and boric acid lotion was applied to the eyes. On the 4th the temperature was 100°. The muttering continued, but he was more amenable. Two motions were passed, the first involuntarily. In the evening the patient was in much the same condition. On the 5th the temperature was 101°, but the patient was more conscious and brighter. During the afternoon, the vessel having arrived at Bombay, he was removed to the European hospital, under the care of Lieutenant-Colonel Boyd, I.M.S.

Four days after the removal of the patient to the hospital the temperature became normal and he gradually improved till a fortnight later when, though perfectly conscious during the day, he was still restless and passed urine involuntarily during the night. It was thought advisable to leave him to regain strength in hospital before again subjecting him to the heat of the Red Sea. After he had recovered sufficiently he returned to England, where he arrived at the end of November in good health. The only thing abnormal elicited on examination was that there existed some tremor of both the upper and lower extremities. The knee-jerks were under normal, that of the left being comparatively more active than that of the right.

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CARDIFF INFIRMARY.—£6300 have been collected during the past six weeks towards defraying the adverse balance of the Cardiff Infirmary, which amounts to £11,000.

DORSAL DISLOCATION OF THE FIRST PHALANX OF THE LITTLE FINGER;

REDUCTION BY FARABŒUF'S DORSAL INCISION.

BY HAROLD L. BARNARD, M.S. LOND., F.R.C.S. ENG.,
ASSISTANT SURGEON TO THE LONDON HOSPITAL.

ON May 12th, 1900, my house surgeon, Mr. Meredith, told me that he had admitted to the Seamen's Hospital an engineer's fitter, aged 19 years, with a backward dislocation of the first phalanx of his left little finger. He had been standing with his hand resting upon an iron plate so that the head of the metacarpal bone of his little finger was placed over a hole in the plate. A heavy hammer had then fallen upon the back of his hand driving the head of the metacarpal bone downward and completely dislocating the first phalanx backwards. On the same night Mr. Meredith made prolonged efforts to reduce the dislocation under deep anæsthesia but without success. On the following day, after I had made several vigorous efforts to reduce the dislocation by manipulation, I was forced to operate.

The method employed appears to have been independently suggested at various times by Desault, Hulke, and Farabœuf, for the more common dislocation of the same joint in the thumb. Recently this method was strongly advocated by Mr. Hutchinson, junior.[1] I entered a narrow-bladed knife on the dorsal surface of the dislocated joint to the ulnar side of the extensor tendon and carried the back of the blade along the articular surface of the base of the phalanx until the point of the knife impinged against the back of the metacarpal bone. I then cut firmly upward for a distance of about one-third of an inch, dividing the glenoid ligament upon the back of the metacarpal head. The ligament was distinctly felt to give when the section was complete. The metacarpal bone was then flexed upon the palm of the hand to relax the flexor brevis minimi digiti and the first phalanx was hyper-extended and at the same time carried bodily forward, when it immediately slipped into its place. One stitch was inserted into the wound, which was somewhat larger than necessary, and the fingers were bandaged in a flexed position over the end of a forearm splint. The patient made an uneventful recovery.

I have recorded this case for two reasons. In the first place, I have found only one other detailed account of a case of dislocation of the first phalanx of the little finger in the English literature of the subject;[2] and, in the second place, in dissections of several artificially-produced dislocations of this joint I have found that the varieties and their appropriate treatment so admirably described by Farabœuf in the case of backward dislocation of the first phalanx of the thumb apply *in toto* to the similar dislocation of the little finger.

Of dislocations of the first row of phalanges in the hand that of the thumb is by far the most common. That of the index finger comes next, and then dislocation of the little finger. The ring and middle fingers, protected by their fellows are very rarely dislocated. Poisillon states that of dislocations of the first row of phalanges two-thirds are dorsal and one-third palmar in position.

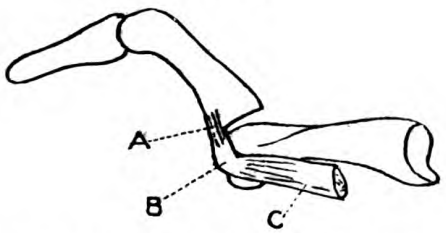
Mr. Battle in an admirable paper in THE LANCET of Dec. 22nd, 1888 (p. 1223), on dislocations of the first row of phalanges, describes a case of dislocation of the little finger very similar to the above. It is of interest to note that in the case of his patient, a stone-mason, dislocation was produced by a stone falling upon the back of his hand. Reduction was, however, effected by manipulation. In another case of Mr. Battle's the first phalanx of the index finger was dislocated by a blow upon the back of the hand with a broomstick. On the other hand, dislocation of the first phalanx of the thumb is more often produced by falls upon the palm of the hand. We may, therefore, distinguish those dislocations in which the head of the metacarpal bone is driven forward by violence applied to the back of the hand from those in which the first phalanx is driven back by force applied on the palmar aspect. The hand is mechanically in continuity with the radius and not with the ulna, and this would appear to explain why this dislocation is so

[1] Brit. Med. Jour., Jan. 15th, 1898.
[2] Battle: THE LANCET, Dec. 22nd, 1888, p. 1223.

much more common on the radial than on the ulnar side, for in the frequent accident of falling upon the outstretched hand the strain is borne by the radial digits. In this common accident the phalanx is driven back, but on the ulnar side, when dislocation occurs, it is due, as we have seen in two cases, to the head of the metacarpal bone being driven forward.

The anatomical arrangement of tendons, bones, but more especially of ligaments, which makes reduction of the first phalanx of the thumb so difficult in some cases is represented by analogous structures in the little finger, and the ingenious methods recommended by Farabœuf for overcoming these obstructions in the thumb are applicable to the little finger. The tendon of the flexor longus pollicis having slipped off the head of the metacarpal bone, usually upon the ulnar side, has been supposed by some surgeons to clasp the narrow neck of the bone and thus to cause the great hindrance to reduction. In dislocations of the little finger artificially produced I found that the flexor sublimis and profundus tendons slipped to the radial side of the metacarpal head in a similar manner. In neither case, however, does it appear at all likely that difficulty in reduction is due to the hitching of slippery tendons on the rounded head of the bone. Others have held that the hindrance to reduction was due to the globular head of the bone passing forward between the heads of the flexor brevis pollicis which then clasped the narrow neck tightly as the muscle spasmodically contracted, and they supposed that the two sesamoid bones made matters worse by locking into the grooves on either side below the head. This button-and-buttonhole theory suggested the treatment by tenotomy of the outer head of the flexor brevis pollicis and even of both heads where tenotomy of one was not successful. In the little finger the equivalent structures are the two heads of the flexor brevis minimi digiti and the globular head of the metacarpal bone, and these might be supposed to produce equivalent effects, although sesamoid bones are not, as a rule, present in the tendons of insertion of the short flexor of the little finger. Farabœuf, however, basing his opinion on an examination of 100 artificially produced dislocations of the first phalanx of the thumb, taught that although the tendons and sesamoid bones formed the larger part of the constricting ring or button-hole around the metacarpal neck, yet it was the glenoid ligament which was the real obstacle to reduction and that a vertical section of this ligament would at once permit the metacarpal head to slip back from between the heads of the flexor brevis pollicis. The bases of the first row of phalanges are much smaller than the articular surfaces on the heads of the metacarpal bones, so that they can articulate with only a small part of these surfaces at any one time. To supplement this deficiency of articulating surfaces on the phalangeal side a dense apron of fibrous tissue is prolonged forward from the anterior edge of the base of the phalanx to which it is firmly attached. The upper edge of this glenoid ligament is loosely fixed to the front of the neck of the metacarpal bone; on either side it blends with the tendons of insertion of the small muscles passing to the tubercles on the bases of the phalanges and in this part of the ligament in the case of the

FIG. 1.

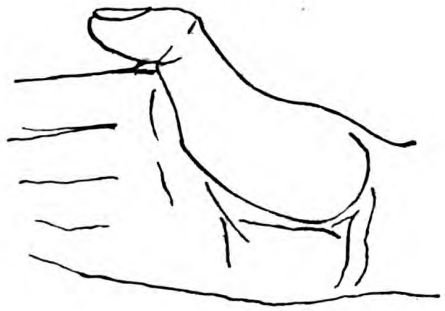


Incomplete dislocation of the first phalanx of the thumb. A, Glenoid ligament. B, Sesamoid bone. C, Flexor brevis pollicis. (Farabœuf.)

thumb the sesamoid bones are found. In short, the glenoid ligament is formed of dense transverse fibres binding together the tendons of the short muscles passing to the bases of the first row of phalanges. When dislocation occurs the phalanx as it passes back carries this apron with it and tears it from its upper attachment. The head of the metacarpal bone passes forward through the rent above the ligament and the sharp, torn edge of the glenoid ligament clasps the neck of the bone firmly behind.

Farabœuf distinguished in the thumb incomplete from complete dislocations and he divided the complete dislocations into simple and complex. In my dissections I have found all these varieties represented in the little finger. In the incomplete dislocations (Fig. 1 and Fig. 2) the glenoid ligament is still in contact with the posterior part of the

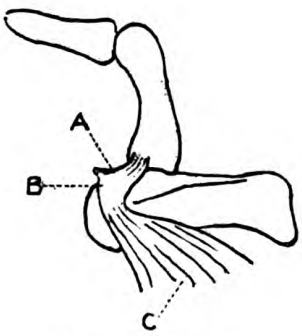
FIG. 2.



The same showing deformity. (Farabœuf.)

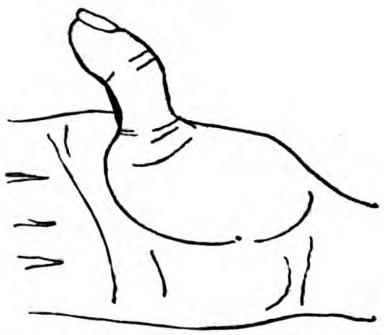
articular surface of the head which has not entirely passed through the rent in the front of the capsule. The lateral ligaments are not ruptured. Reduction is effected easily by pushing the phalanx forward and the head back. In simple complete dislocations (Fig. 3 and Fig. 4) the lateral ligaments are, as a rule, ruptured. The crucial point of this variety is, however, that the glenoid ligament retains its normal relations to the phalanx and extends forward in continuity with the articular surface on the base of the phalanx.

FIG. 3.



Complete simple dislocation of the first phalanx of the thumb. A, Glenoid ligament, B, Sesamoid bones. C, Flexor brevis pollicis. (Farabœuf.)

FIG. 4.



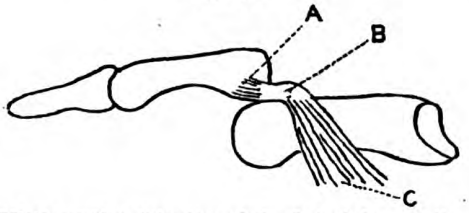
Complete simple dislocation showing the deformity.

The articular cartilage on the phalangeal base rests directly upon the back of the metacarpal bone. This dislocation can be reduced by Farabœuf's method of manipulation. The metacarpal bone is flexed into the palm of the hand, so as

to relax the short flexor. The first phalanx is then hyperextended and carried bodily forward.

Complete complex dislocation was considered by Farabœuf to be the result of ill-directed and violent attempts to reduce a complete simple dislocation by manipulation. In this form (Fig. 5 and Fig. 6) the glenoid ligament is tucked under the

FIG. 5.



Complete complex dislocation of the first phalanx of the thumb. A, Glenoid ligament. B, Sesamoid bone. C, Flexor brevis pollicis. (Farabœuf.)

FIG. 6.

Complete complex dislocation showing the deformity. (Farabœuf.)

base of the phalanx so that its articular surface is in contact with that of the phalanx, and it intervenes between the base of the phalanx and the metacarpal bone. In this position the glenoid ligament forms an insuperable obstacle to reduction by manipulation and these are the really difficult cases. To overcome this difficulty Farabœuf suggested to Verneuil that he should make an open incision on the dorsum of the joint and divide the inverted glenoid ligament in the middle line against the back of the head of the metacarpal bone. Verneuil found the method entirely successful in his case. Hulke in "Holmes's System of Surgery" suggested the same method as the result of dissections made by him, but he does not appear to have adopted it in an actual case. Mr. Jonathan Hutchinson, junior, states in a paper drawing attention to this method that it was certainly known as early as the time of the great surgeon Desault.

We may sum up the whole of this matter thus:—1. That dislocation backwards of the first phalanx of the little finger is rarer than that of the index finger and much rarer than that of the thumb. 2. That, unlike the similar dislocation in the thumb, it is probably produced in most cases by violence applied to the dorsal surface of the head of the metacarpal bone. 3. That the three varieties—(*a*) incomplete dislocation; (*b*) the complete simple dislocation; and (*c*) the complete complex dislocation, so admirably described by Farabœuf in the case of the thumb—apply equally to the little finger. 4. That the incomplete dislocation is easily reduced by pushing the phalanx forward; the complete simple form by the method of manipulation suggested by Farabœuf; whilst the complete complex dislocation, the result of ill-directed manipulation, requires the simple operation suggested by Desault, Farabœuf, and Hulke.

Upper Wimpole-street, W.

LITERARY INTELLIGENCE.—Messrs. J. & A. Churchill announce that the "Manual of Anatomy" which the late Professor Alfred Hughes was writing will be published in due course. A large portion of the work was ready before Professor Hughes left for South Africa and it will now be completed and seen through the press by Mr. Arthur Keith, joint lecturer on anatomy at the London Hospital. Many of the illustrations will be from drawings of the well-known dissections exhibited by the late professor.

THE TREATMENT OF DUPUYTREN'S CONTRACTION AND OTHER POINTS IN THE SURGERY OF THE HAND.[1]

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CONTRACTION of the palmar fascia, or "Dupuytren's contraction," is an affection of insidious onset and slow but sure progress. It so deforms the hand as to seriously interfere with its integrity, and once started it progresses steadily until one or more fingers are brought down and held firmly flexed into the palm of the hand. Beginning usually in the ring finger it spreads to the middle and the little fingers and not seldom to the index finger. Thus, in a patient who came to me recently in the right hand the ring and middle fingers were affected, in the left hand all four fingers, the ring finger in both hands being the most involved. The site of commencement of the thickening of the palmar fascia is generally at the deepest part of the palm of the hand—namely, the transverse crease near the base of the ring finger. From this spot the thickening or induration spreads upwards towards the wrist and downwards towards the fingers. As a rule it affects the lateral prolongation of the fascia on the fingers and occasionally, as in a case I saw recently, the central portion of the digital prolongation is affected.

The exact causes of the induration and contraction of the palmar fascia have never been decided, but there are certain points which stand out quite clearly—viz.: (1) it is more common in the male sex than in the female sex; (2) it is met with generally after 40 years of age; and (3) a large number of the patients who suffer from it have a gouty history. In this connexion it might be mentioned that Mr. C. B. Lockwood found crystals of urate of soda deposited in the affected structures. The question of traumatism is somewhat difficult to speak of, for about 50 per cent. of the patients can trace the onset to a slight injury or repeated rubbing of the palms; whereas, on the other hand, many patients have never been subjected to any manual labour. Therefore the exact cause must remain in doubt unless we are prepared to favour the late Mr. William Anderson's theory that the affection is bacterial in origin and that micro-organisms find their way into the fascia through a wound in the palm. Unfortunately, however, no bacteria have been demonstrated, yet as a fact of some interest we may recall the existence of bacteria or micro-organisms in warts on the hands.

For treatment it has been usual to adopt the method first practised by the late Mr. William Adams of multiple subcutaneous division by a fine tenotome of all the contracted bands of the palm of the hand and of the fingers. This method is fairly successful but it has certain disadvantages. These are as follows: 1. The difficulty often experienced of completely dividing all the bands. If these should extend upwards and over the site of the superficial palmar arch complete division here cannot be effected without danger of wounding the vessels. 2. It frequently happens, therefore, that more than one operation is necessary, as the fingers cannot be fully extended unless the fascia is completely divided. 3. The after-treatment is decidedly tedious and sometimes involves the use of expensive and complicated apparatus. 4. It has been shown that some cases which have been treated by this method recur, much to the patient's disgust and disappointment. So in suitable cases I have operated by the open method—that is to say, I have dissected out all the affected fascia in the palm. It is, however, necessary to carefully select the patient. The urine should be examined for albumin and for sugar, and the patient should be in good health, spare, and one apparently possessing good healing power. The advantages of operating by the open method are as follows. 1. All the affected fascia in the palm can be completely removed and there is no liability to recurrence. A gentleman, aged 66 years, in good health, on whom I operated five years ago by this method, has never shown the slightest sign of trouble and the palm is as soft and flexible as it is possible for it to be. And if

[1] A paper read before a meeting of the British Orthopædic Society on Oct. 13th, 1900.

there be any truth in Mr. Anderson's bacillary theory the best treatment is to get rid of the whole affected part as soon as possible. 2. By the open method treatment is shortened, for as soon as the wound in the palm is firmly healed the use of splints can be discontinued. 3. No expensive apparatus is necessary, thin narrow malleable iron splints being all that are required. Certain disadvantages have been urged against the open method. Firstly, it involves a prolonged dissection, but in itself to a skilled operator this is not a matter of great moment; and secondly, while removal of the indurated fascia in the palm is easy by dissection it is not possible to dissect it out off the sides of the fingers except in strictly localised bands; and, thirdly, if for any reason the hand should go septic after the operation the results are disastrous. It is quite possible, however, that such an event might happen in operating by the older method.

The measures adopted are as follows. The hand is made absolutely aseptic by all the most approved methods and to this point, if the surgeon decides to operate by dissection, he must attend himself and not delegate it to a subordinate or to a nurse; for this is the essence of the whole business and any want of care and forethought in this particular will end in disaster. The same remark applies to instruments and to the accessories. As an anæsthetic I prefer chloroform or the A.C.E. mixture, avoiding ether whenever possible because of the increased hæmorrhage associated with it. An Esmarch's bandage is previously placed around the upper arm so as to prevent the otherwise free oozing from obscuring the field of operation, and the incision is then made vertically over the most prominent band of fascia, extending from the position of the superficial palmar arch to the root of the finger. In extensive cases this incision can be enlarged by carrying out transverse cuts at either end. The dissecting back of the flap of skin is difficult without button-holing it. What happens is that the thickened epidermis peels away from the cutis vera while the latter is attached very firmly by numerous fibrous prolongations to the fascia beneath. Then, too, if the fascia is nodular it often happens that the skin is exceedingly thin, so that great care must be taken in dissecting it away, but it must be turned back as far as the limits of the affection. The next point is the removal of the fascia. Before doing so it is well to define the digital vessels and nerves as they emerge from the divisions and trace them back by cutting through the thickened fascia towards the wrist. The affected structures can now be easily removed and often the finger or fingers can be straightened. In those cases where the fingers are involved a small fine tenotome is passed between the skin and the bands on the lateral aspects and the fibrous tissue divided. An important point is the arrest of hæmorrhage. The Esmarch bandage should be released and whatever oozing occurs should be checked by pressure or by the application of hot sponges. If any arteries spurt it is most advisable to use torsion to check them and not to put on ligatures, for these are apt to give rise to trouble in healing. The application of sutures should be careful and the material to be used is horse-hair. If it happen when the fingers are straightened that there be a hiatus of skin at their roots I have several times performed a small plastic operation and slipped down a little skin to cover up this spot. Sal alembroth dressings are then used and rigid asepsis must be continued until every scab has disappeared. In one of my patients whom I warned on this point considerable trouble followed from neglect. He was a sea-captain and finding that the palm was all but well he took off the dressing and proceeded to climb up the side of the ship by a rope, knocking off a small scab. Acute œdema and trouble in the palm of the hand followed with considerable stiffness and gave him much inconvenience for four months. Subsequently the whole matter settled down and the patient's hand is as good as it can possibly be. The question will arise, Should the hand be put up at once in the straight position? If there is much contraction of the fingers it is better not to do so, because of the pain which arises from stretching of the digital nerves which have become structurally shortened while the finger contracted downwards.

On the whole, then, in suitable cases removal by the open method with the aid of aseptic surgery is a quick and thorough method of dealing with this deformity.

CLUB-HAND.

This is a comparatively infrequent deformity and is almost always congenital. During the last 10 years I do not think that I have seen more than 15 cases and they were mostly unilateral. In some of them the child was born prematurely and there were defects elsewhere. For so unusual a deformity the classification adopted is somewhat intricate, but it is analogous to that of club-foot. The hand may deviate either externally or internally and be either flexed or extended. Hence there are radial and ulnar club-hand and palmar and dorsal club-hand. But it is not often that the deformity is simple, and mixed deviations occur; so that radio-palmar, radio-dorsal, ulnar-palmar, and ulnar-dorsal forms are seen. Morphologically the cases may be grouped thus: 1. The skeleton is complete and otherwise well formed and the malformation consists in a modification of the relations of the articular surfaces and in an abnormal inclination of the line of the joint. 2. The skeleton is complete, but deformed in parts, the radius is often shortened and the carpal bones atrophied. This is the most usual variety. 3 The skeleton is incomplete and deformed. The radio-palmar varieties are generally of this group. There is an absence of one or more bones of the metacarpus or of one of the bones of the forearm. When the radius is absent the ulna is shortened, increased in size, and much curved. The carpal articulation is abnormal and there exist in it numerous fibrous bands and tendons which are in no way related to normal structures. Frequently other irregularities are present in the body, such as absence of groups of muscles or vascular and nerve defects.

Unfortunately, the deformity does not admit of very successful treatment. Passive movements and massage are of service when the patient is young and they are valuable in preventing aggravation of the deformity by contraction of the tendons on the concave aspect of the wrist. Various apparatus have been devised with the object of rendering of the hand useful, but they are not very satisfactory, and the patient can use the hand in many cases to better purpose unfettered by any contrivance. Tenotomy is also of service, and those tendons should be divided which interfere with the placing of the hand in a right line with the forearm and care be taken that important vessels and nerves are not wounded. Dr. L. M'Curdy planned and carried out the following ingenious operation in a radio-palmar deformity with hypertrophy of the lower end of the ulna. He made an incision obliquely across the forearm, beginning upon the dorsum and passing obliquely upwards to the flexor aspect. The tendons on the radial side were tenotomised, the lower end of the ulna was divided obliquely, and to the outer part the semilunar bone was connected with silkworm-gut. In many of the cases which I have seen I have been content to divide the contracted tendons and to gradually improve the position of the hand by massage, passive movements, and a retentive malleable iron splint.

ON THE PROGNOSIS OF TENDON DIVISION AND SUTURE IN THE HAND.

Cases are frequently occurring in surgical practice where division of the tendon has taken place in the hand and failure of complete union followed even after the most careful suture. This is not a mere matter of chance, but it is dependent on certain well-ascertained facts Some of these are the following: (1) the index of tension at which the muscle and tendon are set—i.e., their powers of retraction; (2) the limitation of retraction of the tendon by bands of fibrous tissue binding it in its grooves; and (3) the character of the structures at the spot where division of the tendon occurs—e.g., if division is made where the tendon is surrounded by vascular areolar tissue, plentiful formation of fibrous tissue takes place and the tendon unites despite considerable retraction of the divided ends. It therefore becomes necessary to remember the foregoing three points in forming a prognosis as to the results of tendon-division.

Bearing those points in mind, the seat of election of purposeful division of a tendon for contraction can be determined. It may be of service to give examples. If the extensor tendons of the fingers are severed better results can be expected than in the case of the flexors owing to the closer attachment of the former to the sheaths, the integument, and to one another. But the retraction is greater when division occurs above the wrist than below it. The extensors of the thumb frequently suffer in wounds of the hand. If they are divided at the back of the wrist they retract only about 1 centimetre, as they are more or less bound down by periosteum and good union occurs, but if the division takes place over the metacarpal bone the central end will retract three or four times as much, as the

tendons play freely in the sheath, and the latter is very loosely attached to surrounding structures, so that good union is rare. When the wound is at the metacarpal phalangeal articulation of the thumb the prognosis as to healing is good, for the tendons are bound down to the capsule of the joint and cannot retract even though the joint has been opened.

The flexor tendons, if divided at the wrist-joint, retract very considerably, but the superficial ones less so than the deep, for the former lie in tubes of fasciæ; yet better union occurs here than in the palm of the hand, because the neighbouring structures are more vascular and a good uniting bond of tissue is thrown out. A most important point is to keep the wrist fully flexed for at least four weeks after the accident and then gradually bring the hand into the straight position, taking at least a month to do so. In any operation on the flexor tendons of the hand and fingers the wrist is the seat of election, as it is more likely that new tendon formation will follow, and the exact length of this can be graduated by carefully controlling the position of the hand on the forearm. A recognition of these points is of importance in the treatment of contracted hand for spastic paralysis.

Weymouth-street, W.

LOSS OF THE LEFT FOREARM BY AMPUTATION; DEATH 49 YEARS THEREAFTER; NECROPSY; LOCALISED AREA OF ATROPHY AT THE BASE OF THE RIGHT SECOND FRONTAL GYRUS.

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AND
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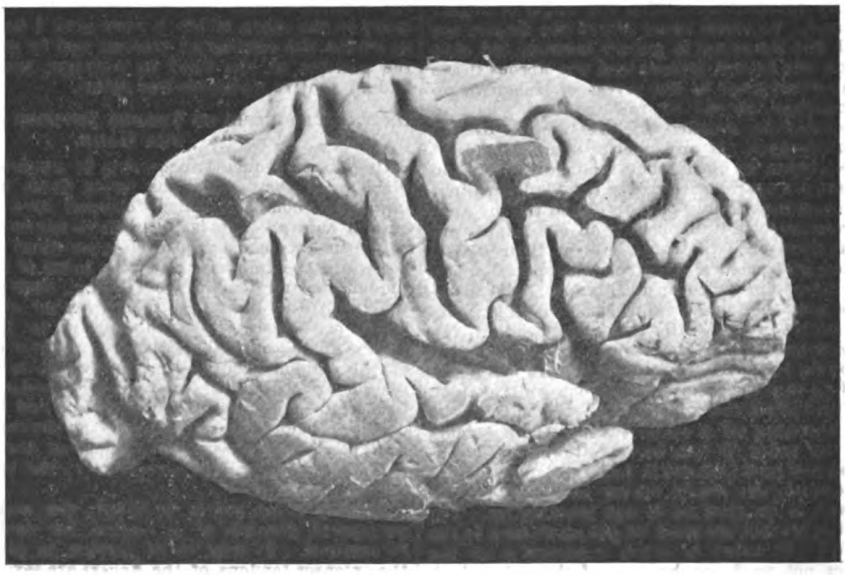
IN the following case we were fortunate enough to get a necropsy and within a few hours of death.

A male, aged 63 years, was admitted to Camarthen Asylum suffering from acute melancholia on May 10th, 1900. The heart was found clinically to be much atrophied. He died suddenly from angina pectoris on May 17th. A post-mortem examination was made 13 hours after death. The cause of death was degeneration of the cardiac muscle.

On admission the patient was found to have undergone amputation of the left forearm just below the elbow-joint (very high up). He had a considerable range of movement in the left upper arm and he used the mutilated limb for holding objects against his side. The history was that when between 13 and 14 years of age a cart went over his left forearm, necessitating amputation. Up to within three years of admission he had been healthy in mind; he first began to show change then, but was not incapacitated. He was of ordinary intelligence and his occupation was that of a post-master and insurance agent at a village. There had never been any fits or convulsive movements. A few days before admission he began to show symptoms of acute melancholia.

At the necropsy, on removal of the pia mater, a patch of softening, roughly oblong, about one and a half centimetres in length and from three-quarters to one centimetre in breadth, was found occupying the grey matter of the brain at the base of the second right frontal gyrus, where it joins the ascending frontal (see figure). It was ochre-coloured. The disorganised tissue was extremely thin and wrinkled, evidently wasted. The lesion looked old, although there was no sclerosis. The subjacent white matter did not appear changed to the naked eye. No lesions were found at any other part of the brain, which was of good consistence. The basal vessels were atheromatous but not at all strikingly so.

The question of interest in this case is whether the shrivelled and softened area in the right cerebral hemisphere bore any relationship to the loss in early years of the left forearm; whether the deprivation in function resulting from such loss had caused the cortical wasting. The area of wasting and softening was well in front of the recognised area for the arm, hand, and fingers, which (as is well known) are placed in the central gyri behind the second and, to some extent, behind the third frontal gyri. As Oppenheim points out,[1] the extent to which the motor region embraces the portions of the frontal (and temporal) lobes bordering upon the motor zone proper (central gyri, paracentral lobule) is doubtful. In all probability the most posterior part of the three anterior frontal gyri must be reckoned in man as well as in the lower animals to the motor region. These outlying parts, however, probably play a subordinate rôle in comparison with that which is to be ascribed to the motor area proper.



The lesion was copied direct on to a Giacomini brain-model and the latter photographed. Circumstances did not allow of photographing the brain itself.

It would be contrary to all experience derived from animal experimentation to correlate the cerebral lesion in this case with the loss of the hand and forearm, on account of the forward position of the lesion. It must be remembered that

[1] Lehrbuch der Nervenkrankheiten, Berlin, 1898.

experience based upon observation in the human being is very meagre. It is curious that such a lesion existed in such clinical conditions, there being no other focus of disease in the brain. That such an isolated lesion, occupying the grey matter, should be due to atheroma is highly improbable.

Carmarthen.

A CASE OF CHRONIC INVERSION OF THE UTERUS OF SEVEN MONTHS' DURATION SUCCESSFULLY TREATED BY AVELING'S REPOSITOR.

BY THOMAS OLIVER, M.D. GLASG., F.R.C.P. LOND.,
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ACUTE inversion of the uterus, if not restored, is said by some authors to be usually fatal. Under all circumstances it is a serious accident. My experience of inversion of the uterus has been gained in consultation with medical friends shortly after parturition in patients, in whom when an anæsthetic has been administered and the exposed surface of the womb has been rendered thoroughly antiseptic, I have had little difficulty in reducing the displacement. On the other hand, I have reported the case of a womb inverted for 18 years becoming malignant; so that, while inversion of the uterus is at all times a serious mishap, there is apparently a certain percentage of women who, once they get over the immediate effects of acute inversion, can go through life with the organ turned inside out without experiencing more than inconvenience.

Of the three different stages into which inversion of the uterus is divided I need not give a lengthened description. They are briefly (1) where the fundus uteri does not come through the os externum; (2) where part of the inverted organ escapes beyond the os; and (3) where the whole womb along with the cervix is inverted.

"Chronic inversion" is the term applied to an acute inversion that has not been reduced or to a displacement which has been slowly brought about by conditions apart from parturition. Inversion, however, is mostly a sequence of parturition and is due to an enlarged and relaxed uterus with well-dilated cervix, upon the fundus of which pressure has been exerted during violent straining, or there has been a precipitate labour and a short umbilical cord, or the accoucheur has pulled too firmly upon the cord while the placenta is still adherent to the uterine wall. Its occurrence after a confinement is usually accompanied by a great amount of shock to the patient and by considerable hæmorrhage. The diagnosis is made by there being no longer felt any fundus above the pubes and in the worst forms by observing the inverted organ, in the form of a globular tumour of the size of a cocoanut, lying between the woman's thighs. The proper treatment at once suggests itself—viz., to replace the uterus under an anæsthetic, having previously taken all antiseptic precautions.

Opinion is divided as to whether if the after-birth is still adherent to the uterus it should be peeled off before attempting to reduce the inversion or whether the uterus should be reduced first and then the placenta removed. It is certainly easier to reduce the inverted organ without the attached placenta, but in peeling off the placenta before replacing the uterus there is often very profuse bleeding. Once the womb is restored the vagina is packed with iodoform gauze. Even where the uterus has been completely inverted after parturition for two or three days and its internal surface has become grey and unhealthy, the discharge escaping from it foul, and the temperature high, yet under thorough antiseptic precautions I have had excellent results notwithstanding the extremely anæmic condition of the patient from loss of blood.

Most of the cases of acute inversion of the uterus are successfully treated at the time; some of the patients, on the other hand, die, while in a few the womb remains inverted. For the present I need only mention that inversion may be also due to a myoma that has passed through a dilated cervix and dragged the interior of the womb down too. Just as hæmorrhage is a symptom of acute inversion, so, also, is it common in chronic inversion. In this form the symptoms are recurrent hæmorrhage along with pain, a sense of dragging, and great discomfort.

A married woman, aged 24 years, was sent to me on Nov. 14th, 1900, by Mr. E. C. Drake of Spennymoor, complaining of pain in the lower part of the abdomen, of frequent losses of blood, and of what she believed to be the womb protruding through the vulva. She stated that she had been confined of her second child on May 1st, 1900, and that a midwife had attended her. The labour was easy and the after-birth came away readily without any traction having been made upon the cord. A few hours after delivery she passed a large clot which was followed by the rather sudden descent of the womb itself, accompanied by a very free escape of blood. Three days after this accident Mr. Drake was called in. Finding the uterus inverted and the patient very ill he tried to replace the organ, but only with partial success; nor was a second attempt the day after followed by any better result. The patient refused to allow any further efforts at restoration to be made and by degrees she recovered from the collapse and from the continuous bleeding. Her recovery, if it ever could be called such, was incomplete, for she began to have recurrent hæmorrhage which at times was rather profuse, and she became unable to attend to her domestic duties. At her menstrual periods the inverted uterus protruded further out of the vulva than in the intervals. She was in great pain and was so inconvenienced by the inverted uterus that she begged to be relieved. The patient was a slim woman and extremely pale and haggard-looking. The heart, the lungs, and the kidneys were healthy. On examination per vaginam the canal was found to be occupied by a pyriform tumour which was felt projecting through a widely dilated os uteri. The narrowed part of the tumour could be traced up inside the os and was found to be continuous with all that remained of the lower segment of the uterus. The sound passed up by the side of the tumour through the os for three-quarters of an inch. As the patient was of rather a spare build the hand could be driven well down into the abdominal cavity behind the pubes but no fundus could be felt. Absence of the fundus above the pubes and the extremely short distance the sound penetrated through the widely dilated os made the diagnosis of chronic inversion of the uterus certain as against that of polypus. The case was not a prolapsed uterus, as was demonstrated to the students in the wards.

At my first examination of the patient I tried to reduce the displaced organ then and there, but it was too painful for the patient. On Nov. 22nd an anæsthetic was administered, when, after having carefully carbolised my hands, and having douched the vagina, I made an attempt both by central and lateral taxis to replace the organ, but although part of the womb could be replaced within the os I did not succeed in returning the whole organ. Failing thus to keep the fundus in its place, I applied Aveling's repositor, packed the vagina with iodoform gauze, and drew together the suspenders of the instrument. The repositor was left *in situ* for three days, Dr. W. Simpson, the senior house physician at the Newcastle Royal Infirmary, tightening the bands daily. When the repositor was removed the inversion had entirely disappeared, the steady and continuous pressure of the repositor having accomplished what forcible taxis failed to do. When I examined the patient on Nov. 28th and the following days no portion of the inverted fundus could be felt in the vagina. The finger could be carried through the os into a well-developed cervical canal nearly one inch in length and the uterine sound now entered to half an inch beyond the bend. The restoration of the uterus was quickly followed by signs of improvement in the general health of the patient. After a further few days' rest in bed she left the infirmary feeling remarkably well with her uterus in the normal position.

Newcastle-on-Tyne.

THE RELATION OF THE BOWEL LESION OF TYPHOID FEVER TO THE GENERAL SYMPTOMS OF THE DISEASE.

BY T. J. MACLAGAN, M.D. EDIN.

THE most prominent of the general symptoms of typhoid fever, that which from first to last is the dominant feature of the illness, is fever, indicated by a rise in the temperature of the body. This rise begins with the onset of the stage of invasion, reaches its maximum often as early as the fourth

or fifth day, and generally by the end of the first week; after the tenth day there is as a rule no further rise, but the final fall of commencing convalescence seldom shows itself before the twentieth or twenty-first day of the fever. The temperature is higher in the evening than in the morning, the maximum range varying from 102° to 104° F. That is the course of the fever in an ordinary typical case of typhoid fever, in which the lesion goes on to sloughing and ulceration, in which no complications arise, and in which we have to deal with nothing except the action of the typhoid bacillus.

In very mild cases in which the inflammation of the intestinal glands terminates in resolution the temperature seldom rises beyond 101° or 102°, and the fever comes to an end in from 12 to 20 days. In severe cases in which the fever lasts for four or five weeks the temperature may remain high during the whole course of the illness. Between the very severe and very mild cases there are all shades and degrees. There is no ailment which presents such protean features as typhoid fever, and no form of fever in which the temperature varies more in different cases. But in uncomplicated cases of typhoid fever the maximum range of temperature is reached before the tenth day, before the local lesion has given evidence of its existence.

How does the bacillus produce the general febrile disturbance? Is the fever merely symptomatic of the bowel lesion? Or is there any other agency at work? How the bacillus acts in producing the bowel lesion we have already seen.[1] We have seen, too, that in its early stages, while affecting only the submucous coat, this lesion gives rise to no local disturbance, no local indications, subjective or objective, by which its existence could be diagnosed, and yet it is at this stage that the temperature attains its maximum. A local lesion which does not cause enough local disturbance to enable us to diagnose its existence is not likely to cause so much general febrile disturbance as is noted at the end of the first week of an attack of typhoid fever. This maximum of fever and minimum of local disturbance, though associated clinically, are not likely to be associated causally. It cannot, indeed, be said that so important a lesion causes no general disturbance and has no share in the production of the fever, but it is evident that its presence is not sufficient to explain and account for the marked rise of temperature noted during the first week of the disease. There must be some other agency at work: but the sole agency with which we have to do is the bacillus. There must, therefore, be some action of the bacillus other than its local action on the intestinal glands, in virtue of which it causes the general febrile disturbance.

In dealing with the action of the bacillus on the intestinal glands we are dealing solely with the action of the parasite on its nidus. But there is also the general action of the organism on the system; and that is what we have to do with in considering the pathogenesis of the general febrile disturbance. The first bacillus which enters the system from without is entirely inert until it is vivified and roused into activity by contact with its nidus in the intestinal glands. Here it is rapidly reproduced and in a short time, as gland after gland is invaded, hundreds, thousands, and ultimately millions of the specific organisms of typhoid fever pass from the nidus into the general circulation through the numerous lacteals and veins with which the affected glands are so abundantly supplied, in a network of which indeed they lie embedded. But be it specially noted that the mass of the organisms which thus pass into the circulation are not mature bacilli but young germs which have just been reproduced, have just entered on their separate existence, and whose organic growth has yet to be completed. Not only in the affected glands but all over the body, in the minute structure of all its tissues, this organic growth goes on and the poison passes from the germ state to that of the mature bacillus. It is the action resulting from the organic growth in the tissues of these millions of organisms that gives rise to the general febrile disturbance associated with the development of the bowel lesion.

The action of the bacillus is thus a dual one: (1) there is the specific local action of the parasite on the intestinal glands; and (2) the general action of the organism on the blood and tissues. The bowel lesion does not cause the fever and the fever does not cause the bowel lesion. They are conjoint results of this double action of the bacillus.

To form a just estimate of the tremendous morbific power of these organisms and of their capacity to produce disturbance we must have some idea of the enormous extent to which they are reproduced and the immensity of the numbers with whose action we have to deal, for it is the vastness of their number rather than the potency of the individual that serves to explain the phenomena to which they give rise. Suppose that each bacillus produced ten others and that one day was the time requisite for the process of reproduction we should from one bacillus have in ten days 1 000,000 000:—thus, on the first day one; on the second day 10; on the third day 100; on the fourth day 1000; on the fifth day 10 000; on the sixth day 100,000; on the seventh day 1,000 000; on the eighth day 10,000,000; on the ninth day 100,000,000; and on the tenth day 1,000,000,000. Let us take a more modest estimate and suppose that each bacillus produced only four others in 24 hours, we should have the following result: on the first day one; on the second day four; on the third day 16; on the fourth day 64; on the fifth day 256; on the sixth day 1024; on the seventh day 4096; on the eighth day 16,384; on the ninth day 65,536; on the tenth day 262,144; on the eleventh day 1,048,576; on the twelfth day 4,194,304; on the thirteenth day 16,777,216; and on the fourteenth day 67,108,864. Even at that rate we should have in a fortnight from one bacillus more than 67,000,000. Suppose 12 instead of 24 hours to be the time requisite for the reproduction of the germs their rate of increase would be doubled. The mind can hardly grasp the number of bacilli which may thus be launched into the circulation.

The action which culminates in this result and in the symptoms of typhoid fever begins at the beginning of the period of incubation, the time at which the poison is received into the system. At first from the paucity of the numbers the rate of increase is comparatively slow and the number of bacilli brought into action is not sufficient to cause disturbance of the system. That is what is taking place during the period of incubation—that is, indeed, what constitutes that period. But it is evident that a time must come when the quantity of poison in the system is so great that it cannot be reproduced four-fold without causing almost an explosion of germs in the system. The onset of this inevitable event terminates the period of incubation and ushers in the stage of invasion. A glance at the figures given will show how certainly this must occur. The reproduction, slow at first, speedily becomes very rapid. Taking the first set of figures the number of bacilli produced at the end of the first five days is 10,000, by the end of the second five it is 1,000,000,000 Taking the second set, at the end of the first week the number is under 5000; by the end of the second week it is over 67 000,000.

It is the organic growth in the tissues of these vast hordes of bacilli that causes the fever and general disturbance noted in typhoid fever. How do they do this? Rise of temperature may be produced in one of two ways: (1) by increased activity of the process by which heat is formed; or (2) by diminished activity of the process by which its formation is inhibited and kept within due bounds. That due to impaired inhibition is illustrated by hyperpyrexia and the increased body heat which results from some lesions of the brain and cervical cord. That due to increased production is exemplified by that with which we are now dealing.[2] But rise of temperature is not the only symptom of such fever. Wasting of the nitrogenous tissues, increased elimination of urea, increased rapidity of the circulation, thirst, dry skin, and scanty urine,—these with rise of temperature are the essential phenomena of fever.

The essential and distinctive feature of an organism is its action on its environment. The action of an organism such as the typhoid bacillus on its environment in the tissues consists in the consumption of nitrogen and water—a consumption which, in virtue of their vast numbers, must be very great. Now when we come to examine minutely into the various phenomena of the febrile state as it occurs in the specific fevers we find that they ultimately resolve themselves into two—increased consumption of nitrogen and increased consumption of water. From these two all the others result. Rise of temperature, quickening of the circulation, wasting of the nitrogenous tissues, increased elimination of urea, thirst, loss of appetite, dry skin, scanty urine all owe their existence to the consumption by the contagium of the nitrogen and water destined for the tissues.

[1] THE LANCET, Dec. 8th, 1900, p. 1639.

[2] See "Fever, a Clinical Study," by T. J. Maclagan, M.D. (J. & A. Churchill, 1888).

For their consumption by these hosts of bacilli represents a direct loss to the tissues. Occurring in the nitrogenous tissues it gives rise to the rapid wasting of these tissues noted during an attack of typhoid fever. Occurring in the brain it causes the headache of the earlier and the wandering of the later stages. Other and necessary results of this consumption by an external agency of the water destined for the tissues are those indicative of a short supply—thirst, dry skin, and scanty urine. The supply may be ample, but it is tapped *en route* by the bacilli and does not reach the tissues in sufficient quantity.

The seat of normal tissue metabolism is the minute structure of the tissues. That, too, is the seat of the abnormal action which we are now considering. Tissue metabolism consists (1) of the taking up of new material from the store albumin, to form fixed or organ albumin; and (2) of the giving off from the tissues of their worn-out organ albumin, which passes back into the circulation and is ultimately eliminated as urea. These actions are simultaneous, neither preceding the other. The bacilli lay hold of the nitrogen of the store albumin at the moment when it is about to be appropriated by, and incorporated in, the tissues as organ albumin. The simultaneous action by which the worn-out organ albumin passes back into the circulation is equally far advanced. Nothing intervenes to prevent this, it goes on only more actively in consequence of the increase of metabolism, and thus is brought about the physiological anomaly that lessened consumption of nitrogen by the tissues is accompanied by increased elimination of nitrogen by the kidneys.

The matter may be briefly put thus: What is the cause of the wasting of the nitrogenous tissues? The consumption by millions of bacilli of the nitrogen destined for their nutrition. What is the cause of the thirst, dry skin, and scanty urine? The consumption by the same bacilli of the water destined for the tissues. What is the cause of the rise of temperature and quickening of the circulation? The increased metabolism which necessarily results from this action going on in the minute structure of the nitrogenous tissues, the chief seat of heat formation. Thus all the essential phenomena of the febrile state as it presents itself in typhoid fever are traceable back to these two agencies—increased consumption of nitrogen and increased consumption of water; and these in their turn result from the action necessarily attendant on the organic growth of vast numbers of bacilli in the structure of the tissues.

Other symptoms noted during the course of the fever are equally explained on this view of the mode of action of the bacillus. The headache of the earlier and the delirium of the later stages of the fever are due to cerebral inanition consequent on the consumption in the brain tissue of the nitrogen and water destined for the nutrition of that organ. The softening of the cardiac muscle and the changes noted in it after death are due to the same cause acting in its structure.

In typhoid fever, as in the other specific fevers, the soda salts are retained in the system or are eliminated in much diminished quantity, while the potass salts are eliminated in increased quantity. The soda salts exist chiefly in the liquor sanguinis; they are retained because the bacilli in taking up the nitrogen and water of the liquor sanguinis take up also the soda salts in it. The potass salts exist chiefly in the tissues; they are eliminated in increased quantity because there is increased tissue disintegration. All these actions go on and all the febrile symptoms continue so long as the bacillus is being reproduced and come to an end only with the cessation of that process. But why does it cease? Why do these organisms not go on growing as long as any nitrogen and water remain for them to consume? And why does anyone ever recover? The fever thus caused comes to an end when the bacilli cease to be reproduced, and their reproduction ceases when the nidus is exhausted, that is, when all the glands which form the nidus have been destroyed. The course of events shows that on an average it takes five weeks more or less for the completion of this process, two weeks occupied by the period of incubation, and three by the febrile stage. Thus all the essential phenomena of typhoid fever, its rise, course, and decline, are causally associated with the life-history of its bacillus in the system.

Recrudescence of the fever.—It has already been pointed out that the intestinal glands are not all affected at the same time and that some reach the stage of sloughing and ulceration, while others more tardily affected are still at the stage of hardening and thickening. It not unfrequently happens that some glands do not become involved in the morbid process till so late in the disease that the fever caused by those already affected is on the decline or may even have come to an end and the temperature be normal before the fresh lesions are sufficiently advanced to add their quotum to the general disturbance. Their appearance on the scene is heralded by a renewed rise of temperature and a recrudescence of the fever. Such recrudescence may occur towards the end of the third week or at any subsequent period. It means fresh glandular lesions, the launching into the circulation of fresh shoals of bacilli and consequent recrudescence of the fever, with a renewal of all the symptoms local and general.

Cases are not uncommon in which, by a repetition of these recrudescences, the fever is prolonged into the fifth or sixth week, it may be without any material addition to the gravity of the symptoms other than that which comes from the prolongation of a disease which is so exhausting and so full of hazards. The latter part of these cases is really made up of a succession of short attacks following each other so quickly that the one almost dovetails into the other. Each is indicative either of the invasion by the bacilli of one or more fresh glands or of a fresh absorption of septic material.

Relapses.—Sometimes the invasion of the latest affected glands is so retarded that instead of an apyretic interval of only 12 or 24 hours we have six or eight, or even 10 or 12, days of apyrexia and apparent convalescence. The fever is then said to relapse. The pathogenesis of the relapse is the same as that of the recrudescence; the difference is the length of the period of apyrexia which separates the second from the first attack. This period of apyrexia is really the period of incubation of the second attack. But the beginning of that period is contemporaneous with the later days of the primary seizure, so that the poison which gives rise to the relapse has really begun its action before the first attack is at an end, and the two, though clinically distinct and separate, are pathologically one.

It has been supposed by some that relapses may be due to errors of diet, to getting up too soon, or to other indiscretion. But the relapse is as truly an attack of typhoid fever as was the primary seizure. Nothing could cause this except the typhoid bacillus. Moreover, the poison which causes it has really begun its action before the first attack is at an end and while the patient was still confined to bed. The relapse is of shorter duration and generally milder than its predecessor. That is what, on this view of its pathogenesis, we might expect, for the field of operation of the bacilli is much curtailed by the destruction during the first attack of so many of the intestinal glands. There is a more scanty nidus, fewer glands to suffer, and a consequent reduction both in the severity of the local lesion and the duration of the febrile symptoms; these seldom last more than a fortnight, often less. The shorter duration is due to the same cause as the lessened severity; there are not glands enough to cause three weeks of fever. But though the relapse is generally milder than the first attack the rule has a good many exceptions, for every now and then a relapse proves fatal. In connexion with this subject it has to be borne in mind (1) that the relapse comes when the sufferer is already weakened by the first seizure; and (2) that one lesion in the bowel suffices for the production of hæmorrhage and perforation and of a fatal issue.

It is mainly in consequence of their shorter duration that relapses are less fatal than first attacks, for the dangers of typhoid fever necessarily increase as the disease goes on. This shorter duration is due to the fact already indicated, that the nidus of the parasite, the field of operation of the bacillus, is materially reduced in extent by the destruction of the glands involved in the first attack.

It is a demonstrated fact that during the relapse glands suffer which had escaped all the risks to which they were exposed during the primary seizure. It occasionally happens that some even run the gauntlet of a second attack without suffering, for second and even third relapses, each with fresh lesions, are not unknown. How come they to escape? How is it possible for any glands to escape invasion by some of the vast number of bacilli reproduced during the course of the fever? Were this poison liquid and equally diffused through the blood it would be impossible for any glands to escape; but it is not liquid and diffusible, but particulate and indiffusible, and therefore not of necessity equally distributed through the blood. The germs reproduced in the intestinal glands may pass into the

general circulation either through the lacteals or through the superior mesenteric vein. But the bacilli in the blood can gain access to the glands only by way of some of the branches of the left or convex side of the superior mesenteric artery. The chance that no bacilli may ever reach some one particular branch of this artery which supplies a given inch or two of the bowel and a given half-dozen glands is quite an appreciable one. The clinical history of typhoid fever and the occurrence of relapses with fresh lesions shows that this chance occasionally becomes a reality.

Such is the explanation of the mode of action of the typhoid bacillus. The local disturbance in the intestinal glands is the result of the reproduction of the parasite in its nidus. The general febrile disturbance is the consequence of the organic growth in the tissues of the millions of organisms thus reproduced in these glands. Neither action would in itself be disastrous or be followed by serious consequences but for the fact that the trouble in the intestinal glands ends in sloughing and suppuration. These two processes bring into play other morbific agencies which are much more potent for evil than the typhoid bacillus. Before the glands slough there are no serious bowel symptoms and nothing to call special attention to the bowel. As already pointed out, the serious bowel symptoms which are apt to show themselves in the later stages of the fever are caused not by the typhoid bacillus but by the various organisms which come into play with the processes of sloughing and suppuration.[3] To the absorption of these organisms into the system are to be ascribed the prolonged duration of the fever in many of those severe cases which run on into the fourth and fifth weeks, the high range of temperature noted in their later stages, and all the alarming symptoms by which it is accompanied. The high fever, the feeble rapid pulse, the dry tongue, the muttering delirium, and general condition of typhoid prostration which characterise the later stages of severe cases are the symptoms not so much of typhoid fever as of septic poisoning. They occur in the advanced stages of bad cases of typhoid fever, but they are due not so much to the direct action of the typhoid bacillus as to that of the various forms of cocci associated with the sloughing process in the bowel. It is the absorption of these into the system and their reproduction there that causes the alarming symptoms of severe cases and makes typhoid fever so serious and so fatal a disease. There are degrees of this as there are degrees of typhoid fever. The sloughs may be comparatively few and come away without giving trouble. The more severe the bowel lesion the more extensive is the sloughing, the deeper the ulcers penetrate into the gut, and the more likely we are to have the poison absorbed into the system.

Gangrenous ulceration in any part of the body is apt to cause septic poisoning; that is, indeed, the chief danger of such ulceration. The risk of this is specially great in typhoid fever, first because the number of ulcers and consequent foci of absorption are so numerous, and second because the affected glands are situate in a network of veins and lacteals whose function it is to take up and carry into the system the materials presented to them.

Though all the symptoms of typhoid fever are ultimately to be traced back to an action set agoing by the typhoid bacillus, not one of its serious symptoms or special dangers is due to the direct action of that bacillus. The dangers attendant on the bowel lesion, diarrhœa, hæmorrhage, and perforation result from the destructive action on the mucous, muscular, and peritoneal coats of the organisms associated with the processes of sloughing and suppuration. The alarming general symptoms which are noted in the later stages of severe cases —high temperature, feeble cardiac action, delirium, and prostration—are due not so much to the growth in the tissues of the typhoid bacillus as to the superadded growth of the millions of cocci which are absorbed into the system from the sloughing glands by the veins and lacteals among which these glands are embedded.

Cadogan-place, S.W.

[3] THE LANCET, Dec. 8th, 1900, p. 1639.

FOREIGN UNIVERSITY INTELLIGENCE.—*Brussels:* Dr. Bayet has been appointed Professor of Clinical Dermatology, and Dr. Cheval Professor of Clinical Laryngology.—*Halle:* Dr. Fritz Haasler, *privat-docent* of surgery, has been granted the title of Professor.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ST. GEORGE'S HOSPITAL.

A CENTRAL TUMOUR OF THE SHAFT OF THE RADIUS TREATED BY ENUCLEATION.

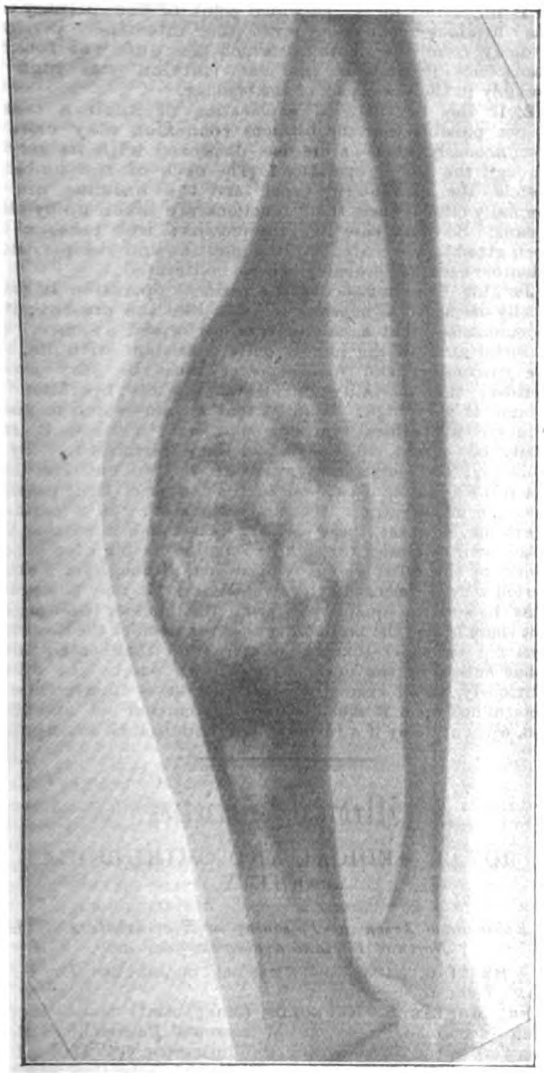
(Under the care of Mr. MARMADUKE SHEILD.)

THE advisability of the employment of enucleation for the treatment of a tumour of bone must depend chiefly on the nature of the growth. For non-malignant tumours this operation may safely be performed, and it is applicable even to cases of central chondromata, in which formerly amputation was always considered necessary. But in any form of malignant growth there is great risk of recurrence. And although in some cases of myeloid sarcoma no recurrence has been recorded after enucleation this must sometimes be due to the case having been reported soon after the operation. Still a sufficient number of cases have been put on record in which the less malignant forms of malignant growths occurring in the interior of bones have been treated by enucleation, and no recurrence has occurred even after several years. The treatment is therefore advisable whenever the slowness of growth or the microscopic structure of the tumour suggests that the malignancy is slight. For the notes of the case we are indebted to Mr. C. R. Keyser, F.R.C.S. Eng., surgical registrar.

A small, spare, and excessively anæmic woman, aged 19 years, was admitted into St. George's Hospital on Sept. 18th, 1900, under the care of Mr. Marmaduke Sheild, suffering from a tumour of the right forearm. The history was as follows. Ten years ago, whilst swinging on a ladder, she twisted her right arm and "broke a small bone." On the removal of the splints some weeks later the swelling which she on admission complained of was discovered. It had gradually increased in size and gave rise to pain at times in the arm and fingers. She was positive that the tumour was of 10 years' duration. On examining the right forearm there was an oval-shaped tumour, obviously an enlargement of the radius, about midway between the elbow and the wrist, but projecting mostly towards the radial side of the arm. It was of stony hardness, with some increase of heat on the surface, and there were many dilated veins coursing over it. It was not adherent to the skin, and no softening, bruit, pulsation, or egg-shell crackling could be detected. In length it measured three inches and the circumference at its widest part was seven and a half inches. The muscles of the forearm and hand were somewhat wasted, but she stated that the right hand was just as useful and as strong as the left. Aching pain was constantly present. It was thought at "consultations" that the tumour was either a very slowly growing (so-called) myeloid sarcoma, an enchondroma, an old fracture with excessive formation of bone, or some rare form of osseous cyst, such as hydatid or sanguineous cyst, but in any case that it ought to be explored and dealt with according to what was found.

On Oct. 4th, ether having been given, Mr. Sheild applied an Esmarch's bandage to the limb and then made an incision about five inches long on the radial side of the tumour on its dorsal aspect and exposed the bone and trephined it. The wall of the tumour was very thin and its cavity was partially divided up into loculi by thin bony septa. These can be well seen in the striking skiagram which was taken at the hospital by Mr. Addyman in charge of the Roentgen-ray apparatus. The bony wall of the tumour was cut away for about four inches and the contents, which were soft, and yellowish in colour, were scooped out with a sharp spoon. The small lower growth seen in the skiagram was left alone. The inner aspect of the hollow was then thoroughly cauterised and swabbed over with pure

carbolic acid, and the great cavity was finally packed tightly with iodoform gauze soaked in turpentine. An antiseptic dressing and a splint were bandaged on and the constricting band was removed. Absolutely no hæmorrhage occurred.



Skiagram of tumour showing loculi formed by thin bony septa.

Dr. H. D. Rolleston, who kindly examined the tumour microscopically, reported that the "growth shows myxomatous tissue, and in places the structure suggests a spindle-celled sarcoma, while in others there are young cartilage cells. It is more probably a myxo-chondroma with recent sarcomatous change than a chondrifying myxosarcoma. There are numerous areas of fatty degeneration in the tumour."

The cavity slowly became obliterated by granulation tissue, and the gauze packing, which was removed daily after soaking the arm for some time previously in a bath of hot boric lotion, was omitted on Oct. 22nd. On Nov. 3rd the patient unfortunately developed a severe sore-throat, and the tonsils and uvula rapidly became covered with a yellowish white exudation, and the glands behind the angle of the jaw were enlarged and tender. The temperature, however, never rose above 99·8°F., and although the exudation was examined several times by Dr. C. Slater, bacteriologist to the hospital, no diphtheria bacilli were ever found. By Nov. 10th the throat was well and the wound in the forearm was practically healed, and she was discharged from the hospital on Nov. 17th. Her present condition is excellent. The swelling is much smaller, the arm is strong and can be used freely, and all pain has disappeared.

Remarks by MR. MARMADUKE SHEILD.—It is too early to say if the cure can be considered permanent. The suspicion of sarcomatous elements being mixed with the cartilage makes one cautious in prognosis. In instances of chondrosarcoma of the bones the growth has repeatedly been known to recur in other parts, as the lungs or the meninges of the brain. The consolidation and shrinkage of the osseous shell, however, look very promising, and time alone can settle the question of local or general recurrence. The skiagram shows a small growth lower down in the shaft. This may possibly take on growth and expand the bone, but if it does so it will be treated in the same way as the larger growth.

This case is an extremely interesting example of what help may be obtained by skiagraphy in the diagnosis of tumours of the bones. Of course, all exostoses appear plainly. Periosteal sarcomata merely give a faint shade unless impregnated with calcareous salts. Cavities in the bone, the site of cysts or abscesses, are usually distinctly demonstrated. In the present illustration the lobulated outline characteristic of cartilaginous tumours is plainly seen. And this, with the long history of the growth, rendered an approximate diagnosis possible.

Enucleation of tumours of bone has long been practised by surgeons, but the true ultimate results are perhaps hardly enough known. Many of the cases are done in hospital practice, and the patients are lost sight of, and the experience gained is lost or lies buried in the private mausoleums of hospital notes. Hitherto the operation has usually been done for myeloid growths, and I have seen it twice performed for these tumours in the head of the tibia. Both cases were very unfavourable. In one the growth rapidly recurred; in the other sepsis supervened and the knee-joint suppurated. The operation has also been done for angiomata of bone—so-called osteo-aneurysm. The differential diagnosis of these growths from very vascular sarcomata is vague and unsatisfactory, and in some reported cases diagnostic errors are manifest.

As regards central enchondromata of bone they are undoubtedly rare. By far the greater number of these tumours originate on the surface of the bones, in which by pressure they may form deep hollows. Fixed by the periosteum and fascia the similarity to a tumour growing out of a bone is very great. I have seen one of the best of the former surgeons in London amputate a finger when he supposed the bone was distended by a cartilaginous tumour, and the growth fell from the bone upon the ground after the periosteum was divided over it. The appearances of the cartilage in the present case, especially the lower patch, are very suggestive of "islets" of undeveloped cartilage left in the bone, though there is no evidence of old marked rickets in the patient.

The case is of importance and interest in showing how far central tumours can be diagnosed by the x rays and as affording an undoubted example of the efficacy of the practice of enucleation in suitable cases. The method of operating, making the part exsanguine and stuffing with turpentine gauze before removing the bandage above, renders it possible to perform such operations with no loss of blood whatever. My previous experience of enucleation of tumours of bone has been confined to the jaws. I have had one instance of enucleation of a myeloma from the antrum of Highmore and one from the lower jaw which seemed permanently cured. At least, there was no return after three years. I have also had one case of large cyst of the lower jaw which contained brownish fluid sparkling with cholesterine. This was opened, scraped out, and stuffed, with a tedious after-treatment, but ultimate cure. I never was able to establish clearly the pathology of this remarkable cyst, but I believe it was quite unconnected with dental causes.

CUMNOCK COTTAGE HOSPITAL, AYRSHIRE, N.B.

A CASE OF ABSENCE OF THE ANUS AND RECTUM, WITH COMMUNICATION BETWEEN THE INTESTINE AND URINARY TRACT; OPERATION WITH RECOVERY.

(Under the care of Dr. JAMES MCQUEEN.)

DR. J. MCQUEEN is to be congratulated on the favourable result of the operation which he performed in the following case, for these abnormal communications between the rectum

and bladder are not prone to close spontaneously, even though a free way be made for the contents of the bowel. He was, however, clearly in the right in endeavouring to establish the normal channel. This should always be done if it be possible to reach the rectum from the perineum, for in these cases it may be found practicable to close the recto-vesical communication at a subsequent operation. Formerly it was advised, as he mentions in his remarks, to make an artificial anus in the inguinal region to divert the fæces, but of late years it has been recognised that the benefits of a normally situated anus outweigh the extra risks of attempting to open the bowel from the perineum and the possibility of non-closure of the recto-vesical fistula.

A married woman was confined at the Cumnock Cottage Hospital on July 23rd, 1900, of a healthy, well-nourished male child. While visiting her on the following day Dr. McQueen's attention was directed by the midwife to the fact that there was "something peculiar" about the anus of the child. On examination it was found that the anus was absent and that at the point where it would have been expected there was a papillary projection closely resembling a small external pile. There was no bulging in the perineum. During the examination of the child a small quantity of fæcal-stained mucus exuded from the urethra. On inquiry it was found that this had occurred on several occasions since birth. After explaining the serious nature of the condition permission was obtained to attempt to remedy it.

The papilliform projection already noted was first removed and the incision was extended towards both the coccyx and the pubes. As there was no appearance of a rectum or any bulging point dissection was carefully carried up, keeping well into the surface of the sacrum. On getting to a depth of about one and a quarter inches a tense shining membrane was met. On inserting the finger it was found that this bulged downwards when the infant cried or strained. With some difficulty the membrane was seized with a bulldog forceps, and on making an exploratory puncture some meconial-stained fluid exuded. The gut was now separated from its connexions, but considering the depth and narrowness of the opening and the proximity of the peritoneum this could not be done to any great extent. The gut having been pulled down to the surface was incised for about half an inch and a large quantity of meconium was evacuated. The lips of the opening into the bowel were stitched to the lips of the cutaneous incision and a dry dressing was applied.

The progress of the case for the next two days was uneventful. On the third day it was found that the stitches had sloughed out of the friable perineal tissues. The gut had retracted a short distance, but the red, pouting mucous membrane formed a guide to the object sought. It was again pulled down and stitched as before, but on the fourth day the stitches again gave way On this occasion, however, the bowel had not retracted so far and consequently it was deemed advisable to leave the structures as they lay. Four weeks later the orifice became constricted and fæcal matter was again passed from the urethra, but not in great quantity. Digital dilatation was performed and continued once a week for three weeks, the mother being instructed to pass a bougie twice daily. The bougie was afterwards alone used, but in 10 days slight constriction again occurred. On inserting the finger a little fæcal matter exuded from the penis, although the mother had not observed any for some weeks previously Since then the case has proceeded in an eminently satisfactory manner. For the last 15 weeks no fæces appeared in the urine and the bougie is now only occasionally used. The only thing that one can note on external examination is that the anus is deeply planted, doubtless owing to the gut dragging on the surface incision. The child's health has all along been excellent, and he is at present (aged five and a half months) a well-nourished, healthy child.

Remarks by Dr. MCQUEEN.—The above case seems to be interesting from two points of view, especially because of the probable etiological explanation of the condition viewed from a developmental standpoint, and the bearing of this on the operative procedure and its result.

1. The bladder and urethral tract develop from the allantois which is an invagination of the wall of the hinder part of the primitive intestine. The neck of the allantois becomes obliterated, but in the case noted this seems to have persisted, maintaining the connexion between the blind pouch of gut and some part of the urinary tract during extra-uterine life. In addition the proctodæum was absent and consequently no rectum was formed to evacuate the contents of the intestine. The fistulous tract which persisted was analogous to a Meckel's diverticulum—the persistent neck of the umbilical vesicle, or to a persistent neurenteric canal communicating with the post-anal gut or to a patent urachus. All of these conditions are found as anomalies in extra-uterine life. In the case under discussion it is impossible to say at which point of the urinary tract the fistulous connexion with the intestine persisted. Judging from the depth at which the gut was found it seems not improbable that the junction was high up, possibly in the lower part of the bladder.

2. If this be the real explanation of such a case is it not possible that the fistulous connexion may close up spontaneously when nature has dispensed with its services through the aid of operation? The neck of the umbilical vesicle, the neurenteric canal, and the urachus are all normally closed when their functions are taken up by other organs. So in a case like the present: free passage has been given to the contents of the intestine and the persistent allantoic neck has probably become obliterated.

Judging from text-books the perineal operation is practically discarded as hopeless in cases like the present; it is recommended that a colotomy be performed at once. An artificial anus in the loin is quite consistent with life, but the discomfort and inconvenience must be very great. Besides, the mortality incidental to this operation in infants is very high. Granted that a vain search be made through a perineal incision in such a case, it can easily be closed up and a colotomy performed. By a colotomy, of course, the fæces are thrown out ere they reach the allantoic neck, and so the danger of their passage into the urinary tract is entirely obviated. In a perineal operation, however, there seems a reasonable hope that the fistula will be closed through its function having been superseded by the relief given by operation, although for a short period a little fæces may pass at times. It may be argued that the smallest quantity entering the bladder is a danger, but there is also the probability that the neck of the allantois will not be wider than the urethra, and that consequently what enters by the one can be thrown out by the other. Obviously, at all events, whatever operative interference is determined upon it must be radically carried out, and that, too, without delay if a favourable termination be anticipated.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Epidemic of Arsenical Poisoning in Beer-drinkers in the North of England during the year 1900.

A MEETING of this society was held on Jan. 8th, Dr. F. W. PAVY being in the chair.

Dr. ERNEST S. REYNOLDS (Manchester) made a communication on an Epidemic of Arsenical Poisoning in Beer-drinkers in the North of England during the year 1900 (illustrated by lantern slides). Dr. Reynolds's attention was first drawn to this subject in June, 1899, when he noticed an unusual number of cases of various skin eruptions, amongst them as many as five or six suffering from erythromelalgia in the workhouse infirmary. Later there was an unusual number of cases of peripheral neuritis. He then noticed that the skin eruptions occurred in the patients suffering from neuritis, and remembering that herpes might be produced by arsenic he suspected the beer, which was the apparent cause of the multiple neuritis in these patients. Professor Sheridan Delépine analysed various specimens of beer and found that they contained quantities of arsenic varying from two to four parts per million, which was equivalent to about one grain of arsenious oxide in three gallons. The same observer had found that invert sugar might contain 0·2 parts per 1000, glucose 0·8 parts per 1000, and sulphuric acid as much as 1·4 per cent. of arsenious acid, which was equivalent to four ounces of arsenious acid in the gallon, all of which substances were used in the manufacture of beer. Traces of arsenic could also be found in "sulphured" hops, various malts (from the anthracite used in manufacture), and in the vulcanite tubing. Various observations had led to the discovery that many beers were extensively contaminated with arsenic and that the beer and stout in

London contained a good deal of arsenic. The epidemic under investigation had occurred chiefly in the north of England and to some extent in the midland counties. Many thousands of persons had been affected. It was not possible to get accurate figures, but Dr. J. Niven, the medical officer of health of Manchester, had estimated that at least 2000 persons in Manchester had suffered from arsenical poisoning. The patients complained of a variety of symptoms, such as pain in the feet and limbs, pins-and-needles, tingling in the soles of the feet, general weakness, difficulty of walking, swollen feet, and vomiting and diarrhœa. The aspect presented by the patients was so typical that a diagnosis could be made at sight by those accustomed to see these cases. There was a puffiness, especially about the eyelids, and a deep crimson colour of the face. The walk was also very characteristic—it was as though the patient's feet were sore; later there was the high-stepping gait. Numerous skin eruptions appeared—erythromelalgia was perhaps the commonest. It consisted of a painful red swelling of the hands and feet. This erythematous condition was most intense along the edges, the centre of the palms being almost exempt. The pain was very marked, so that the patients could not sleep. These red patches were followed by keratosis of the hands and feet, the scales being exfoliated so plentifully that a two-ounce bottle could be filled with the flakes in a short time. This symptom (keratosis) was very important in the diagnosis because fair-haired persons did not get pigmentation. If a fair-haired person was affected with such keratosis, accompanied by well-marked peripheral neuritis, there was a strong presumption of arsenical poisoning. There were also scarlatiniform and morbiliform erythematous rashes. The first of these started like scarlet fever with a collaret round the neck. Sometimes there were papular eruptions and sometimes vesicular and bullous eruptions. These rashes might come on as late as six weeks after ceasing to drink the beer. Pigmentation was very common and a study of these cases showed that the older descriptions were not quite correct. It was true that some of the cases presented clear, isolated spaces of normal skin situated in a generalised pigmentation, but this was not always the case. 21 cases had presented herpes in various situations. A study of these had led Dr. Reynolds to the conclusion that herpes could be caused by the direct action of arsenic on the posterior spinal ganglion, and he could not agree with Dr. Henry Head's conclusions on this subject. Sometimes the eruption was preceded by severe neuralgic pains. The nervous systems of these patients had been very extensively affected and their symptoms corresponded in most particulars with what was known as alcoholic paralysis. The intense tenderness of the muscles was very characteristic. There was anæsthesia, but this was rarely complete. The mental condition was peculiar, this being characterised by loss of memory for time and place and a loss of power to initiate ideas; the latter features were wanting in many of the epidemic cases. The arsenical poisoning was seen to affect the heart muscle very seriously. The heart became dilated and there might be œdema of the feet and the chest wall. Death usually ensued from some form of cardiac failure. Dr. Reynolds's cases had presented the same generalised catarrh of the mucous membrane which Brouardel had observed in 1888 in an epidemic affecting 15 persons where arsenic was given for homicidal purposes. *Apropos* of the administration of arsenic in cases of phthisis he (Dr. Reynolds) had noticed that when patients who were the subjects of phthisis had taken the arsenical beer, instead of improving them they had rapidly gone to the bad. Vomiting had been a very constant feature in his cases, affecting as many as 75 per cent., and so also was diarrhœa. The urine of many of the patients had contained arsenic, which could be found as long as two weeks after ceasing to take the contaminated beer. Arsenic was also secreted by the milk. In some of the cases the temperature had been elevated. A study of his cases had led him to the conclusion that arsenic was a cumulative poison and was not eliminated at once. It appeared to affect the skin, the respiratory and digestive mucous membranes, the nervous system, the heart, and the liver. As regards varieties there were four groups: one in which the patients presented *all* the symptoms previously mentioned, a second in which the skin lesions predominated, a third in which the cardiac and other visceral lesions were the most pronounced, and a fourth in which the paralytic symptoms predominated. The disease might last for from 18 months to two years, though some patients got well in a few weeks. There had never been any difficulty about the diagnosis, though similar cases at Chester had been diagnosed as beri-beri by a physician who had practised in the tropics. In beri-beri, however, there were no skin lesions such as these patients presented. Dr. Reynolds then referred to some previous epidemics of arsenical poisoning. In one which was recorded by Chomel in 1828 and was known as the "épidemié de Paris" 40,000 persons had died in seven months. Graves's description of the clinical phenomena in this epidemic exactly tallied with those at Manchester. There had been an epidemic at Havre in 1888 which had affected 15 persons and which had been described by Brouardel and Pouchet. In the same year 480 persons had been attacked at Hyères by arsenic contained in wine, a record of which had been made by Barthelmy. In 1880 there was an epidemic at St. Denis in which 218 persons had been poisoned by arsenical bread. Returning to the Manchester epidemic Dr. Reynolds said that he had had 500 cases under his care; 291 of the patients were males and 209 were females. He was, however, under the impression that more females had been attacked, though they did not so readily come forward for minor complaints, probably from reasons of modesty. As regards the several lesions, herpes, heart affections, and hepatic symptoms had been more common among the men, but all the other symptoms were more marked among the females.

A communication from Sir W. R. GOWERS was read by the SECRETARY in which he drew attention to the remarkable immunity from arsenical poisoning experienced by those patients who took that remedy combined with bromide for a very long time. He had had a very large number of cases of epilepsy in which a proportion of 10 minims of liquor arsenicalis to 60 grains of bromide had been administered for long periods of time, but he only remembered to have seen one case of chronic arsenical poisoning among them. He suggested that alcohol in conjunction with the arsenic was a very potent poison for the production of peripheral neuritis. He narrated several cases in illustration of his statements.

Dr. BUZZARD complimented Dr. Reynolds on his communication. There was no doubt that these cases were examples of multiple peripheral neuritis. Moreover, there seemed no doubt that this was in very large part due to the effects of arsenic, though he could not regard this reagent as the sole cause. Dr. Reynolds had seemed to suggest that all cases of what they now regarded as alcoholic neuritis were in reality a form of arsenical poisoning due to the imbibition of beer. But he could not subscribe to such a theory, for he had seen many cases which had been produced by brandy and wine, and his opinion was that the drinking of crude spirits alone was quite capable of producing peripheral neuritis. This, indeed, was the original doctrine. Later the disease had been traced to beer. Turning to the symptoms of arsenical neuritis, acute tenderness of the muscles was an equally prominent symptom in alcoholic neuritis. Keratosis, he thought, might also be met with in alcoholic cases, and he had seen considerable disturbance of the cuticle on the soles. He would like to ask if the epidemic had occurred in persons who were only moderate drinkers of beer. The relative absence of mental symptoms in Dr. Reynolds's cases confirmed the idea that they were due to arsenic rather than to alcohol. Like Sir William Gowers, he (Dr. Buzzard) could not help drawing a comparison between the arsenical poisoning of beer-drinkers and the absence of symptoms in epileptic and other patients who took far larger quantities of arsenic for longer periods of time. Reference was made to an investigation which had been made into 17 specimens of beer in which arsenic had been found in proportions varying from a mere trace to 0·28 parts per gallon, representing an average, say, of $\frac{11}{100}$ths, or about one-ninth, of a grain of arsenic per gallon of beer. A patient would thus take a quantity of arsenic equivalent to about two-thirds of a minim of Fowler's solution to a glass, and a moderate drinker would only take a tithe of the quantity of arsenic which an epileptic would be taking. What was the cause of this apparent inconsistency? There was no doubt a liability in some persons to suffer from arsenical poisoning, and Dr. Buzzard referred to the case of a man, aged 55 years, who after taking rather less than 15 grains of arsenic in the form of Fowler's solution in the course of seven weeks presented erythematous swelling and exfoliation of the palms of the hands and the soles of the feet, peeling of the skin, loss of

knee-jerks, and diminution and perversion of sensation. He ultimately made a good recovery.

The discussion was adjourned.

OBSTETRICAL SOCIETY OF LONDON.

Primary Ovarian Pregnancy with Rupture 14 Days after last Menstruation.—Exhibition of Specimens.

A MEETING of this society was held on Jan. 2nd, Mr. ALBAN DORAN, the President, being in the chair.

Mr. G. P. ANNING and Mr. HARRY LITTLEWOOD communicated a paper on a case of Primary Ovarian Pregnancy with Rupture 14 days after last Menstruation. The patient was aged 28 years and had been married five months; there had been no previous pregnancy. Menstruation was usually normal. She was operated upon on August 27th, 1900, for a ruptured ectopic gestation, about 36 hours after the rupture. About two pints of blood and clots were removed and a small ovum of about the size of a Barcelona nut was found. This fitted into a firm envelope composed of laminated clot. There was a rent in the right ovary leading to a cavity which contained some blood; into this the ovum and its sac exactly fitted, clearly indicating the primary ovarian origin of the pregnancy. The right tube was removed and showed no evidence of rupture. The left tube was examined and was found to be normal. The cystic portion of the left ovary was removed. The patient made a good recovery. The specimens were shown, with microscopical sections of the ovum, the sac, and a portion of the ovarian wall.

Mr. BLAND-SUTTON remarked that belief in ovarian pregnancy could be traced back more than two centuries, but a critical examination of recorded cases showed that in some instances the supposed ovarian fœtus was in reality a dermoid and in others a sequestered fœtus (lithopædion) in the broad ligament. In a few instances the account of the dissection was so careful and circumstantial as to leave the impression that the formation of the embryo in the ovary could not be denied. It must also be borne in mind that the modern cases prior to 1899 rested upon no safer evidence than the non-detection of the ovary during an operation or upon the post-mortem examination of a person with an advanced extra-uterine gestation. Even such a careful and judicious writer as Dr. Farre did not deny the possibility of a spermatozoon entering an ovarian follicle, but he denied that any case of ovarian gestation had been satisfactorily proved. Mr. Bland-Sutton came to the same conclusion after a study of a much larger number of specimens than were available to Dr. Farre and with the advantage of modern methods of histological research. His (Mr. Bland-Sutton's) investigations had been particularly directed to the very early stages, for he urged as a postulate that if the ovum was really capable of being fertilised in its follicle "an early embryo in its membranes contained in a sac in the ovary" should be forthcoming. He was convinced that the specimen now before the society was an example of early ovarian pregnancy; the only possible objection that could be raised to this view of its nature depended on the fact that Mr. Anning and Mr. Littlewood had not taken any steps to prove that the "mole" had not been ejected through the cœlomic ostium of the tube (tubal abortion). Mr. Bland-Sutton would not press this objection because he had sections of a more complete specimen which quite satisfied him that an ovum could be fertilised whilst in its follicle. Mr. Anning and Mr. Littlewood were entitled to, and would receive, the best thanks of the Obstetrical Society for their kindness and energy in coming from Leeds and recording a case that would become historic. Since the last meeting of the society Mr. Bland-Sutton had visited Amsterdam, and through the courtesy of Dr. Catherine van Tussenbroek had been able to see the early example of ovarian pregnancy described by her and had brought back sections which would be available for inspection by any Fellow of the society. There were a few features particularly worthy of mention in connexion with this important case. The condition of the parts was exactly analogous to that of a tubal mole, so that for convenience of reference they would have to speak of it as an "ovarian mole"; the blood corpuscles in the vessels of the villi were nucleated; there was no trace of a decidua in the ovarian follicle; and it was an interesting fact that in the clinical report of the case it was stated that a decidua had formed in the uterus, and a few days after the operation was discharged with the *douleurs d'accouchement*. Mr. Bland-Sutton further stated that he had always been candid in his expressions of doubt regarding the older cases of alleged ovarian pregnancy inasmuch as they could not be again brought under observation and re-examination in the light of new knowledge; hence his persistent request that the postulate in regard to the presence of an early embryo in a sac inside the ovary should be satisfied. Another matter profoundly interesting to him was the fact that the "mole" with its chorionic villi which had become the criterion for many cases of early tubal pregnancy seemed likely, from this specimen, to become the criterion of early ovarian pregnancy also, and a large field of inquiry had thus been opened, for the condition known as blood cysts of the ovary would now require very careful investigation in the new light afforded by this remarkable and epoch-making specimen.

Dr. A. L. GALABIN thought that the society might be congratulated that this much-controverted question might now be considered finally settled since Mr. Bland-Sutton was converted. He had always believed in the possibility of both ovarian and primary abdominal pregnancy and thought that those who denied it had gone upon an *a priori* assumption that the tube was the only structure besides the uterus which could give primary attachment to the ovum. He had not himself met with a case of ovarian pregnancy but believed that he had met with one of primary abdominal pregnancy which was presented to that society and reported on by a committee as being probably of that nature.

After some remarks by Dr. W. S. A. GRIFFITH and Dr. ROBERT WISE,

Mr. LITTLEWOOD said he thought that the case clearly proved the possibility of a primary ovarian pregnancy and was glad to have had the opportunity of bringing the specimens to the first meeting of the Obstetrical Society in the new century. He thought that the society was greatly indebted to Mr. Bland-Sutton for having gone to Amsterdam and for bringing the specimens which he had shown.

The PRESIDENT referred to his own analysis of cases of alleged primary ovarian pregnancy published in the thirty-fifth volume of the society's Transactions. In both Sänger's and Leopold's specimens there was a lithopædion, and, as might be expected, the relation of the sac to the Fallopian tube could no longer be accurately determined. In Herzfeld's and many other cases the fact of the tube being intact was erroneously taken for proof that the pregnancy could not have begun in its canal. But Patenko's case seemed more probably genuine. In Dr. Croft's case the evidence was strong, but the pregnancy was somewhat advanced. Mr. Bland-Sutton deserved credit for the trouble which he had taken to make sure about van Tussenbroek's case, which seemed to offer almost conclusive evidence of primary ovarian pregnancy. The same might be said of Mr. ANNING's and Mr. Littlewood's case. The President suspected that these primary ovarian pregnancies aborted and broke down early, as seen in Patenko's specimen. Late ectopic gestations could generally be explained as developments, more or less evident, from a tubal sac.

Mr. ANNING replied

The following specimens were exhibited:—

Dr. G. E. HERMAN: Sarcoma of the Stomach.

Dr. HERBERT SPENCER: Large Uterus with Cervical Fibroid removed by abdominal hysterectomy by Doyen's method.

Dr. CUTHBERT LOCKYER: Congenital Omental Hydrocele.

Dr. WILLIAM DUNCAN: Gravid Uterus removed at Full Term by Intra-peritoneal Hysterectomy in a case of Contracted Pelvis.

The PRESIDENT: Acute Torsion of Ovarian Pedicle.

The specimens were discussed by the above and by Dr. GALABIN, Dr. GRIFFITH, and Dr. AMAND ROUTH.

HARVEIAN SOCIETY OF LONDON.

Exhibition of Cases.

A MEETING of this society was held on Jan. 3rd, Dr. W. H. LAMB the President, being in the chair.

Dr. LEONARD GUTHRIE showed a woman, aged 58 years, who had first come under observation two years previously. She then complained of palpitation, dyspnœa, tremblings, flushings, profuse perspiration, vague aches and pains, constipation, and general debility. The catamenia had ceased for two years. She had noticed swelling of her throat for

four months, and on examination the thyroid gland was found to be considerably enlarged. There was no proptosis, but the heart was irregular and intermittent and the pulse-rate was persistently from 120 to 130. She had also fine tremors characteristic of Graves's disease. There were no signs of myxœdema, but thyroid extract in five-grain doses was given tentatively at night only. She professed to feel great relief from this treatment and the goitre gradually dwindled until, in October, 1899, it was barely perceptible. She continued to take a five-grain tabloid of thyroid extract every night until June, 1900, when she was confined to the house by an abscess in her foot and the treatment was discontinued. On returning to hospital in December, 1900, she presented all the signs and symptoms of advanced myxœdema. She had grown very bulky and was so weak that she could hardly walk. Her skin was coarse and quite dry, her complexion was yellow, her cheeks were flushed, her eyelids were bluish and baggy, her hair and eyebrows were falling off, and her speech was thick, indistinct, and slow. The thyroid gland could not be felt, but there were two large soft symmetrical swellings above each clavicle which she had noticed for a month. After a fortnight's treatment by thyroid extract the symptoms and signs of myxœdema had almost subsided, but the pulse was rapid as it had been at first. Only a few cases of myxœdema following Graves's disease had been recorded, but Dr. Guthrie thought that the sequence was not uncommon.—Dr. JAMES TAYLOR discussed the case.

Mr. JACKSON CLARKE showed a man, aged 30 years, one of whose feet he had removed three months ago for a severe injury. The patient's left leg had been caught in the wheel of a tramcar and there was severe contusion of the soft parts nearly to the level of the tibial tuberosity. There was a deep wound below the internal malleolus; the posterior tibial vessels were torn through. The tissues of the sole of the foot were much contused. If primary amputation had been done in this case the limb would have been removed in the upper part of the leg; by waiting it had become possible to do a more conservative operation. When in the presence of severe injuries it was decided to wait every care must be taken to prevent sepsis.—Mr. RAYMOND JOHNSON was strongly in favour of avoiding primary amputation in many severe injuries of the hand and foot, for in many instances the extent to which the parts lost their vitality was much less than was at first expected and thus a formal amputation became unnecessary.

Dr. RISIEN RUSSELL showed a case of Myopathy with marked fibrillary tremors of the muscles in a male, aged 19 years. No other members of the family were similarly affected. The patient had enjoyed good health before the onset of the present illness but had suffered from weakness of the legs five years ago. This weakness had steadily progressed, but much more rapidly since a year ago when the arms first commenced to be weak. Fibrillary tremors were noticed seven months ago. The face was not affected and the muscles of the neck were intact. The lower part of the trapezius was not so well preserved as was the upper part and there was marked wasting of the following muscles: the infra-spinatus, the latissimus dorsi, and the triceps, biceps, and supinator longus. The trunk muscles were weak, as were the extensors and flexors of the hip, the extensors of the knee, and to a slight degree the calf muscles. There was marked atrophy of the glutei and of the quadriceps extensor; the sartorius and the adductors were also wasted and the calves were small. The muscles were symmetrically affected, none of them were enlarged or unduly firm, and those which were atrophied showed diminished excitability to both forms of electrical currents, without evidence of the reaction of degeneration. The fibrillary tremors were very pronounced and were not limited to the atrophied muscles. The triceps-jerks and knee-jerks were absent, the plantar reflex was normal, the sphincters were intact, and there was no blunting of cutaneous sensibility.

Dr. JAMES TAYLOR showed two cases of Syringomyelia. In one case, that of a female, aged 21 years, there were wasting of the small muscles of the right hand and the characteristic claw-like deformity. There was distinct anæsthesia, especially for thermal and painful stimuli, as high as the elbow on that side. There were nystagmus and lateral curvature of the spine but no affection of the face or lower limbs. Her symptoms had commenced about two years ago. The second case was that of a man with paralysis of the sixth, seventh, and twelfth cranial nerves on the right side, anæsthesia of the right side of the face, the right arm and the right side of the trunk, and some muscular wasting especially about the shoulders. There was also a spinal curvature but no affection of the legs. His condition had not appreciably altered in the last six years.—Mr. JACKSON CLARKE asked whether in these cases the spinal curves were of the same character as were those seen in some cases of infantile paralysis—i.e., whether the convexity of each curve was directed to the section of the spinal muscles that were the more extensively paralysed.—Mr. RAYMOND JOHNSON inquired as to the period of the disease at which the scoliosis was likely to develop, and if it ever occurred as the first symptom and that for which the patient alone sought advice.

Dr. HERBERT TILLEY showed a woman, aged 46 years, upon whom he had performed Kundt's Radical Operation for Chronic Empyema of the Left Frontal Sinus. The operation consisted of complete removal of the anterior bony wall of the sinus, curettage of the degenerated mucous membrane lining the cavity, and the application of the anterior soft parts to the posterior bony wall of the sinus. Some of the main features of the operation were briefly dwelt upon and it was pointed out that although the result as regards the cure of the disease was so excellent, yet it was purchased at the price of more deformity than resulted when less of the anterior wall was removed. The latter result had been demonstrated by cases hitherto shown at the society's meetings. The symptoms of which the patient had complained were chronic and severe left frontal headache, discharge of pus from the nose, and nasal obstruction due to polypi. These had completely disappeared since the operation. The patient was in the hospital for 17 days.

Mr. E. W. ROUGHTON showed a man, aged 35 years, with a Lump in the Dorsum of the Tongue. Although it resembled malignant disease he regarded it as a case of syphilitic induration.—Mr. RAYMOND JOHNSON thought that the lump in the tongue, although not malignant, should be excised if it did not subside under anti-syphilitic treatment.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

Bacillus Aerogenes Capsulatus.—Exophthalmic Goitre.—Segmentation of Heart Muscle.—Intra-ocular Sarcoma.—Tuberculosis of the Conjunctiva.

A MEETING of this section was held on Nov. 30th, 1900, Dr. A. C. O'SULLIVAN, the President, being in the chair.

Professor E. J. MCWEENEY gave an account of some work which he had lately done on Bacillus Aerogenes Capsulatus. A man whose arm had been ground almost to a pulp by a threshing machine was admitted into the Mater Misericordiæ Hospital and did not long survive amputation. At the operation a peculiar gelatinous state of the tissues was noted. The day following death the body presented a remarkable appearance, being swollen to twice its size, covered with huge bullæ, nearly black in colour, and crepitant wherever touched. The skin was so softened that a blunt pair of forceps could be thrust through with perfect ease, and from the apertures so made a frothy fluid, made up of turbid serum and sour-smelling gas, issued forth. The microscope revealed large anthrax-like bacilli in enormous numbers, mingled near the operation wound with smaller forms. By means of anaerobic plate cultures, made over alkaline pyrogallol in a special dish [exhibited], isolation of the large bacillus was accomplished, though not without difficulty. It was associated with bacillus coli and a streptococcus, both of which grew quite well in the total absence of free oxygen. The gas-forming bacillus was quite as large as that of anthrax, stained well by Gram's method, was non-motile, devoid of spores, and possessed a thick capsule which usually remained unstained. It appeared to grow most luxuriantly in 1 per cent. of sodium-sulphindigotate-agar, the medium becoming decolourised, save the upper centimetre where the oxygen necessary for the pigmentation was supplied by the atmosphere. It also grew well on ordinary media in an atmosphere of hydrogen, but not in coal-gas. Rabbits killed shortly after intravenous injection with half a cubic centimetre of fluid containing bacilli in suspension became distended with gas. The heart and vessels

contained frothy blood, and the liver was converted into a soft, dark grey mass, riddled with cavities containing gas. [A specimen of such a liver—the "Schaumleber" of German post-mortem rooms—was exhibited.] A rabbit which had been injected intra-muscularly with the pure culture suffered from a spreading gangrenous process, but this was found at the necropsy to be due to a mixed infection. Professor McWeeney demonstrated a preparation from the gangrenous tissue of the rabbit, showing the large gas-bacilli stained by Gram's method, while the symbiotic intrusive organism was counter-stained red with fuchsin. Contact preparations from anaerobic plate cultures showed a marked tendency of the bacilli to form angles like a capital V. Although the condition in the present case only came on post mortem, the bacillus had been proved by Welch, Flexner, and Nuttall to cause a spreading emphysematous gangrene in the living subject, and had also been found in various other conditions associated with development of gas during life or immediately after death.—Dr. KNOTT asked what was the relationship between this organism and that of anthrax in cases of quarter evil, or, as it was called in Ireland, "black-quarter," which occurred in young cattle.—Professor MCWEENEY, in replying, said that the bacillus coli produced gas in sugar media with just the same amount of vigour as the large bacillus of emphysematous gangrene. The bacillus to which Dr. Knott had alluded as being present in animals, was the bacillus of symptomatic anthrax, or Rauschbrand, known to the French as Chauveau's bacillus. It was an anaerobe closely allied to the one which he had shown, but differing from it in forming spores, in being motile, and in not being capsulated.

Dr. O'CARROLL read notes of a case of Exophthalmic Goitre in a girl, about 20 years of age. Post mortem the thyroid gland, which had been hardly at all enlarged in the neck, was seen to be greatly enlarged within the thorax, where it almost impinged against the arch of the aorta and probably did actually impinge upon it when both structures were distended with blood during life. The case was further noticeable, inasmuch as the thymus was so large as to reach down to the front of the pericardium, and it presented the structure of that organ found in infancy.

Dr. H. C. EARL showed a microscopical section of the Heart of a Woman who had died from poisoning by phosphorus. The section showed marked segmentation of the muscle fibre with great separation of the segments. There was no fatty degeneration of the muscles.

Mr. ARTHUR BENSON exhibited specimens of Choroidal Sarcomata mounted in glycerine jelly. One tumour had been removed from a man, aged 62 years, and was a pigmented sarcoma of the choroid. The second specimen was one of non-pigmented sarcoma of the choroid—a much rarer form of tumour than the pigmented. It occurred in a man aged 49 years.

Mr. J. B. STORY showed a case of Tuberculosis of the Conjunctiva, the patient being a boy, aged 15 years. A swelling of the lower eyelid had existed for two months. On everting the lid a small vascular tumour was found springing from the fornix. It looked uncommonly like a cock's comb and was of about the size of a filbert.

HUNTERIAN SOCIETY.—A pathological evening of this society was held on Nov. 28th, 1900, Mr. Dundas Grant, the President, being in the chair.—Dr. Glover Lyon showed a specimen of Total Atrophy of one Kidney and extreme atrophy of the other. The specimen was taken from a boy, aged 16 years, but apparently not older than 10 years, who until a few months before death had been able to follow his occupation of tin-worker. For a few months before admission he had suffered from drowsiness, headache, and diarrhœa. On admission he showed somewhat indefinite symptoms of contracted granular kidney, but there was no œdema present. Death had been due to coma. The interest of the case consisted in the fact that the patient had been able to live comfortably up to the age of 16 years when at death there was certainly not more than one-twentieth of the normal kidney substance available. The pelvis of the left kidney was greatly dilated with a small amount of fibrotic renal tissue superficial to it less than a quarter of an inch in thickness and about three-quarters of an inch long. The ureter was not dilated, but there was no opening of it into the badder. The right kidney was greatly diminished in size. There was great dilatation of the pelvis and the thickness of the renal substance was only from half to three-quarters of an inch. The distinction between the cortex and medulla was with difficulty made out, but the cortex seemed to be relatively very thin.—Dr. F. J. Smith showed the Lungs and Liver of a man, aged 48 years, who had died in the London Hospital. On admission his lungs showed very few physical signs of disease, a little prolonged expiration and an occasional click but nothing else; the sputum, however, showed numerous tubercle bacilli; the liver was much enlarged, it could be felt below the umbilicus and presented many hard nodules; it was not tender. The man was very much emaciated. The diagnosis made was carcinoma of the liver which was considered to be in itself sufficient to account for all the symptoms, though the bacilli in the sputum gave indications of phthisis. The man was very ill on admission and rapidly sank. The post-mortem examination showed that the upper half of each lung was riddled with tuberculous cavities and collections of tuberculous nodules; the liver was stuffed full of nodular masses of a carcinoma the appearance of which suggested that they were secondary, and further search revealed a carcinomatous ulcer of the œsophagus about two and a half inches long, the lower end of which was about three inches from the cardiac opening of the stomach; the ulcer had perforated the œsophagus and would have caused an abscess round the œsophagus had the patient lived.—Dr. Smith also showed the Stomach of a Woman, aged 24 years, the history of whom was that five years ago she had had an attack of severe "indigestion." From this she had never completely recovered, and two years ago she brought up about a teacupful of blood. From that time she had never been able to take any food without great pain. Every form of medical treatment had been tried in vain and finally Dr. Smith, on a diagnosis of chronic gastric ulcer, had taken her in to see what surgery could do for her relief. Mr. Mansell Moullin had opened the abdomen, and finding the stomach quite normal to the touch he had not proceeded further but merely closed the wound again. For five days she had done remarkably well but on the sixth day she was suddenly taken ill with collapse and extremely slow respiration, rapidly followed by death. At the necropsy absolutely nothing was found by the naked eye to account for death; the brain was carefully cut up, but showed no naked-eye changes; the heart, lungs, and kidneys seemed absolutely healthy. The stomach contained two or three large clots of milk, but as the patient had no pain before death Dr. Smith thought that overloading of the stomach was a very doubtful element; in fact, he was absolutely unable to account for death. The inside of the stomach showed an old radiating scar of ulcers on the upper posterior wall about three inches from the pylorus, a sufficient cause of the dyspeptic symptoms during life. Dr. Smith remarked that the case added one more difficulty to the numerous ones surrounding the treatment of alleged gastric ulcers, for in face of the symptoms and post-mortem appearances he did not know any means by which the likelihood of relief from surgery could be ascertained previous to exploration, and the fact of death, coupled with the entire absence of apparent causation, showed that there were still unexplained dangers in abdominal surgery. At the same time, considering the severity of the symptoms he was still of opinion that the right course had been pursued.—Dr. Smith also showed a Heart and Pericardium showing the effects of Adherent Pericardium. The specimen was taken from a man, aged 21 years, who had his first attack of rheumatism at the age of 20½ years. His history presented no points of special interest, the symptoms being those of valvular incompetence and cardiac failure. The necropsy showed the pericardium to be very adherent to the chest wall and universally so to the ventricular surface of the heart, so that the pericardial sac as such was entirely obliterated. The heart weighed 32½ ounces. Dr. Smith thought that such a degree of hypertrophy could not have been reached in five years if it were due to the valvular mischief only. He thought the specimen showed very well the remote dangers of rheumatic pericarditis.—Dr. David Ross showed a case of Congenital Obliteration of the Bile-ducts. The patient was the youngest of three children of healthy parents with no history of syphilis and was brought to Dr. Ross when six weeks old suffering from jaundice which had existed from birth. When born the child appeared normal and well nourished and continued to thrive for about a couple of months when she began to get gradually emaciated. The navel discharged for a month

before finally healing. The jaundice was very marked; the motions had been devoid of colour from the very first, and the urine was very deeply bile-stained. At two months the characteristic subcutaneous hæmorrhages began to appear at various parts, together with occasional melæna. On the right side the liver dulness extended almost to the level of the umbilicus and on the left to about an inch below the costal margin. When 73 days old the child died. At the necropsy the gall-bladder was found to be non-existent, being represented by a few fibrous shreds. The duodenal papilla was well formed, but a bristle passed only into the pancreatic duct and not into the common bile-duct. Microscopically it was seen that the change was due to a small-celled infiltration confined to the interlobular spaces rather than to the presence of much fibrous tissue between the cells. There was no new formation and no great distension of the bile-ducts.—Dr. W. H. Kelson, Dr. J. H. Bryant, Dr. Williams, Mr. J. H. Targett, Mr. Hope Grant, Dr. T. G. Stevens, and the President discussed the cases.

FORFARSHIRE MEDICAL ASSOCIATION. — An ordinary meeting of this association was held in the University College, Dundee, on Dec. 13th, 1900, Mr. C. S. Young, Vice-President, being in the chair.—Dr. Mackie Whyte read a paper on Recent Researches on Alcohol and their Effect on Treatment. He adhered to the views of Schmiedeberg in regarding alcohol not as a stimulant of functional activity but as a paralysing agent. This action on the brain and on muscle was gone over at some length, reference being made to the work of Kraepelin, Destrée, and others. There was no proof of a stimulating effect on the heart. Binz's experiments on the effect of alcohol on respiration were discussed. The effect of alcohol on the tissues was shown in various ways to be deleterious, the proof that it was a protoplasmic poison being considered to be fairly complete. While alcohol taken in moderate amount was to a great extent oxidised its food value must be largely discounted by its other effects. Their knowledge of metabolism was very far from being complete; what they wanted to know in regard to alcohol was what it did before it was transformed into water and carbonic acid. The bearing of these views on the treatment of various classes of disease was next described. The action of alcohol on acute febrile and infectious disorders was gone into at some length, pneumonia being taken as a convenient type.—The Chairman, in the discussion which followed, pointed out the interest such a paper had and referred to the effect of alcohol on the circulation and stated that it was his practice to use alcohol chiefly in tiding over a crisis.—Dr. J. W. Miller said that he agreed in almost everything with the paper. In his own practice he had been steadily diminishing the quantity of alcohol prescribed for patients, especially in acute cases, such as pneumonia and fevers. In pneumonia he never used alcohol largely and was of opinion that it should be used only in the strictest moderation. Dr. Whyte had referred to the danger of discontinuing alcohol suddenly in those cases where its bad effects were beginning to show themselves, but in 28 years' experience of prison practice in which alcohol was at once stopped on admission he had not found such a large number of cases of delirium tremens as one would expect if the practice referred to were dangerous.—Dr. R. Sinclair in his own practice adopted pretty much the same plan as Dr. Miller. In pneumonia the balance of evidence was entirely in favour of the withholding of alcohol until the crisis, and in the majority of cases even then many cases might do better without than with it. He was perfectly convinced of the absolute harmlessness of omitting alcohol altogether in the case of the majority of healthy individuals. In regard to the phthisical cases he entirely agreed with Dr. Whyte; phthisical patients who had been intemperate generally went downhill very rapidly, but with all deference he thought that there was another side to the question. It was, he said, very well known that if a patient with a tendency to phthisis developed the gouty habit it was very hostile to tuberculosis. In the case of young children with a tendency to waste and to take catarrhs readily a little alcohol disguised with bitter infusion so that it should be disagreeable was of distinct advantage in promoting digestion and assimilation. Obstinate neuralgias common in the aged were treated with advantage not only *with quinine* but with a modicum of alcohol along with it. He also thought that ether from the laboratory was not the same as volatile ethers in wines after fermentation and in bottle.—Professor C. R. Marshall agreed that alcohol was a protoplasmic poison and consequently practically toxic to all forms of tissue activity. It was not a stimulant to the brain and there was no scientific evidence to show that the heart was stimulated by alcohol; if it did have any effect it was an indirect one through the stomach. He did not think that Dr. Whyte had laid sufficient stress upon its local effects upon the alimentary mucous membrane. He thought that alcohol had a beneficent effect upon the digestion and did assist the assimilation of food. Alcohol was also a food sparer. It could replace to a certain extent some of the carbohydrate of the food. It was absorbed readily and was easily broken up in the system, but its power in this direction was limited. On the whole he thought that alcohol ought to be regarded as a drug and not as a food or poison except in a limited sense.—Professor A. M. Stalker considered that there was no shadow of proof that alcohol was a cardiac stimulant. He would be inclined under any circumstances to give a patient suffering from pneumonia the chance of recovering without alcohol. As a hypnotic he would use it in certain circumstances and considered it the safest with children.—Dr. G. A. Pirie considered that until physiology could speak with a more certain voice treatment of disease by alcohol must rest on a very insecure foundation, and indeed was dependent mostly upon clinical observation, which was steadily limiting the amount prescribed in many diseases and abolishing it altogether in some.—Dr. Whyte, in reply, stated that the extreme physiological dose was put down as two and a half ounces of alcohol, and that there was now a tendency to diminish and bring this down to about one ounce as the amount which a man could safely from day to day indulge in without producing degenerations. The fact of alcohol being a food-sparer was of very little importance. What they wanted to know was what were the other effects of alcohol; if it was burned up in the body, was it or was it not, as Schäfer said, a deleterious drug? He held that it was.—Professor Marshall said that he assumed it was a protoplasmic poison; that seemed to him to do away with its food value.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—An ordinary meeting of this society was held on Jan. 4th, Dr. F. F. Schacht, the President, being in the chair.—Several new members were balloted for and elected.—The Secretary read a letter from Mrs. Symons Eccles thanking the society for its letter of sympathy on the death of her husband, Dr. A. Symons Eccles, a Vice-President of the society.—Mr. J. Jackson Clarke read a paper on Some Surgical Phases of Rheumatoid Arthritis and Similar Affections. The conditions dealt with were chiefly deformities and included spinal curvature, various joint contractions such as hammer-toe and flat-foot, talipes equino varus with pes cavus from gouty or rheumatoid myositis, Dupuytren's contraction, and deformities due to paralysis from peripheral neuritis. Mr. Clarke dealt on the need of the coöperation of the physician and surgeon in the management of these conditions. In many of the cases instruments were of the utmost value in treatment. He thought that the surgeon should be able to prescribe instruments with as much completeness as the physician prescribed medicines. Cases and photographs illustrating the paper were shown.—The President thanked Mr. Jackson Clarke for a very interesting paper.—Mr. C. R. B. Keetley thought the subject almost too wide a one for an evening's discussion, more especially as it was hardly understood what was meant by rheumatoid arthritis. He thought it was generally understood to be some infection of the blood which tended to influence lining membranes of joints and their vascular tissues and which produced pain and inflammation but did not go on to suppuration; at the same time it profoundly altered the nutrition of the joint and surrounding tissues. It was generally taught that gout was the cause of Dupuytren's contraction, but he had had cases lately which had a clear rheumatic history. He thought that some cases of syphilitic or gonorrhœal infection were sometimes diagnosed as rheumatoid arthritis. Bad cases of flat-foot he often treated by Ogston's operation and he obtained a very good result thereby. In one extreme case he had excised the astragalus with benefit. He thought that severe cases might also be treated by excision of the tibia above the ankle-joint, but preferred Ogston's operation.—Dr. F. H. Alderson said he did not think that hammer-toe was always the result of rheumatism and he had had cases with no history of rheumatism at all. Much might be done with

mild cases of talipes by suitable light splints and massage and manipulations.—Mr. Clarke replied.—Dr. J. G. Pardoe then read a paper on the Use of the Retained Catheter in Some Lesions and Suppurations of the Male Urinary Passages. He said that in English literature relating to this subject there was a very inadequate account of a mode of treatment which was satisfactory, simple, and easy of application in certain diseases of the male urino-genital tract. He considered the application of the method first to the treatment and certain vesical conditions and, secondly, to morbid states of the urethra. It was most useful in all inflammatory conditions of the bladder in which pus was present in the urine. Constant drainage obviated the painful spasm present in these cases and allowed of frequent washing out of the bladder. Dr. Pardoe further advocated the use of the retained catheter in cases of complete prostate obstruction, congested prostates accompanied by hæmorrhage, and enlarged prostate complicated by stone in the bladder which necessitated the use of the lithotrite; in these cases one was able to more thoroughly evacuate the bladder of retained débris. He also urged its use in cases of suprapubic cystotomy, especially where primary suture of the bladder was performed. Cases of tuberculous and simple ulceration of the bladder were not favourable ones for this means of drainage and were often rendered worse by its use. He then described and advocated the more frequent use of the retained catheter in various urethral conditions, such as ruptured urethra, Syme's and Wheelhouse's operations, and more especially after the operation of internal urethrotomy. The majority of French surgeons, led by Guyon, insisted upon its use in this operation as a necessity. The points to be observed in carrying out this method were: (1) that the catheter should have a large lumen; (2) that it should have one or two large eyes; (3) that it be incompressible; and (4) that it should be capable of easy sterilisation. The best catheters to use were soft rubber ones, as Jacques' catheter or the best silk web catheters with two eyes. He insisted on the necessity of careful cleansing of the glans, prepuce, and meatus with some antiseptic previous to tying in the catheter which should not be passed too far. Four tapes should be tied on to the catheter and these fixed with a strip of strapping below the corona and the whole of the glans covered with antiseptic gauze. Pain resulting from a retained catheter was generally due to one of two causes: (1) intermittent or incomplete drainage, or (2) a badly fitting catheter.—The President thanked Dr. Pardoe for a very interesting and instructive paper. The practice suggested was in advance of ordinary teaching on the subject, and all present would be glad to feel that the use of the retained catheter was one which they could more freely fall back upon.—Dr. Alderson had found leeches to the anus very useful in cases of hæmorrhage from a congested prostate. He also advocated the use of boric acid internally when catheters were tied in as a means of keeping the urine sweet.—The President proposed a vote of thanks to Dr. Pardoe, which was carried.—Dr. Pardoe replied.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A special meeting of this society was held on Nov. 27th, 1900, when an address was delivered by Professor Clifford Allbutt, F.R.S., on the Clinical Bearings of High Arterial Pressure.—The annual dinner was held after the meeting, at which Professor Allbutt and about 70 members and guests were present.—The ordinary monthly meeting was held on Dec. 18th, Mr. P. E. Miall being in the chair.—Dr. William Mitchell showed: (1) A Cast of the Genital Region from a case of Inguinal Hernia after the operation for "radical cure" had been performed; and (2) the Eyeball from a case of Perforating Ulcer of the Cornea.—Dr. C. F. M. Althorp showed the following:—1 A patient on whom he had operated for Irreducible Dislocation of the Proximal Phalanx of the Index Finger. The dislocation had been maintained by the glenoid ligament. The patient had almost perfect use of the finger and was able to use it for writing. 2. A child, aged seven years, with Secondary Deposit of Sarcoma in the Temporal Region. The forearm had been amputated for periosteal sarcoma of the radius six months previously.—Mr. W. H. Horrocks showed a specimen of Strangulation of a Loop of Intestine through an Aperture in the Mesentery The patient, a boy, aged 10 years, had a strangulated hernia which had been reduced under an anæsthetic. Pain and sudden collapse supervened a few hours after reduction of the hernia and the condition exhibited was found post mortem. The hernia had been successfully reduced.—Dr. A. Bronner showed: (1) Archer's Perimeter; and (2) a child whom he had operated on for Acute Empyema of the Frontal Sinus. The disease came on after scarlet fever and extensive caries of the bone was found at the operation.—Mr. Miall read notes on a case of Forced Delivery at the Seventh Month in Contracted Pelvis. The patient was 24 years of age and had been delivered two years previously by craniotomy. The pelvis was flattened and generally contracted, its measurements being: interior conjugate, three inches; distance between the spines of the ileum, eight and one-eighth inches; distance between the iliac crests, eight and a half inches; and external conjugate, nine and a quarter inches. An attempt to bring on labour was first made by introducing wood-wool and glycerine plugs into the cervix and also by injecting glycerine. No pains having occurred after four hours a screw dilator was introduced and the cervix dilated under chloroform until a medium sized Barnes's bag could be introduced. As soon as the hand could be introduced the membranes were ruptured and internal version performed. Delivery was soon effected and the child cried strongly. The uterus contracted well under pressure and the placenta was born 20 minutes after the child. The whole process, from the commencement of dilatation to the delivery of the placenta, only occupied one and a half hours. There were no spontaneous contractions of the uterus from first to last. The mother made a good recovery but the child died from debility at the end of 20 days. Mr. Miall considered that the procedure he adopted in this case was quite as safe and was more certain than the methods usually employed for inducing premature labour.—Dr. S. Johnston and Mr. R. Mercer discussed the case and Mr. Miall replied.—Dr. Bronner read notes on the Therapeutic Uses of Orthoform and Ferripyrin.—Dr. S. Lodge read notes on a case of Malignant Disease of the Œsophagus associated with Respiratory Obstruction in which both gastrostomy and tracheotomy had been performed. The patient was a woman, aged 60 years, with a stricture high up in the gullet. The stricture of the œsophagus was accompanied by abductor palsy of the vocal cords causing severe spasms of dyspnœa. The patient was alive and enjoying a fair measure of health six months after the gastrostomy.

NORTH OF ENGLAND GYNÆCOLOGICAL AND OBSTETRICAL SOCIETY.—A meeting of this society was held at Owens College, Manchester, on Dec. 21st, 1900, Dr. J. B. Hellier, the President, being in the chair.—Dr. D. Lloyd Roberts (Manchester) showed a Three Months' Fœtus and Placenta from a case of Ruptured Ectopic Gestation. Abdominal section was performed on account of profuse intra-peritoneal hæmorrhage. This bleeding was found to arise from the partially detached placenta and not from the ruptured Fallopian tube.—Dr. J. E. Gemmell (Liverpool) showed the Appendages removed by Abdominal Section from a case of Inflammatory Disease of the Tubes and Ovaries. The case was of interest inasmuch as the inflammatory masses occupied the pouch of Douglas and protruded through the vulval orifice, resembling at first sight a prolapsed retroverted uterus.—Dr. J. W. Martin (Sheffield) showed a Solid Ovarian Tumour removed from a girl, aged 17 years. The tumour weighed three and a half pounds and was non-adherent. Microscopically it was found to be a round-celled sarcoma.—The President gave an address entitled: "On Infection of the Genital Canal." He said that the study of the pathogenic organisms of the genital tract had brought their knowledge of puerperal diseases into a line with general surgical pathology, and the so-called "puerperal fever" was no longer the mystery which it was formerly held to be. They now knew that with aseptic precautions even the pregnant uterus and its appendages could be safely subjected to surgical operations. In a recently delivered woman they had a long sinus leading to a large wound surface. The walls of this tract were often bruised and had their vitality diminished, and in the fundus uteri was a collection of fluid and blood-clot, with portions of necrosing tissue—a choice breeding-ground for any micro-organisms which might effect an entrance. Further, the large plexuses of lymphatic vessels and the patent Fallopian tubes favoured an extensive invasion of the micro-organisms. The germs of puerperal fever were precisely those of ordinary surgical wound infection, and the conditions of success in modern midwifery were the same as those which

had revolutionised surgery—viz., personal asepsis of the surgeon and nurses, the sterilisation of instruments, and the minimum of interference and manipulation. The systematic cleansing of the genital canal before delivery had not given such good results as leaving well alone. The most important factor in the conveyance of puerperal infection was the hand of the attendant. The President drew attention to the great difficulty of obtaining sterility of the hands, as shown by recent observations, nor was it yet decided how soon they might safely attend a puerperal case after exposure of the hand to a septic infection. The frequency of puerperal infection was largely attributable to the unsanitary conditions of the patients, their clothing, beds, and surroundings. Recent researches had demonstrated the great resisting power of the tissues of the genital canal to infection, and there was no doubt that the large majority of cases of infection recovered spontaneously or with suitable local treatment. The importance of gonorrhœa as a factor in causing infection of the genital canal had been clearly shown in recent years and in former days there was little doubt that infection had frequently been conveyed directly from patient to patient by specula, instruments, &c. It was most probable that in health the genital canal was aseptic or at least contained no pathogenic organisms. The President also drew attention to the harmful effects of foreign bodies in the vagina, such as pessaries, and especially uterine stems, inasmuch as they seriously interfered with the bactericidal effect of the healthy vaginal secretion and so lead to infection.

BRITISH ORTHOPÆDIC SOCIETY.—The twenty-fourth ordinary general meeting of this society was held at the National Orthopædic Hospital, Great Portland-street, W., on Dec. 15th, 1900, Mr. D'Arcy Power being in the chair.—Mr. E. Muirhead Little showed a patient suffering from Infantile Paralysis of the Left Upper Extremity wearing an ingenious instrument which considerably aided the use of the limb.—Mr. H. A. Reeves opened a discussion on Congenital Defects of the Skeleton. Commencing at the skull and face, he passed rapidly over all important skeletal defects, laying stress on those which were amenable to surgical treatment. His remarks were illustrated by much material and a copious supply of photographs and radiographs. Dealing with the spine Mr. Reeves stated that cases of wryneck and lateral and anterior or posterior curvature were due to deficiency of parts of the vertebral bodies as shown by existing specimens, that the direction of the deviation was determined by whether the defect was lateral or in front, and that usually a wedge-shaped piece of bone was found detached just as occurred in latent deviation of the fingers and toes. The treatment consisted in keeping the neck and spine in a correct position so as to prevent further contraction of muscles and ligaments on the curved side. Hour-glass contraction in the thorax and congenital epigastric depression were to be treated by respiratory exercises and spinal manipulations acting through the ribs if the child were old enough to be taught. He pointed out that in the upper limb the high position of the scapula, whether single or double, was to be treated by manually depressing the bones so as to stretch the muscles, and said that though the malposition was called in Germany "Sprengel's malady" his paper on it had appeared in 1891 while Mr. Reeves had described it in 1885. He mentioned that exostosis of the vertebræ was often present. Intra-uterine fractures, rickets, congenital dislocations of the shoulder, and absence of the clavicles and bones of the upper limb were then dealt with, and also the treatment of club-hand. Finger deviations, syndactyly, polydactyly, brachydactyly, and megalodactyly and their treatment were gone into, and the statement was made that, as a rule, the flap operation for united fingers was not very satisfactory because of the inequality of the adjacent digits. Defects of the pelvis were usually secondary and had more gynæcological than orthopædic interest. In the lower limb absence or deficiency of the femur, congenital misplacement of the hip, coxa vara and coxa valga, absence or misplacement of the patella, genu recurvatum, and other knee displacements and their treatment were entered into. Absence, partial or complete, of the fibula or the tibia, fusion of the bones, and platycnemic tibia and their treatment were discussed, also the rare condition of congenital displacement of the ankle. Congenital amputations and the grooves formed by strangulation by the umbilical cord were alluded to, and the various deformities of the feet were described and their treatment discussed. Mr. Reeves also explained three new operations for paralytic calcaneus and calcaneo-cavus.—Mr. D'Arcy Power, Mr. Muirhead Little, Mr. C. R. B. Keetley, and Dr. A. F. Blagg joined in the discussion on the paper.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Dec. 20th, 1900, Dr. Wearne Clarke, the President, being in the chair.—The following specimens were shown. Dr. Sinclair White: (1) Sarcoma of the Scapula; (2) Sarcoma of the Fibula; (3) Carcinoma of the Intestine; (4) Deciduoma Malignum; and (5) Femur showing Central Necrotic Caries.—Dr. Wilkinson: (1) Stone in the Kidney; (2) Cystic Thyroid; (3) Rodent Ulcer; and (4) Carcinoma of the Mammæ.—Mr. Connell (specimens from the Museum of the Pathology Department): (1) Secondary Sarcoma (Melanotic) of the Vertebræ; (2) Secondary Carcinoma of the Vertebræ; (3) Chest Wall and Right Radius from a case of Rickets; (4) Varieties of Inflammation of the Vermiform Appendix; (5) Sarcoma of the Lower Jaw; and (6) Sarcoma of the Metacarpus.—Dr. T. H. Morton: Drawings and Photographs.—Mr. Simeon Snell: (1) Carcinoma of the Eyeball; (2) Pedunculated Dermoid of the Conjunctiva; and (3) Epithelioma.—Dr. W. M. Robertshaw: Portion of the Lung of a Ganister Worker.—Dr. Godfrey Carter: (1) Spinal Cord (degeneration); (2) Fatty Heart (fatal chloroform anæsthesia); (3) Lardaceous Kidney; and (4) Atrophied Gastric Glands (pernicious anæmia).—Mr. Alfred Reckless: Micrococci in Pneumonic Sputum.—Dr. Gilmour: (1) Heart, Lung, and Liver from a case of Mitral Stenosis; (2) Tumour of the Thyroid; and (3) Porenchephaly.—Dr. J. Robertson: Highly Charged Tuberculous Sputa.—Dr. A. Hall showed the following specimens from the collection of the Pathological Museum, University College: (1) Fibrosis of the Heart (syphilitic); (2) Heart (congenital syphilis); (3) Heart with large Thrombus on the Mitral Valve; (4) Heart with Ball-thrombus in the Left Auricle; (5) Heart with Calcareous Coronaries; (6) Bovine Heart; (7) Spleens, with infarcts, simple and malignant; and (8) Salivary Calculus.—Dr. Hall also showed various microscopical sections, including: (1) Rodent Ulcer; (2) Lupus; (3) Miliaria of the Skin; (4) Blood Films; and (5) Various Tumours, &c.—Dr. Hall also gave a short account of the material sent in for examination to the Pathological Department of University College, Sheffield, during the year.—Dr. J. Robertson read a note on the Work done at the Bacteriological Laboratory in connexion with University College, Sheffield, since its commencement. Courses of instruction for medical students, post-graduate courses, and diplomate of public health courses had been held. During the past 18 months 1605 swabs had been examined for various sanitary authorities from patients suspected to be suffering from diphtheria, nearly 500 specimens of blood had been examined for serum reaction, and 663 specimens of sputum had been examined for tubercle. In addition to this numerous articles had been received for bacteriological examination and certain research work was undertaken.

ROCHDALE AND DISTRICT MEDICAL SOCIETY.—A meeting of this society was held on Jan. 3rd, when Dr. W. E. Jameson read a paper on Anthrax, with special reference to a case of malignant pustule which had recently occurred in his own practice. The source of infection was China skins and the diagnosis was confirmed bacteriologically. The only unusual symptom was suppression of urine lasting for 36 hours. The treatment consisted in excision of the pustule and the application of pure carbolic acid to the wound, with general stimulants internally. The patient died from exhaustion.—Mr. Wilton Mills mentioned a case in which the poison entered by a small burn on the cheek.—Dr. A. Wallace, Mr. G. W. Malim, and Mr. W. Stanwell also joined in the discussion.—Dr. Jameson also read notes on a case of Ovarian Cyst occurring in a phthisical patient. The cyst grew for over two years. The patient was then seized with abdominal pains, and profuse watery diarrhœa began and lasted for 11 days, during which the tumour gradually disappeared. Dr. Jameson believed that the cyst, the existence of which had been confirmed by Dr. A. Donald, had ruptured into the bowel, but although the patient died from phthisis 15 days later a post-mortem examination was not obtained and the theory remained unconfirmed.—Mr. S. T. Lord and Dr. Wallace discussed the case.

Reviews and Notices of Books.

Text-book of Physiology. By British Physiologists. Edited by E. A. SCHÄFER, LL.D. Aberd., F.R.S., Professor of Physiology, University of Edinburgh. Volume II. With 449 Illustrations. Edinburgh and London: Young J. Pentland. 1900. Pp. 1365. Price 42*s*.

THIS work is rather to be regarded as an encyclopædia than a text-book, for it contains an account of physiology which embraces every department of that science, whilst the several sections having been placed by the editor in the hands of writers whose attention has been specially occupied in developing the subject with which they have been intrusted secures a fulness and accuracy that would have been otherwise unattainable. Thus the Mechanism of the Circulation of the Blood has been written by Dr. Leonard Hill; the Contraction of Cardiac Muscle by Dr. W. H. Gaskell; Animal Mechanics and the Sense of Taste and Smell by Professor J. B. Haycraft; the Muscular and Nervous Mechanism of the Respiratory Movements and that of the Digestive, Urinary, and Generative Tracts by Dr. E. H. Starling; the Mechanical, Thermal, and Electrical Properties of Striped Muscle by Sir J. Burdon Sanderson; Nerve and the Physiology of Electrical Organs by Professor Francis Gotch; the Nerve Cell and the Cerebral Cortex by the editor, Professor E. A. Schäfer; the Sympathetic and other related Systems of Nerves by Professor J. N. Langley; the Spinal Cord and the Parts of the Brain below the Cerebral Cortex, Cutaneous Sense and the Muscular Sense, by Professor C. S. Sherrington; Vision by Dr. W. H. R. Rivers; and the Ears and Vocal Sounds by Professor John Gray M'Kendrick and Dr. Albert A. Gray.

It must strike all who read this volume that as physiology is becoming more and more a specialised branch of knowledge many lines of research which have been pursued with great zeal have apparently but a remote bearing on medical practice and are in themselves too abstruse for the ordinary practitioner to master, unless he have special proclivities for scientific research. Still, in the history of science many instances might be quoted where the cultivation of dry and arid fields of research has been rewarded by a harvest of interesting and useful results. It is well, therefore, that from time to time a general review of the state of physiological science, as taught and understood by its chief exponents, should be written. The present volume is to a very large extent occupied with the consideration of the nervous system, long articles being devoted to the nerve-cell, to the nerve-centres, and to the senses. There is, of course, a considerable quantity of original investigation by the several authors, but the bulk of the book is taken up with recent investigations in France, and especially in Germany.

One of the most interesting chapters is by the editor, Professor Schäfer, and is devoted to the cerebral cortex. In it is given, succinctly and yet clearly, the very considerable increase in our knowledge of the functions of the cortex that has accumulated in the course of the last 30 years. Some of the results of the application of modern methods of investigation are more than surprising. At first sight, for instance, it would not be thought possible that any rational idea could be obtained of the duration of action of a nerve cell of the cerebral cortex, yet there is reason to believe that it can be estimated with some approach to accuracy from the consideration of the waves that are seen in a graphic tracing of a voluntary muscle when made to contract by the influence of the will. The successive contractions are found to vary from 8 to 13 or even 20 in a second, 10 being the average. This number is also supported by the rate of contraction in shivering and that it is impossible to articulate at a greater rate than 11 syllables per second, hence it may be concluded that the average interval between the consecutive nervous discharges from the cortical cells is 0·1 second and the minimal interval 0·05 second, and that this rapidity corresponds with the impulses originating in the cells of the brain appears probable from the circumstance pointed out by Richet that it is impossible to *think* the act of articulation at a greater rate than this, and the same statement applies to the thinking the act of singing or of playing a series of musical notes. Professor Schäfer gives a comprehensive view of other phenomena that have been observed on stimulation of the cerebral cortex, including the experiments of I. Munk and W. G. Spencer showing the effects on respiration, and Professor Schäfer's own observations in conjunction with Dr. J. R. Bradford showing the effects on the circulation, on the pupil, on secretion, and on heat. The whole subject of localisation in the cortex cerebri is, as might be expected, very fully given, and shows how much has been done in this direction by the well-directed experiments of recent observers.

The volume opens with a long and carefully written article by Dr. Leonard Hill on the Mechanism of the Circulation of the Blood. The problem of the cause of the first sound of the heart seems to be no nearer solution than it was half a century ago. All seem to be agreed that the second sound is purely valvular, but Dr. Hill enumerates no less than nine events, each of which has been regarded as the efficient cause of the first sound, the sudden tension of the auriculo-ventricular valves being placed, perhaps without any significance being attached to its position, eighth on the list, though it is certainly the most important. The experiments of Wintrich with resonators long ago established the fact that the first sound is complex and really consists of two sounds, of which one is of higher pitch than the other, and hence it seems reasonable to maintain that it is due not only to the sudden tension of the auriculo-ventricular valves but to the friction of the vast mass of muscular fibres running in different directions over each other. Such events as the tension of the blood caused by a collision of the blood particles in the ventricles, the sudden collision of the ventricular contents with the column of blood in the aorta and pulmonary artery, and the rest may surely be disregarded, their contribution to swell the volume of the second sound being doubtful or altogether trifling. Dr. Hill, however, whilst admitting the two causes above-named as the efficient ones, seems inclined to think that the impulse of the heart against the walls of the chest may be an occasional and auxiliary cause. The article contains many interesting facts that have been established in late years partly by Dr. Hill's own labours and partly by those of others. For example, he points out that the phenomena observed in sphygmographic and manometric tracings present certain difficulties in their explanation. These discrepancies may be reconciled if it be clearly understood that the veins which surround the radial artery bear an important share in the production of the pulse; and, he continues, the condition of the veins must exert an important influence in all pathological states of obstruction of the circulation from pulmonary or cardiac disease.

In the succeeding article by Dr. Gaskell on the Contraction of the Cardiac Muscle the reader will find all that is at present known in regard to the augmentor and inhibitory nerves of the heart.

An interesting and valuable chapter, containing as it does the results of much original investigation, is contributed by Sir J. Burdon Sanderson on the Mechanical, Thermal, and Electrical Properties of Striped Muscle. The phenomena of the contraction of muscle under the influence of a continuous impulse or in a state of tetanus are considered; then the more complex conditions resulting from a single instantaneous stimulus, the graphic tracings being obtained both

by Fick's cosine lever and Blix's apparatus for recording the movements of the style attached to the muscle. Sir J. Burdon Sanderson believes that the wave of contraction travels in the muscles of the frog at about three metres per second and that in the rabbit the rate of propagation is 3·4 metres for the red muscle and 11 metres for the white. The different forms of isometric and isotonic curves of muscles—that is to say, of muscles attached at both extremities or free at one extremity and either unweighted or weighted—are given. Sir J. Burdon Sanderson's own experiments on the duration of the latent period of contraction in muscle are detailed in which he showed that instead of that duration being two- or three-hundredths of a second, as Helmholtz thought, it is not really more than three- or four-thousandths of a second. The characters of fatigue in muscle and its response to various forms of electrical stimulation are described in full.

We learn from Professor Starling's Muscular and Nervous Mechanism of the Respiratory Movements that from the results of researches and experiments made by several observers Flourens' *nœud vital* is very much more extensive than the small region in which that savant located the respiratory centre. It probably occupies a very considerable area of the *formatio reticularis* at the level of the lower part of the fourth ventricle. Speaking of the vexed question of the cause of the continuance of the respiratory acts after section of the vagi and the cord in the lower part of the cervical region and of the medulla oblongata just below the pons, that is, of nearly all sensory paths of excitation, the complex nature of the problem is rendered evident by the want of concordance in the results obtained by different experimenters. It is not as yet quite satisfactorily determined whether the pulmonary branches of the vagus transmit normally impressions which lead to inhibition of the respiratory movements, that is, to expiratory efforts or to inspiratory efforts.

Few chapters on physiology have undergone more extension than that dealing with the sympathetic system, and this subject has now been very completely considered by Professor J. N. Langley. The structure of the cells is given by Professor Schäfer in another article, but the details of the origin of this system from the spinal cord, the distribution and function of it, are all fully described by Professor Langley.

The chapter on the Muscular Sense by Professor Sherrington gives the various opinions that have been held on the nature of this sense—that, for example, of Bain and Helmholtz, which dispenses with peripheral organs and afferent nerves; that held by Schiff, that this sense has no apparatus of its own, but that it results from sensations derived from the sense organs of the other five senses; and thirdly, that held by Professor Sherrington himself, that the "sense" is based on a specific set of sensations obtained by specific sense organs in muscles, tendons, joints, and all the accessory organs of movement. From the results of sections causing degeneration of nerve fibres Professor Sherrington found that from one-quarter to one-half of all the nerve-fibres in nerves supplying muscle to be sensory. The peripheral sense organs are the Pacinian bodies, Golgi organs, and muscle spindles. Professor Sherrington makes some observations on the "knee-jerk" and holds that it is not a reflex act, but is, nevertheless, dependent on a reflex spinal arc, the afferent part of which is based on sense organs in the muscle itself and its appurtenances. It has been the subject of many investigations and Professor Sherrington has accumulated many facts concerning it. Its absence is often an indication of disease, yet in some persons who are apparently healthy the movement cannot be elicited. The special senses are very fully and admirably treated. Dr. Rivers gives at considerable length the views of Helmholtz and Tscherning on the nature of the accommodation of the eye but does not pronounce definitely in favour of either. In fact, the arguments seem nearly of equal weight for either theory. The volume concludes with remarkably complete and useful indices which must have taken much time and required the expenditure of much thought to make. Professor Schäfer may congratulate himself on having made a valuable contribution to English physiological literature.

A Text-book of Embryology for Students of Medicine. By JOHN CLEMENT HEISLER, M.D., Professor of Anatomy in the Medico-Chirurgical College, Philadelphia. With 190 Illustrations, 26 of them in colours. London and Philadelphia: W. B. Saunders. 1899. Pp. 405. Price 10*s.* 6*d.* net.

THIS work contains a plain, straightforward, and very intelligible account of the process of development in man. The early stages are, of course, chiefly drawn from the appearances presented by the egg of the fowl and lower animals and the description is generalised, but from the formation of the amnion and allantois the conditions of the human subject are kept steadily in view, and it is essentially the development of the human embryo that is followed. The drawings illustrating the text—so important in an embryological treatise—are numerous and have been well selected from His, Tourneux, Waldeyer, and others, but there are some original sketches and many diagrams which will prove of service to the student. The early stages are given in moderate detail and the mode in which the author introduces observations that have a direct relation to practice is to be specially noted.

The menstrual cycle of 28 days, for example, Dr. Heisler considers may be divided into four periods: the constructive stage, comprising from five to seven days, during which the mucous membrane of the uterus becomes to a marked extent swollen, the tissue more vascular, and the glands wider and longer; the destructive stage, which lasts about five days and commences with infiltration of blood into the subepithelial tissue, probably by diapedesis, which is followed by partial disintegration of the mucous membrane, exposure and rupture of the blood-vessels, causing the hæmorrhage; the stage of repair, occupying the three or four days following the discharge and characterised by the growth of new tissue; and lastly, the stage of quiescence, which extends from the close of the preceding stage to the end of the cycle. The relation of menstruation to ovulation and conception is briefly but very clearly given. The duration of pregnancy is given, of course, at ten lunar months, and it dates from the moment of conception; but since the ovum retains its vitality for about a week after its extrusion from the Graafian follicle, and since the spermatozoa may remain active for several weeks after their entry into the female genital tract, it is impossible to fix within a week or two weeks the date of conception even where there has been only one coitus. A similar relation of the history of the process of development to practice is shown in the account of the process of cleavage. Partial longitudinal division of the embryonic area, from which alone, the author has just explained, the body of the embryo is developed, results in the production of some form of double monster; its complete cleavage gives rise to homologous or homogeneous twins, which are twins of the same sex and of almost absolutely identical structure. Ordinary twins are developed from separate ova which may or may not have come from the same ovary. In regard to the formation of the mesoderm Dr. Heisler agrees with Bonnet and Duval, holding that the mesoderm originates from a double source, chiefly from the entoderm, but also from the ectoderm, since the cells giving rise to the part that grows from the region of Hensen's node are ectodermic. After its formation the mesoderm grows by the proliferation of its own cells independently of the ectoderm and the entoderm and the structures derived from it are connective tissue in

all its forms, including cartilage, fibrous and elastic tissue, bone, dentine, lymph, blood, muscle, all endothelial cells, the spleen, kidney, and ureter, the testis and its excretory ducts, the ovary, Fallopian tube, uterus, and vagina. Speaking of the allantois, after describing its mode of origin, he shows how it becomes a pedunculated sac lying in the extra-embryonic part of the cœlom, the peduncle leaving the body cavity proper through the umbilical opening; how its walls are composed of entoderm and visceral mesoderm; how its blood-vessels develop in the mesodermic stratum; and how its union with the false amnion produces the true chorion. Dr. Heisler then continues: "The human allantois presents a striking peculiarity as compared with that of birds and reptiles; in man the allantois develops not as a free sac projecting into the extra-embryonic body cavity but as a mass of splanchno-pleuric tissue, which contains only a rudimentary cavity and which grows into the abdominal stalk, being guided by that structure to the false amnion." Illustrations of this are given. The function of the allantois is stated to be that it serves as a nutritive and respiratory organ until the formation of the placenta, its period of activity extending from about the fifth or sixth week to the third month; it also constitutes a receptacle for the fœtal urine, and it produces three structures of the adult organism, the urachus, the urinary bladder, and the first part of the urethra of the male and the entire female urethra. The chapter on the development of the heart and vascular system is very complete, as is also that of the alimentary canal and its appendages. The remaining systems are considered in the following order: the respiratory, genito-urinary, cutaneous, nervous, including the special senses, the muscular and osseous. In a tabulated chronology at the close of the book each of these systems is described as it appears every week up to the ninth week, and subsequently at the end of every month up to maturity. Throughout the work the author is careful to give explanations of the mode of origin of such deformities as cleft sternum, cleft palate, hare-lip, and ectopia of the intestines and bladder, and the reader will find definitions of many terms that have recently been introduced, such as prochorion, ameloblasts, dermal navel, paraxial mesoderm, and the like. There is an excellent index, yet "blastodermic vesicle" is omitted. It would be a convenience, as there are many references to figures, to give the page on which each is to be found, as much time is lost in looking for one perhaps 10 pages in advance. The work as a whole may be regarded as giving an excellent presentment of the present state of embryological knowledge.

Materia Medica for India. By C. F. PONDER, M.B., C.M. Edin., and D. HOOPER, F.C.S., F.L.S. Calcutta: Thacker, Spink, and Co. 1900. Pp. 356. Price 6*s*.

THIS volume has been issued as an Indian companion to the British Pharmacopœia of 1898, and contains, in addition to the officinal preparations, 350 of the better known Indian drugs, many of which the authors consider to be capable of employment as substitutes. The medicinal properties of the various substances are given in brief, and the authors acknowledge having used Sir T. Lauder Brunton's "Manual of Pharmacology, Therapeutics, and Materia Medica" as an authority here in many cases. We presume that the medicinal properties of the indigenous drugs, the use of which has not reached the west, are stated upon similarly good grounds. In some cases these properties are not familiar to us, and we should have liked to see some authority for the statements. The arrangement of the book is neat and practical. All preparations in the vegetable materia medica are placed in one article under the heading of the botanical parent, and in the same manner the active principles are discussed under the heads of their respective raw products. All the salts of a metallic substance are dealt with under their bases. The addition of tables of weights and measures and a few simple notes on pharmacy will make the book valuable to medical men not anxious to burden themselves with a multiplicity of text-books.

Studies in the Psychology of Sex. By HAVELOCK ELLIS. Philadelphia: F. A. Davis Company. Pp. 275. Price $2.00 net. (Sold only to Physicians and Lawyers.)

THIS volume contains three studies entitled the Evolution of Modesty, the Phenomena of Sexual Periodicity, and Auto-Erotism respectively. The first study is a really close inquiry into an important phase of modern manners. Many authors before Mr. Havelock Ellis have suggested that what we nowadays call modesty is exactly the most important factor in woman's sexual attractiveness to man, but no one has ever given such a multitude of examples in proof of the proposition that the woman of to-day's civilisation is not ashamed to be seen naked because she is naked, but only because she is without her weapons of seduction. The next section of the book—the study of the evidence that the sexual functions of man are periodic—is also interesting and displays its author as deeply read in many by-ways of physiology and psychology. We agree with him that it is not yet demonstrable that a sexual rhythm similar to that which occurs in woman occurs in man, but we do not think it nearly as probable as he does that the existence of such a cycle will be proved. The testimony of those willing to give it would be very untrustworthy, and the personal equation enters so largely, as we have recently had to point out, into the matter of sexual appetite that we cannot conceive any natural law regulating the human race. The last part of the book is devoted to an elaborate investigation into the causes of masturbation. This delicate subject is treated by Mr. Havelock Ellis with thoroughness and decency. Most of what he has written will be familiar to medical men because of the confidences that have been reposed in them, but the essay is very suggestive in its indications of advice and general treatment. Strictly medical advice, we are glad to see, it is not attempted to give.

This contribution to our comprehension of sexual psychology is to be sold only to physicians and lawyers. We trust that the publishers will take every pains to observe the restrictions of sale that they have laid down for themselves. Mr. Havelock Ellis has written a book that has its distinct uses, and he has done his work in a proper manner, saying clearly what must be said, and neither making mock-modest moans over the depravity of the human race nor relating "good" stories under the guise of scientific evidence. But his book must not be sold to the public, for the reading and discussion of such topics are dangerous. The young and the weak would not be fortified in their purity by the knowledge that they would gain from these studies, while they certainly might be more open to temptation after the perusal of more than one of the chapters.

Ulceration of the Bladder, Simple, Tuberculous, and Malignant. By E. HURRY FENWICK, F.R.C.S. Eng., Surgeon to the London Hospital, Surgeon and Pathologist to St. Peter's Hospital for Urinary Diseases, &c. London: J. & A. Churchill. 1900. 8vo. Pp. 85. Price 5*s*.

IT was not until the invention of the cystoscope that we had anything other than a post-mortem knowledge of ulceration of the bladder; and though the diagnosis of tuberculous or simple ulceration was occasionally made, yet the diagnosis was nearly always rather uncertain. Even with the aid of the cystoscope the difficulty of diagnosis is not at an end, for it is very difficult when ulceration is present to obtain the contents of the bladder in a perfectly clear condition, so that the state of the vesical wall may be

distinctly examined. The introduction of the cystoscope is liable to be especially painful when there is a tuberculous ulcer in the bladder and this does not appear to be generally due to any extension of the disease into the urethra.

Mr. Fenwick lays stress on the possible dangers of instrumentation in non-malignant ulceration of the bladder, and he shows that the viscus is extremely liable to tear, and he suggests that before the anæsthetic is administered the surgeon should ascertain how much urine the patient can pass at one time; then if an ounce be added to represent the residual urine the total should be about the quantity injected and withdrawn in washing. This is certainly a safe method, but equal safety is obtainable by limiting the pressure of the contents on the bladder wall to a safe amount. The pressure can always be exactly known by the use of a funnel and tube for filling the bladder. If the height of the funnel above the bladder does not exceed two feet the internal vesical pressure cannot exceed one pound on the square inch. If, however, a syringe be employed to fill the bladder it is quite impossible to gauge the pressure with any accuracy.

The author divides the non-malignant ulcers into "simple" and "tuberculous." The simple ulcers he again divide into "spontaneous," as in the solitary simple ulcer, and the "consecutive," as in those following on cystitis or prostatitis. Mr. Fenwick compares the solitary simple ulceration of the bladder to the simple ulcer of the stomach. He has met with it chiefly in young men about 20 years old. It gives rise to marked hæmaturia and frequent micturition and causes much puckering when healed. The prognosis of this ulcer is very good, and the author advises curetting in all except the most advanced stages.

The tuberculous ulcers are divisible into those which are primary and those which are consecutive to tuberculosis elsewhere. For the primary form Mr. Fenwick advises that sandal oil should be administered for about a fortnight to reduce inflammatory swelling, then five grains of hexamethylene tetramine in half a pint of hot water are to be given three times a day to render the urine acid and if possible aseptic. For the localised form then Koch's "new tuberculin" is to be used, and if after six injections the ulcer shows signs of healing then it may be left, but if not it is to be scraped, through a suprapubic incision in the male and through the dilated urethra in the female. If the tuberculous ulceration is diffuse, the author considers that no cutting operation should be carried out, but Koch's tubers culin should be injected.

For malignant ulceration of the bladder in advanced cases Mr. Fenwick considers that "detrusotomy"—that is, removal of two-thirds of the detrusor muscle of the bladder by a transverse suprapubic incision—offers the greatest chance of relief.

The book deals with a difficult subject and contains many original observations and suggestions which deserve careful consideration from surgeons. A full discussion of the work would extend far beyond the limits of a review, but we have endeavoured to present the author's opinions on a few of the more important matters with which he deals.

LIBRARY TABLE.

Appendicitis and its Surgical Treatment, with a Report of 185 Operated Cases. By HERMAN MYNTER, M.D. Copenhagen, Professor of Clinical Surgery in the University of Buffalo, New York. Third Edition. Philadelphia and London: J. B. Lippincott Company. 1900. Pp. 226 and Index. Price 10*s.* 6*d.*—This book formed the author's graduation thesis at the University of Copenhagen. It is, in fact, a careful study and estimation of the evidence for and against the operative treatment of appendicitis. The anatomy, histology, etiology, pathology, classification, symptomatology, complications and sequelæ, diagnosis, prognosis, and treatment are all considered, and the author's conclusions are as follows:—"There is a point of time in every case of appendicitis at which recovery is possible by operation. The prognosis depends solely upon this point of time. ..... We cannot operate too early, we are often too late ..... the only reliable help is to be found in surgical treatment. The earlier the operation is performed the better is the prognosis and the surer the recovery—a recovery, too, which is radical." The book is a valuable and summarised compendium of the views of medical men up to the present time upon the important question with which it deals.

Rheumatism, Rheumatoid Arthritis, and Subcutaneous Nodules. By C. O. HAWTHORNE, M.D. Glasg., M.R.C.P. Lond. London: J. & A. Churchill. 1900. Illustrated. Pp. 53. Price 2*s.* 6*d.*—The greater part of this essay appeared in the columns of the *Physician and Surgeon*, and, as the author admits, the matter dealt with is doctrinal rather than practical The subject discussed is the relationship of rheumatoid arthritis to other recognised rheumatic conditions, and inasmuch as no rigid line of distinction can be drawn between the so-called rheumatic nodules and the subcutaneous tumours which are found in cases of rheumatoid arthritis we are forced to the conclusion that either these nodules are not pathognomonic of rheumatism or that rheumatoid arthritis is only a modified manifestation of the rheumatic state.

Whitaker's Almanack. 1901. 12, Warwick-lane, Paternoster-row.—Like all the truly great "Whitaker" is at the same time modest. The title-page of his almanack merely states the following: "An almanack for the year of Our Lord 1901, by Joseph Whitaker, F.S.A., containing an account of the astronomical and other phenomena, a large amount of information respecting the Government, finances, population, commerce, and general statistics of the British Empire throughout the world, with some notice of other countries, &c., &c." As this incomparable work contains information upon every possible subject from celestial phenomena down to statistics of the Mormons, it will be seen that the "&c." comprises a great deal. We need say no more except that the present issue of the almanack is, if possible, better than any of its predecessors. It is really indispensable to all business men, and to our mind no one need be dull who has a copy by him to read.

Estudios Médico-Legales sobre el Código Civil Argentino. Por FRANCISCO DE VEYGA, Profesor de Medicina Legal de la Facultad de Ciencias Médicas de Buenos Aires, Cirujano de Ejército. (*Studies in Forensic Medicine according to the Civil Code of Argentina.* By FRANCISCO DE VEYGA, Professor of Forensic Medicine at the Faculty of the Medical Sciences of Buenos Aires, Surgeon to the Army). Buenos Aires: Libreria Cientifica de Augustin Etchepareborda. 1900. Pp. 557.—This book is a sort of commentary upon the civil code of the Argentine Republic in so far, that is, as it deals with medical or allied subjects. Professor de Veyga commences by giving a short history of the code, the study of which is, he says, imperative as a preliminary to the study of legal medicine and, moreover, for every medical man, whether especially concerned with forensic medicine or not. The remaining chapters of the book are taken up by the consideration of the usual subjects treated in books of forensic medicine, such as pregnancy, viability, minors, marriage, and the like. There is a chapter upon deaf-mutes who are not considered by the Argentine code as capable for "acts of civil life unless they can be communicated with and make themselves understood by writing." Another chapter of interest is one dealing with such questions as the recovery of fees and the right of medical men to receive legacies from their clients. From this we learn that medical men stand upon the same footing as any other class

of society in being able to inherit or to receive gifts from their clients. The book is very clearly and simply written and should be of value to those who live under the laws with which it deals.

Herbert Fry's Royal Guide to the London Charities. Edited by JOHN LANE. London: Chatto and Windus. 1901. Pp. 389. Price 1*s.* 6*d.*—This, the thirty-seventh, edition of an admirable little book differs but slightly from its predecessors. Its aim, as the editor states in his preface, is to point out to the suffering poor, in a book so cheap that they can either purchase it or get access to it, the place where they may obtain relief; and, secondly, to help benevolent people who have money to give but are doubtful where to bestow it. It will certainly serve these purposes, as it contains details of charitable institutions of all kinds and in addition information about societies which can in no way lay claim to that name. But this last foible it shares with other guides to charities and the inclusion does not impair the usefulness of the book.

Illustrated Lectures on Nursing and Hygiene. By R. L. ROBERTS, M.D. Lond. Third Edition. London: H. K. Lewis. Crown 8vo. Illustrated. 1900. Pp. 213. Price 2*s.* 6*d.*—This book is published as a companion volume to "Ambulance Work," and its contents are arranged in conformity with the syllabus of the advanced nursing course of the St. John Ambulance Association. The two first editions of this work have been largely instrumental in teaching the qualified members of the brigade their duties in general nursing and the care of the sick and wounded. The solid fact that over 1000 men of the St. John Ambulance Brigade have left this country for South Africa as hospital orderlies, nurses, and the like, and have shown considerable efficiency in their work, bears witness to the excellence of the institution and the books of instruction whereby the members are taught, and of these books few fulfil their object better than Dr. Roberts's "Illustrated Lectures on Nursing and Hygiene."

A National Question: Army Reorganisation (reprinted from *Blackwood's Magazine*). Edinburgh and London: William Blackwood and Sons. 1890. Pp. 32. Price 4*d.*—Amid the shoal of books and papers called forth by the present war, this little pamphlet, reprinted from *Blackwood's Magazine*, strikes us as unusually worth reading. The author advocates a change in our military system by which the home army shall be maintained on such a footing that it shall be always ready to take the field on short notice. The present system is based on a policy technically known as "defensive," as briefly outlined in "The Army Book for the British Empire," issued officially in 1893; whereas the author contends that it should in principle be "offensive" in the sense that any defensive policy should include a provision for the home army taking the field immediately on the outbreak of war; and he points out the changes believed to be necessary in order to secure this. His arguments have no direct or special bearing upon the medical services. The author is evidently keenly in earnest about the views he advocates.

"*Who's Who*" *for 1901.* London: A. and C. Black. Price 5*s.*—The 1901 volume of this useful book is larger than that of last year, chiefly on account of the incorporation with it of "Men and Women of the Time," and biographies of all Companions of Orders not previously inserted. We notice that the list of names headed, "The Victoria Cross" is incomplete. No names are given of either privates or of non-commissioned officers, an omission which seems to us unfair. The book, however, will be found to be specially useful to journalists, for it contains all sorts of information upon the press, both daily and periodical. There are also details of matters which are constantly being referred to, such as the Church, Government officials, metropolitan and provincial magistrates, a complete list of public schools and the various societies and their secretaries. The biographies, which are mostly autobiographic, also tell the seeker after knowledge everything about everybody who has ever done anything important, and about some others as well. It would be easy to point to biographies that are too short and biographies that are too long, supposing that the relative importance of the subject was intended to be gauged by the length of his or her memoir, but as this is nowhere stated the only comment that is necessary is that the great people are the most reserved. "Who's Who" is a valuable compilation, as all journalists have found out.

Ambulance Catechism. By WILLIAM ROXBURGH, M.B., C.M.Glasg. Glasgow: G. A. H. Douglas and Co. 1900. Pp. 127. Price 1*s.* 6*d.*—This little work is business-like and to the point. It asks a long series of questions and gives the answers. There are no "padding" and no preface, two admirable omissions. It contains an index—a valuable addition, especially for rapid reference in emergencies. It is intended as much for practical use as a help in preparing for examinations.

JOURNALS AND MAGAZINES.

The *Medical Magazine* for January, 1901, contains a Contribution to the Study of the Intestinal Form of Influenza by Dr. Augustine Carducci of Rome, and translated by Dr. A. C. Miller. Six cases are detailed in which, after an initial attack of a few days, the patients for a month experienced an unusual course of illness. After the first three or four days, in which the symptoms were characteristic of influenza as it is most commonly seen and yielded to the usual remedies, the temperature rose again and for the next three or four weeks was raised daily to 38° C. for more than half the 24 hours, falling to normal about 5 P.M. and remaining so for some hours. No symptoms accompanied this febrile state, and we think that Dr. Carducci has by no means conclusively shown that the origin of the fever was in the intestinal tract. Judging merely from an account of the cases we should prefer to regard them as instances of the central disorder that we know is a common result of the influenza poison. Mr. J. Foster Palmer continues his learned and attractive articles on Modern Epidemics, dealing in this number with typhoid fever. In discussing the etiology of the disease Mr. Palmer makes some shrewd and very *à propos* remarks as to the difficulty of distinguishing between air- and water-borne infection when what is primarily water-borne becomes practically an air infection through the medium of soil-water evaporation. Mr. Palmer offers consolation to all classes of inhabitants in the reflection that if country dwellers enjoy the cleanest air the cleanest water is supplied to towns. This is, of course, through the deficiencies of drainage in the scattered dwellings of country districts. Mr. A. R. Whiteway writes upon imprisonment, contending for reclamation as the prime object rather than punishment, for greater utilisation of convict labour, and, what is of particular moment to medical readers, for consulting physicians in connexion with prisons, and, generally speaking, for more thorough and expert medical investigation of misdemeanants. The articles on Some Disorders of Menstruation are concluded. The discussion of the cause of amenorrhœa wanders freely into hypothesis. Few will follow the writer to the conclusion that amenorrhœa often results from interference with uterine nerve-supply due to the occurrence in childhood of "conflagrations in the regions of the tubes and broad ligaments." Practitioners, happily, are not familiar with frequent evidence in childhood of "conflagrations" in these parts. The public health section of the magazine presents some interesting conclusions upon vaccination gathered from Dr. Arthur Reynolds's Chicago Health Report. The opinions are

arrived at, from a wide experience, that vaccination immunises if used not later than three days after exposure to infection, also that a greater degree of immunity is conferred by daily repetition of the vaccination, and that this repetition should be practised until the first vaccination shows evidence of taking, which is usually on the fourth day. The foreign section includes a remarkable piece of advice from a German authority to the effect that for the sake of the nursing of future generations "marriageable men should swear to marry only girls with full bosoms." We do not see why marriageable men should be recommended to swear, nor are we prepared to admit that the "full bosom" is necessarily that from which a good milk-supply will be forthcoming.

The December issue of the *Veterinarian* is full of original and interesting articles. Mr. Alexander Meek, M.Sc., contributes the result of a study into the "Growth of Farm Ungulates," approaching the subject in the present chapters from the external sexual characteristics, and particularly drawing attention to the differences brought about by the operation of castration in the male or female. Professor Mettam records some clinical observations on echinococcosis in the horse and on carcinoma of the dog. The article on the Breeds of Dairy Cattle by Mr. Alford of the American Bureau of Animal Industry is continued and well illustrated. We regret to see in the obituary notice the name of Professor Williams, F.R.C.V.S., F.R.S. Edin., who has been for many years the energetic Principal of the New Veterinary College; his loss will be deeply felt by the veterinary profession and by agriculturists, amongst whom his name was widely known. "Science Notes" and "The Month's Progress" contain short summaries of work done recently in the scientific world and conclude the best number the *Veterinarian* has produced during the past year.

Knowledge for January, 1901, maintains its usual high standard. The question of the size of ocean waves is dealt with by Mr. Vaughan Cornish, and Photography in Natural Colours with an Ordinary Camera is the subject of an article by Mr. H. Snowden Ward. Natural history and astronomy have also a prominent place in this number. Perhaps the most interesting article is that by Mr. R. Lydekker on Monkey Hand Prints. A clue to the pattern formed in the palm seems, he says, "to be afforded somewhat strangely by the tails of such of the South American monkeys as are endowed with prehensile power in these appendages, confirmatory evidence being likewise afforded by the prehensile tails of the American opossums and tree-porcupines as well as by those of the Australian phalangers. In all these animals the naked grasping portion of the tail, which is situated at the extremity, is covered with papillary ridges and grooves precisely similar to those on the hands and feet of monkeys but invariably arranged in simple transverse lines across the tail so that in the act of grasping they would be parallel to the long axis of the branch around which the tail is coiled. Clearly these papillary ridges are primarily connected with the grasping power."

The *Leisure Hour* in its January issue contains an interesting appreciation of the work of the late Prebendary Harry Jones with regard to open spaces. The Rev. Harry Jones was well known by name to many of our readers as a strong and sensible man. He took an active interest in the Metropolitan Hospital Sunday Fund and in all social, sanitary, and municipal questions. In the treatment of the latter he was eminently sensible. He once wrote: "That which is good is of God, though it be but the sweetening of a drain," and the phrase exhibits the man exactly. As an example of his practical manner of watching the sanitary well-being of his spiritual charges, we quote the following:—

"A deputation came from the lower part of the parish to complain of certain evil smells proceeding from the gas-works there. I personally condoled with these complainants, but, somehow, their representations were ignored as groundless. The premises were inspected by officials and pronounced to be free from the nuisance objected to. I was sure that these gentlemen had gone at a wrong time, since the offensive smells were created at night. The sufferers brought an action against the gas company which was brought into court. Jessell was the judge, Henry James and Chitty were there ready to devour the witnesses for the prosecution who spoke to the nuisance and I shall not forget their look when I (to the surprise of the audience) was put into the witness-box and was able to say that I had spent the best part of one night squatting on the roof of a public-house which overlooked the gas premises and with my own eyes had seen the opening of the doors of the furnaces from which the bad odour had issued. We won, and I shook hands with those members of the vestry who were present and had taken the side of the company. They half enjoyed learning (for the first time) about the secret nocturnal session of their rector."

Clergymen of the stamp of Prebendary Harry Jones do much to make the Church of England a power in the land. We wonder that there is not more eagerness to prefer them to important ecclesiastical positions. "The Medical Profession for Women," with illustrations, is another article of interest in the same magazine.

New Inventions.

A NEW SYSTEM OF SEWER VENTILATION.

OUR attention has been drawn to a new system of sewer ventilation which appears to us to have the merit of simplicity and easy adaptation whilst being effectual in reducing to a minimum the noxious characteristics of sewer emanations. As is well known, sewer ventilation is on all sides a source of offence and perhaps of disease, but sewer ventilation must be provided in some way or other. At present the ventilation of sewers is allowed to take place in a very haphazard way by constructing openings to the sewer in the road. The degree of offence thus caused requires no further description. Sewer-air is characterised by a sickening smell which all instinctively avoid. Attempts have been made, and with some success, to overcome the nuisance caused by level road ventilators by constructing shafts. Although shafts remove the objection to the level ventilators and allow sewer-air to escape at some distance above breathing level, yet obviously the air is still poisoned. A number of devices have been suggested for purifying sewer-air, but most of them have proved impracticable. Messrs. Stone and Co. of Deptford, S.E., have devised an apparatus which can be placed in any convenient position in the upper part of the sewer to be ventilated. The purification is effected in the first place by the use of an injector the action of which depends upon a small jet of water delivered from the water main. Sewer-air with a quantity of fresh air is then drawn by injection action into the apparatus and thoroughly mixed. The mixture of sewer-air and air is then passed through a quantity of water maintained by the same jet at a given level in a tank and therein thoroughly scrubbed or washed. The overflow runs away into a flushing tank, where it can be used for flushing the sewers, or it can be allowed to run direct into the sewer. So satisfactorily is the purification effected that both bacteriological and chemical examination have shown that the sewer-air is in this way freed from its germs and from its offensive constituents. It is stated that 10,000 cubic feet of noxious gas can be drawn from the sewer thoroughly purified and then passed into the outside atmosphere at a cost of water consumed of about 1*s.* 6*d.* It is further said that the apparatus has given excellent results with what have hitherto proved to be most troublesome and offensive sewers in certain districts of London. As we have said, the bacteriological and chemical results of examination were satisfactory, but we should like to have learned of its efficiency also having been tested by observing the effects of the treated

sewer-air upon animal life. In a classic experiment it was shown that when rats which had been respiring sewer-air were inoculated with cultures of the typhoid organism they rapidly succumbed to typhoid fever, whereas the rats kept in the open survived the effects of the poison introduced. There can be little doubt that sewer-air predisposes the human subject to sickness and disease, and any means which can be found which will destroy its toxicity will undoubtedly remove a frequent source of sickness and materially reduce a factor in the mortality returns.

SOUTHALL'S MILK STERILISER.

THERE is a distinctly new feature in regard to the method of this milk steriliser, and while the apparatus is effectual for the purpose it requires a minimum of attention. The steriliser consists of a metal container into which is placed a small quantity of water. A perforated metal shelf with its concave side downward is placed in the water and serves to support the bottle of milk. The bottle is provided with a lever stopper. All that is necessary to be done is to fill a metal cup with spirit and place it under the container after lighting the wick. The cup holds exactly the amount of spirit sufficing for the sterilisation, which takes about an hour to be complete. The same cup also holds the requisite amount of water. The apparatus is then left to itself. After an hour it will be found that the supply of spirit has been consumed and the temperature of the milk throughout will be about 160° F. The apparatus, in a word, provides for a kind of steam jacket round the bottle of milk, the quantity of spirit directed to be used being exactly adjusted for the attainment of this temperature and for the sterilisation of the milk. The apparatus is convenient, simple, and effective. It is made by Southall Brothers and Barclay, Limited, Manufacturing Chemists, Birmingham.

THE BATTLE OF THE CLUBS.

THE NEWCASTLE MEDICAL UNION AND THE MINERS.

THE Northumberland miners are admirably organised, not merely for trade-union purposes, but also for coöperative and political purposes. Miners have shown their strength by returning two of their own class to Parliament, Mr. John Wilson, the Member for Mid-Durham, and Mr. Charles Fenwick, the Member for the Wansbeck Division of Northumberland. No one personally acquainted with these representatives of the working miners can do otherwise than render homage to their integrity and their ability. It is necessary to take into account such salient facts as these before the more recent, and we fear less disciplined, organisations of the medical profession enter upon a struggle against the trade union of the Northumberland miners. The Newcastle papers announced that the Newcastle Medical Union has unanimously decided that the present rate of pay of the colliery surgeons working under the contract system is insufficient. They demand an increase of 50 per cent.—namely, 9*d*. instead of 6*d*. per fortnight. Undoubtedly, of all miners those of Northumberland are the most fortunate. In no other coal-fields are the wages so high and the hours of labour so short. The ideal of the eight hours' day has been surpassed, for the Northumberland miners generally work only seven hours a day. It is true that there is a dark side to this bright picture, as the lads or youths who prepare the work for the men remain in the mines for a longer time. But in spite of this drawback, if any class of miners can afford to pay their medical advisers a higher tariff than usual it is the miners of Northumberland. Indeed, this seems to be recognised by at least a part of the miners themselves. The colliers engaged along the Tyne banks, at the Montagu Pit, and in the pits in the neighbourhood of Lemington have accepted the terms proposed and granted the increase. Those of Prudhoe and neighbourhood are still considering the matter, but it seems as if a struggle may arise in the other districts. The Eden Colliery, Leadgate, and the Busty Pit hands of the Consett Iron Company and all miners connected with three other pits have already decided to refuse to accede to the demands. Nevertheless, the Medical Union has served notices on all he miners, and the medical practitioners have declared that they will cease to give their services under the contract system unless the increase is granted. This, therefore, may lead to a strike on the part of the colliery surgeons. We hope, however, that such an extreme course may be avoided. In the face of an undisciplined, unruly crowd a strike is sometimes necessary, for there are then no means of arguing the matter out. In the present case the miners are so well organised and are represented by such able men that it should be possible to negotiate, and this in a satisfactory manner. The miners have themselves done so much by organisation to improve their position, that they must of necessity sympathise with the efforts made by the members of the medical profession to follow their example. It is said that imitation is the sincerest form of flattery, and therefore there should be a fellow feeling between the Medical Union and the Miners' Union, and they should be able to come to terms in a friendly spirit. As this has been already done in some districts we sincerely hope that this good example will be followed in other parts of the county.

THE SPRINGBURN (GLASGOW) RECHABITES AND THEIR MEDICAL OFFICER.

Dr. J. A. Wilson of Springburn is entitled to the sympathy of the entire medical profession. He is a victim to the abuses which we have so often and for so long denounced. For 15 years he has been the medical officer of the Rechabites. At Springburn there is an adult tent and also a juvenile tent. In 1899 he had to make 450 visits to the members of the adult tent at their own homes within a radius of three miles. He had further to give 803 consultations in his surgery and to supply 530 bottles of medicine. In 1898 there was a greater amount of sickness, involving 578 visits, 721 consultations, and 714 bottles of medicine. Taking the last and most favourable year, Dr. Wilson received only about £65 for his services. At the ordinary rates charged in the district he should have received £120. The members of other societies in this neighbourhood pay 4*s*. a year, and the tramway servants pay 5*s*. ; the Rechabites, however, only pay 2*s*. 6*d*. For their juvenile tent they only allow a halfpenny a week, or 2*s*. 2*d*. a year ; and as there is no examination on admission sick and weakly children are enrolled. Dr. Wilson appealed to the Rechabites asking that the subscription paid by the adults should be raised to 4*s*., that the children should be examined before admittance, and that the subscription should also be increased. The Rechabites replied that they would allow the children to be examined before admission, but would not increase the subscription paid for them nor make any allowance for the time and trouble of examining them. As for the adults, they consented to raise the fee from 2*s*. 6*d*. to 3*s*. per annum, and this was the only concession made. Dr. Wilson finds that on an average each adult member suffers one week's illness per annum, and even 3*s*. for one week's medical attendance is a very meagre remuneration. Nevertheless, he consented to accept this if the pay for children was also raised to 3*s*. or if the children's tent was given up. All the medical practitioners in the neighbourhood were informed as to the details of these negotiations, and with one exception they loyally supported Dr. Wilson, refusing to become candidates for his post if he gave it up. Unfortunately there was a weaker vessel found and he consented to do the work at the conditions laid down by the Rechabites. If he is severely ostracised by the local medical profession he will not be able to complain. It is time practitioners should be made to feel that it is a breach of trust to their fellows thus to undersell a member of the profession. If medical practitioners tamely acquiesce in such unfair competition there is no reason why it should stop, and the abuses will increase and the position will drift from bad to worse. Cannot the medical practitioners of Springburn agree to form a medical union to be federated ultimately with other similar unions? Isolated efforts, however gallantly made, are predestined to failure. There is no strength except in union.

HABITUAL DRUNKARDS.—The want of more provision for habitual drunkards under the Inebriates Act of 1898 is obvious. The home provided some time since by the London County Council for women who are committed for three years accommodates only 100 persons. It is to be enlarged and adapted for 80 more persons at a cost of £20,000.

THE LANCET.

LONDON: SATURDAY, JANUARY 12, 1901.

"Let us now Praise Famous Men."

IN another column will be found an account of a scheme for raising a memorial in the form of a statue to one whose name is probably unknown to the majority of the inhabitants of these islands—namely, WILLIAM GILBERT. Born in 1540 he was the son of the Recorder of Colchester, and having graduated M.D. of the University of Cambridge he became physician to "that bright occidental star," Queen ELIZABETH, and successively censor, treasurer, and president of the Royal College of Physicians of London. By his great work "De Magnete, Magneticisque Corporibus, et de Magno Magnete Tellure, Physiologia Nova," he laid the foundations of the science of magneto-electricity which was in after years to bear such fruit at the hands of OERSTED and FARADAY. And now some 300 years after his death his medical brethren in Colchester are about to erect a statue to his memory, a movement which redounds greatly to their credit.

We congratulate the medical men of Colchester upon their desire to do honour to their great townsman, while the incident may surely give us all cause for serious thought when we consider how very few memorials, whether statues, medallions, or pictures, of our great scientific heroes are to be found in this country. Take the metropolis for example. There are statues of generals and admirals, of statesmen and political economists, of kings and queens, but in the city which has commemorated in statuary such examples of royalty as JAMES II. and GEORGE IV. there is no statue to HUNTER. DARWIN, OWEN, and HUXLEY live in marble or bronze in the Natural History Museum, and though few, comparatively speaking, see them there the site is an apt one. JENNER has his statue at Kensington-gardens; once it stood in Trafalgar-square, but apparently without a word of protest it was moved to a secluded glade in the west of town. The name of HARVEY lives for ever in medical memories, but there is no public monument in London to him, and the only existing authentic portrait, a picture attributed to CORNELIUS JANSEN, has never been seen, as far as we know, outside the walls of the Royal College of Physicians of London. The Harvey Grammar School in Folkestone is not a foundation in memory of the discoverer of the circulation of the blood, but was founded by his brother, Sir ELIAB HARVEY, who endowed the local charity for tanning nets and sails with "cutch"—namely, catechu. The works of our great medical men are, it is true, commemorated by means of official lectures, but these do not impress the public mind. HUNTER is probably better known to the majority of average persons than any other man of science, owing to the splendid picture of him by REYNOLDS, and we doubt whether the face of another medical man of all the famous British physicians and surgeons would be in the least recognised by the public.

Pictures and statues are, as was said long ago, the books of the uneducated, and our profession loses in the popular eye by having no objective reminders of the good done by our leaders. Not one of our hospitals in the metropolis is dedicated to the memory of a great physician or surgeon. The French have their Trousseau Hospital, but our Harvey or Sydenham hospital is still to be built. Physicians and surgeons may have desired no fame while they lived. In many instances they certainly did not receive it, but rather blame and ignominy. Even after death they have in some instances—as, for example, that of Sir THOMAS BROWNE—not been allowed to rest quietly in their graves. The commencement of a new century might well be the starting point for erecting memorials to some of our notable scientific men, not in museums, but in the street or the square. New hospitals when founded should bear the names of famous medical men, in association, may be, with that of the founder. New streets are about to be cut between the Strand and Holborn and in other prominent parts of London. It would be an admirable movement on the part of the medical profession to raise a fund for the erection of one or two statues to our neglected chieftains, and as every item of the body politic profits by the work done by our fathers in science we think that the public would follow suit. In the provinces the example of Colchester can be followed, and the medical men of any locality which once gave birth or nurture to a medical hero will deserve well of their profession if they make a move to keep that hero's memory green.

The Buildings of the New Royal Infirmary at Glasgow.

THE managers of the Royal Infirmary at Glasgow have decided to celebrate HER MAJESTY'S long and prosperous reign by rebuilding the Royal Infirmary. No more fitting method of honouring the memorable era of QUEEN VICTORIA'S reign could have been devised or one more likely to give pleasure to the gracious Sovereign of our islands; and yet we have heard in several quarters that what the Jubilee Committee—the body to whom the carrying out of the scheme has been committed—propose to do runs a great chance of being unsatisfactory in many directions. Several correspondents have warned us that the proper preliminary steps to secure a good design for the rebuilding of the Royal Infirmary have not been taken by the Jubilee Committee, so that it is not certain that the public of Glasgow will obtain the best article for their money. It may appear too late in the day to say a word of protest, as a design for the new building has now been definitely accepted by the Jubilee Committee and a sketch of it has been reproduced in the *Glasgow Herald*. But on the chance of the contract not having been signed and sealed and that there may be yet time for the Jubilee Committee to reconsider the course they have taken, we say these few words. They must not be regarded as a criticism of the design which the Jubilee Committee have

chosen, but only of the methods by which they have set about making their choice.

The Jubilee Committee appear not to have invited tenders publicly but to have asked certain gentlemen to send in designs for the new building. At the same time they obtained an assessor, with distinct qualifications for the office, to advise them as to what plan should be chosen. The first proceeding was unsatisfactory, for there was no guarantee that all the persons invited were particularly fitted to build an infirmary. Of the 10 gentlemen or firms from whom an architectural design was requested three reside in London, two in Edinburgh, and five in Glasgow, and while all have claims to be considered first-class architects their names are not equally well known as specialists in hospital work. As the committee, however, themselves submitted plans to the architects they may have considered too much special knowledge unnecessary. The second proceeding, the enlisting of the services of an assessor, is only a good one if they follow his advice. This the committee have not done. Mr. R. ROWLAND ANDERSON was the assessor and his report was published in the *Glasgow Herald* of Jan. 3rd, 1901. Out of the 10 designs it appears that he set aside four in a preferred class. Of these he selected one, bringing to a focus his opinion of the relative merits of the designs by considering among other things the following practical points: the use that it was proposed to make of the site, the amount of sunlight the buildings would receive, and the architectural treatment of the building as a commemorative memorial of the Queen's Diamond Jubilee. The Jubilee Committee completely rejected their assessor's advice and chose not the design that he placed first, nor even one of the four on his selected list, but a fifth of which in his report he only remarks that "it closely follows the committee's plans."

We do not wish to appear ungracious to the Jubilee Committee, who no doubt have been at trouble and pains for the good of the community according to their lights, and who are, we believe, responsible, directly or indirectly, for a large proportion of the money raised for the new hospital. But we would ask them to consider whether they are wise in jeopardising the value of the infirmary by not taking every possible preliminary step to see that what they are about to build is exactly what is wanted—that it is both the best and the cheapest that can be got for the money. In the face of the fact that they have neglected the advice of the assessor, they should set themselves right with the public for whom they are working. They should obtain from their medical staff an opinion upon the design of the new hospital which they have accepted and they should then make every attempt to modify the design according to the accurate knowledge of the men who will have to do their scientific work within the walls of the building. We are glad to learn that the committee intend to publish the designs of the unsuccessful competitors side by side with the design which has met with their approval, and it would be well that the estimated cost of each building should be appended to the designs. The cheapest building is not necessarily the best, but if the Jubilee Committee can demonstrate in the way we suggest that they have selected a plan with reasonable regard for economy and presenting no shortcomings from the medical point of view they will have a very good answer to any criticism of their action. But if it should turn out that they have approved a design which in the eyes of practical builders does not make the best use of the available space, which is not the one chosen for them by their expert adviser, which has no special economy to recommend it, and which their medical staff think might be improved upon, sooner or later the city of Glasgow may hold them responsible for any shortcomings discovered in the new infirmary.

The Enfield Isolation Hospital.

THERE are many duties, both statutory and moral, which devolve nowadays upon a district council, and it will perhaps be generally accepted that one of the most responsible duties thus devolving is provision for the isolation of the infectious sick. Primarily, such isolation has for its object the protection of the public health, but the actual treatment of the sick cannot by any means be regarded as a secondary matter. Inasmuch as, at least, moral suasion is often exercised by the officers of the sanitary authority with the view of inducing parents to allow their children to be sent to the isolation hospital, the accommodation provided at such a hospital should be in every sense satisfactory. Above all, perhaps, it is necessary that such an institution should possess the confidence of the public for which it caters, for without this confidence the hospital cannot prove a success. It is desirable that each patient who leaves the wards of the hospital shall be so mentally constituted in regard to the institution that he shall look back to his sojourn there with pleasure and regard the staff as some of his best friends.

We therefore regret to see that the management of the Enfield Isolation Hospital has laid itself open to criticism in the local press. Confidence in its administration is likely to be shaken and its public utility diminished. The institution in question has accommodation, it appears, for some 80 patients and the average number of patients has been, we are informed, about 50. Scarlet fever, diphtheria, and enteric fever are treated therein, but there is as yet no resident medical officer, the patients being attended by the medical officer of health, who engages in private practice and who resides some three miles distant from the hospital. He is in telephonic communication with the institution and can, it is alleged, reach it in about 20 minutes—if he be at home when the request for his attendance arrives. If he is out he has, we gather, arranged with one of his colleagues in the town to make the necessary visit of urgency. It is, of course, understood that the medical officer of health visits the hospital at least once daily. Critics of the hospital regard this arrangement as unsatisfactory, and they point to a death-rate of 25 per cent. among the diphtheria patients in justification. This percentage refers to 12 deaths from diphtheria, and it is alleged that several of these were moribund on arrival —a condition of affairs which we ourselves have often witnessed at hospitals considerably larger than the one with which we are now dealing. It is, however, the fact of diphtheritic patients being admitted into the Enfield

Isolation Hospital which makes us unhesitatingly agree with those who advocate the appointment of a resident medical officer. In our view, if there is no such officer, cases *in extremis* and requiring immediate tracheotomy must not be sent into the hospital. Antitoxin will, we know, do much when used early in the disease, but it is not of such great value later when it is reasonable to assume that the medical practitioner has applied the remedy and that it has already failed in its effect. We cannot decide between the rival statements in connexion with the Enfield Isolation Hospital, but we are in a position to affirm that the practice of sending in patients for operation is by no means unknown to us, and all hospitals which take in diphtheritic patients should, in our view, provide for such emergencies. We are, of course, perfectly aware that the children of the poor have not always a medical man at their immediate call —nor, indeed, have the children of the rich; and it is clear that the provisions for obtaining medical aid at the Enfield Isolation Hospital are far better than those possessed by many of those who are likely to become inmates of the institution. Telephonic communication is as yet by no means common between patients and their medical adviser, and the family medical man may obviously be absent when a message arrives. These things are alleged in defence of the arrangement by which telephonic communication with the medical officer of health takes the place of the services of a resident medical officer, but the conditions instanced are not quite parallel. When as many as 50 patients, some of whom are suffering from diphtheria, are gathered together in an institution to which people are often induced to go, a resident medical officer should, we think, always be appointed.

Other allegations made against the Enfield Isolation Hospital are, for instance, that no nurse is despatched with the ambulance which brings the patients from their homes, and that the patients, when discharged, have perforce to reach their homes as best they may. Both these are matters of detail which may well be considered by the management, but in regard to the ambulance, which, by the way, is a modern and well-constructed one, an attendant always appears to accompany it, while in regard to the latter point, that of discharge, the same allegation applies to the hospitals of the Metropolitan Asylums Board. As a general rule, patients when discharged from a fever hospital are quite capable of reaching their homes without danger or discomfort, and it has to be remembered that they have probably been much in the open air during their sojourn at the institution. Moreover, in rural districts during inclement weather the exercise of a little common sense in postponing, where necessary, the discharge, should go far to meet the difficulty raised, and in the case of very young children or children in arms, some suitable provision for traversing long distances should naturally be made. As regards the future, the hospital committee have asked the medical practitioners of the district to indicate upon the certificate of notification whether or not the patient is in a suitable condition to be removed to hospital, and in furnishing this information regard will doubtless be had to the accommodation provided. This seems to us to be a very reasonable request, and it is to be hoped that there will be no difficulty in complying with it. Yet another cause of complaint is that parents are only informed of the condition of the sick in the event of their becoming seriously ill, but such an inconvenience can easily be remedied by placing the hospital in telephonic communication with the district offices, and perhaps other convenient centres, in order that the not unnatural anxiety of parents may be allayed without application to the hospital itself. We suggest to the management of the Enfield Isolation Hospital the desirability, in the interests of all concerned, of taking into serious consideration the points here referred to.

Annotations.

"Ne quid nimis."

DEATH FROM SUFFOCATION AFTER A DENTAL OPERATION.

A PARAGRAPH of a distinctly misleading nature has appeared in several lay contemporaries which states that a patient at Newport, Mon., died from the effects of "laughing gas" during a dental operation. The facts of the deplorable case, of which we gave a brief account last week, are, we believe, correctly stated as follows. The patient, a healthy miner, went to a dentist's rooms to have 11 teeth extracted under an anæsthetic. The dentist, a Licentiate in Dental Surgery of Ireland, administered nitrous oxide and ether, a nurse, but no medical man, being present. The removal of the teeth was successfully accomplished and sponges without attachment outside the mouth were used to press on the gums to check the hæmorrhage. The deceased sat listlessly in the dental chair for two or three minutes after the completion of the operation, then sprang to his feet, drew in a deep breath, and gasped for air. As signs of asphyxia were plainly evident the dentist felt digitally for any obstruction in the air-passages and finding none commenced artificial respiration. A medical man was sent for and on his prompt attendance he found the patient deeply cyanosed, lying upon the floor, and the dentist performing artificial respiration. The pupils were widely dilated and life appeared to be extinct. After pulling forward the tongue and again employing artificial respiration, the medical man examined the back of the throat with his finger and felt externally with the view of discovering if any foreign body was lodged in the air-passages. Remedies were used, but without effect. A necropsy was made on the following day and a sponge was found lodged below the vocal cords. The obvious lessons to be gathered from the above narrative are twofold. We have more than once urged the desirability of the presence of two qualified medical men when only a trifling operation has to be performed under an anæsthetic. It is even more necessary when the operator is a dentist not possessing a surgical qualification that a duly qualified medical man should be with him to give the anæsthetic. No man can with safety to his patient administer an anæsthetic and operate single-handed. But further, there is in every case in which an anæsthetic is given a liability to accident, and at any moment tracheotomy or some other purely surgical procedure may be required to meet emergencies arising as a result of the operation or of the anæsthetic. Is a dentist competent to deal with such emergencies? We do not mean is he legally justified in giving an anæsthetic; that is a matter beside our present contention, but we ask, is he by his education and experience able to perform in a satisfactory manner the surgical operations which may be required as a result of a sudden emergency? We submit that he is not. His armamentarium will in nine cases out of ten not contain

a set of tracheotomy instruments, and it is not in the least unlikely that he has never performed the operation. In the case of ether or chloroform certainly, and we should add in that of nitrous oxide, a dentist would be well advised if he refrained from giving the anæsthetic, and he should under no circumstances undertake so grave a matter without the aid of a surgeon. The second lesson is one of practice. As we understand the case, the man was apparently recovering from the narcosis and the sudden appearance of cyanosis with dyspnœa could point to only one cause—the occlusion of the air-passages by a foreign body. The dentist and the medical man appear to have recognised this, although the latter as he came late upon the scene was possibly put off his guard by the absence of knowledge of the course which the symptoms had run. Artificial respiration was obviously useless as no air entered the lungs, and tracheotomy was not performed. This operation might have saved the man's life if it had been done in time—that is, if the surgeon had been present from the beginning of the proceedings.

A SMOKELESS UNDERGROUND RAILWAY.

THE proposal to adopt electric traction on the Metropolitan District Railway has been thoroughly supported by the shareholders of the company, and we are not surprised, since they must feel that all prospect of income is doomed by the fact that better means of travelling underground are at hand, while the public are sick of the experience that is offered to them by the existing underground steam trains. These are exceedingly unhealthy and exceedingly dirty, and apparently the attempts that have been made at ventilation have produced no practical results. The use, therefore, of smokeless traction is the only chance, it seems to us, of making the old underground railways wholesome and of saving the enterprise from absolute financial disaster. It cannot be denied that this system is the most useful line in London, and once wipe away the reproach as to the filthy state of its tunnels and railway carriages it will undoubtedly secure a big *clientèle*. We cordially welcome the decision that electric traction is to be used, but at the same time we are curious to know how it is proposed to meet the difficulty of trains of other systems running upon the lines. Thus the Midland, the Great Northern, the London and North-Western, and the Great Western railway companies, all overground systems, have running powers on the underground railway. Would the steam-engine be detached somewhere and an electric engine be hitched on? This would, of course, mean delay.

QUACKS AND ABORTION.

AN inquest concluded at Huntingdon on Jan. 2nd shows that the trade in quack medicines which are liable to be taken by pregnant women in the hope of procuring miscarriage has not yet ceased; that newspapers are still, whether knowingly or not, the means of advertising such nostrums; and that the compounds sold are apparently capable of causing the desired effect, subject to the reservation that they must be taken in very large quantities. That the death of the person so procuring abortion upon herself is a not unlikely sequel to her temerity also stands revealed. In the Huntingdon case the facts proved at the inquest differ in no material particular from those which have been brought out in many of the inquiries that were more common before recent prosecutions, and before our articles on the subject had called attention to the danger of selling would-be abortifacients and publishing advertisements of them. The woman upon whom the inquest was held had died from acute general peritonitis following miscarriage. Before death she had admitted taking constantly for about three weeks, with the object of procuring abortion, certain pills the advertisement of which she said that she had seen in a newspaper. She had been advised to take the pills, she said, by a male relative who, having been duly cautioned by the coroner, decided not to give evidence. The pills on analysis by Dr. Thomas Stevenson were found to contain iron or steel, aloes, colocynth, apiol, and strychnine, the majority of which ingredients, it will be remembered, figured in several of the compounds analysed by us in our inquiry into "Quacks and Abortion"[1] Dr. Stevenson added in his evidence that the pills analysed by him were not such that, taken in accordance with their printed label, they would be likely to produce miscarriage, but that taken as the deceased had apparently taken them they might have that result. It is always possible that legal proceedings may follow upon such an inquiry, and we therefore withhold further comment. We note, however, that the father of the deceased seems to have reproached the medical man who was called in by her when it was too late to save her life, with not having at once informed him of the cause of her condition. The coroner, Mr. C. B. Margetts, promptly and firmly supported the medical man in the position which he had taken up, pointing out that as long as it was possible that the woman's life might be saved he was the custodian of her secret, amounting to the confession that she had committed a criminal act, and that, so far from his having any duty to communicate this to her relatives, it might have been his duty to keep it as a professional secret from the knowledge of everyone. On her death becoming imminent, the coroner added, the medical man's position changed, because it was then evident that an inquiry must take place into the causes of it; and on such an occasion, when the patient can no longer suffer by the divulging of her secret, publicity followed by the fullest inquiry makes for the public good and for the protection and warning of other women.

WHEN IS AN IMPROVEMENT NOT AN IMPROVEMENT?

A CORRESPONDENT writes from Bournemouth:—"Public opinion in this place has lately been greatly excited over an 'Omnibus' Bill which the corporation proposes to introduce during the next session of Parliament. Much of it is only of local interest, as it deals with such matters as electric tramways, widening roads, &c.; but one clause is concerned with the acquisition by the corporation of a large open space, the Horseshoe Common, as a site for 'municipal and other buildings.' This proposition involves practically the destruction of one of the principal 'lungs' of the town and is therefore of the greatest interest to all those medical men who have been in the habit of sending their patients to this really delightful health resort, as I hope I may call our town although I live in it. The plot of ground, 14 acres in extent, is well known to all visitors to Bournemouth. It is in the very centre of the town and is a bit of wild moorland, surrounded by fir-trees and covered with gorse, bracken, and heather. As far as I know, no such bit of unadorned nature exists in the centre of any other town in the kingdom. By an Act of Parliament, obtained by the corporation so recently as 1897, two acres of this ground at its lower end were given up to the corporation as a site for the municipal buildings, but it was expressly stipulated that the remaining 12 acres should (for 99 years) be reserved for gardens and pleasure-grounds. '*L'appétit vient en mangeant*,' however; and it has grown so rapidly that now the corporation desires to devour the whole of the space. What may be its immediate intention is not declared, but the clause in question would

[1] THE LANCET, Dec. 10th (p. 1570), 17th (p. 1651), 24th (p. 1723), and 31st (p. 1807), 1898, and Jan. 21st (p. 182), Feb. 4th (p. 327), March 11th (p. 717) and 25th (p. 856), April 1st (p. 908), June 24th (p. 1739), July 8th (p. 111) and 15th (p. 174), and Dec. 2nd (p. 1540), 1899.

undoubtedly give it power to erect any building it pleased upon the site. Already a free library, baths and washhouses, and a terminus station for the Great Western Railway have been mentioned as possible 'improvements' of the common. Numerous petitions and memorials on the subject have been addressed to the council and to the ground landowner, and have been signed by the most prominent of the medical practitioners here, but, so far, they deal chiefly with the burdens that will be charged upon the rates under the new scheme. Surely the question of the injury that will be inflicted upon the public health of the town is more important, while the lowering of the deservedly high reputation of Bournemouth in the eyes of our medical colleagues throughout the kingdom may, directly and indirectly, cost the community more than is implied in the raising of rates." Thus our correspondent, and we have only to say that we agree with him cordially. Every municipality should endeavour to provide itself with good premises, for it is expected to be as far as possible an example of the cleanliness and order which it exists to maintain. But a municipality should not house itself well at the expense of the best interests of the inhabitants of the place under its charge, and the corporation of Bournemouth will have to make out a case of absolute necessity if it wishes to justify the proposed destruction of Horseshoe Common. A distinguishing feature in a place with the reputation of Bournemouth should not be lightly obliterated, and we trust that organised opposition to the scheme of the corporation will be set on foot. If in the face of this resistance the corporation can show that its scheme is necessary for the well-being of Bournemouth it will be justified in proceeding despite of sentiment; otherwise, however fine the buildings which it erects, it will have perpetrated an act of Vandalism.

EPIDEMICS OF SMALL-POX.

OUR sanitary laws, including the provision of a system for the notification of the chief infectious diseases and for their isolation, have the disadvantage of throwing us somewhat off our guard as to the risks we run. This is especially so in the case of small-pox, which is no sooner detected than it is isolated severely and all persons exposed to the infection are isolated too and revaccinated into the bargain. But in spite of all such laws we are reminded that small-pox is still small-pox, and that it will sooner or later assert itself in the absence of efficient vaccination and revaccination on an epidemic scale. Our Paris correspondent told us in THE LANCET of Nov. 24th of a recrudescence of small-pox in that city, where in ordinary times, owing to the vaccination laws being obligatory, there are very few cases. In 1899 there were only four deaths. In 1900 came the Exhibition and an influx of foreigners. From Jan. 1st to the end of May there were 15 deaths, from June 1st to Nov. 11th there were 100 deaths, and our correspondent reported in THE LANCET of Dec. 22nd that 17 deaths had occurred in the previous week—as high a rate as any recorded since the beginning of the epidemic, and this in spite of vigorous measures of the police for promoting free revaccination and the opening of stations at all hospitals and at most of the *mairies*, which were thronged all day long. Again, the *Medical Record* of New York of Dec. 8th states that a nest of small-pox patients had been discovered by the Board of Health in West Sixty-ninth-street. Between 30 and 40 patients were found and removed to hospital. Our contemporary adds what, of course, we expect to read, that the result of the discovery and its publication in the papers has been a vaccination boom of no mean proportions. The publication of such facts may serve to restore the reason of some people and their power to form a fair estimate of the situation of this country with its ever-accumulating millions of unvaccinated people and its constant contact with New York and Paris. No system of sanitary police yet discovered can be relied on to protect unvaccinated persons or persons who have not undergone proper revaccination. Cases of small-pox occur unexpectedly. The sufferers move about in a state of undefined and perhaps unsuspected malaise for days, infecting others as they go along, till, as in New York, a nest of cases has accumulated. We should be failing in our duty if we did not give editorial prominence to such risks. But in the present mood of English intelligence on the subject we do not expect that anything short of an epidemic will drive people to the vaccinator. Then they will run with undignified haste when it may be too late. In the meantime all fair and sensible people will see that the epidemics we refer to, and all epidemics of small-pox, are only controlled by revaccination efficiently performed.

A MODIFICATION IN OPHTHALMIC TEST-TYPES.

DR. E. PRAUN of Darmstadt has proposed an ingenious substitute for the types generally in use for the purpose of testing the sight.[1] He observed that some school-children and also a railway engine-driver whom he had occasion to examine succeeded in learning the ordinary test-types by heart, so that they could name the letters without being able to see them distinctly, and thereby made their vision appear to be better than it really was. In order to counteract this artifice Dr. Praun suggests that the use of letters of the alphabet as test-types should be discontinued and substitutes for them two thick parallel black lines of unequal length joined together by their ends, some of them at an angle of 45° and others at a right angle forming L. These radiating pairs of lines he regards as the hands of a clock, and his sheet of test-types consists of 47 such pairs of lines of different sizes placed within circles, arranged in two squares of 9 and 36 figures respectively and 2 separate figures. Each of these squares is mounted on cardboard and rotated into different positions, so that the most retentive memory would be unable to remember all the possible combinations and the reality of the test would be assured.

THE PSYCHOSES OF ENTERIC FEVER.

IN a recent issue of the *Münchener Medicinische Wochenschrift* (Nov. 20th, 1900) Dr. Deiters gives an account of his observations made at the asylum at Andernack on the various psychoses occurring in typhoid fever. These psychoses he divides—following the lines laid down by Kraepelin—into three groups—viz., first, the initial delirium attributable to the specific toxins or ferments circulating in the patient's blood and acting on the brain; secondly, the psychical disturbance of the pyrexial period attributable to the action of toxins and of the high temperature; and, thirdly, the post-febrile psychoses associated with the stage of convalescence and the condition of general bodily and cerebral exhaustion during this stage. In illustration of the initial delirium he records two cases occurring in children (one male and one female) of neurotic parents, the symptoms being those of acute mental confusion (Verwirrtheit) developing on a basis of hallucinations. This form of mental confusion constitutes the culminating point of a series of prodromal symptoms, the chief of which are restlessness, dulness, and apathy, and wet and dirty habits, the total duration of these symptoms being about 10 days. The pyrexial period then sets in and is marked by the acute psychical disturbance mentioned. The distinctive clinical symptoms of enteric fever—viz., rose spots on the abdomen and chest, splenic enlargement and tenderness,

[1] Tafel zur Bestimmung der Sehschärfe mittelst der Uhr. (Sheet of Diagrams for the Estimation of the Sharpness of Vision, arranged on the Principle of a Clock-face.) Wiesbaden: J. F. Bergmann. Glasgow: F. Bauermeister. Price 1 mark 20 pfennig.

and Widal's reaction with the blood—were found in one of the patients, a male, while the diazo-reaction of the urine was established in the case of the female patient. The latter case ended fatally and a necropsy revealed typical enteric ulcers in Peyer's patches in the large intestine, and right-sided fibrinous pleurisy. Dr. Deiters comments on the clinical importance of recognising that such delirious manifestations occurring in a neurotic child at the onset of fever should make the physician suspect typhoid fever, and considers that treatment in bed should at once be adopted in view of the possible gravity of the case.

THE ASTLEY COOPER PRIZE.

As will be seen by an advertisement in our last issue, the next triennial prize of £300, under the will of the late Sir Astley P. Cooper, Bart., will be awarded to the author of the best essay or treatise on "The Pathology of Carcinoma and the Distribution and Frequency of the Secondary Deposits, corresponding to the Various Primary Growths." The competition is open to everyone except the staffs of Guy's and St. Thomas's Hospitals and their relations, but the essay must not be the production of two or more authors, and essays, written in English, must be sent to Guy's Hospital, addressed to the physicians and surgeons, on or before Jan. 1st, 1904. It is possible that the successful essay will be printed in the Guy's Hospital Reports, but this will in no way prevent the author from publishing it elsewhere after obtaining permission. Further particulars as to the conditions of competition and the like may be obtained on application to Dr. Newton Pitt, Guy's Hospital, London, S.E.

RADIOSCOPY OF THE MEDIASTINUM.

IN a paper[1] read at the International Congress of Electrology and Radiology, Paris, 1900, Dr. Mignon, after pointing out the difficulty of examining clinically the mediastina, divides his subject into three parts: (1) the anterior; (2) the posterior; and (3) the lateral oblique methods of examining the mediastina with the x rays. Under the first division he calls attention to the shadow cast by the thymus gland in children up to the third year. He then describes a shadow that is occasionally seen in radiographs of the adult chest situated on each side of the manubrium sterni and which extends obliquely upwards and outwards towards the axillæ and says that this shadow corresponds to the large vascular trunks. With this explanation we cannot agree. The shadow in question is found on stereoscopic examination to be outside the chest and corresponds to the anterior axillary fold. Dr. Mignon then goes on to the consideration of the heart shadow and points out that its situation, independently of pathological displacements (dexiocardia, pleurisy with effusion, &c.), is not always the same, the position being different in the standing from the recumbent position. He might have added that no two heart shadows are exactly alike. Radiographically one man might be known from another by the shadow of his heart. We quite agree with Dr. Mignon's view that the volume of the heart cannot be estimated by a screen examination only. Dr. Mignon thinks the pericardium is not visible on a screen examination, but says that in some skiagrams the observer may be able to distinguish beyond the limit of the heart shadow a lighter shadow that corresponds in position to the pericardium. We fully agree. Light streaks rather than shadows are often seen running parallel with the right and left borders of the heart, which in the dead subject, with lungs removed, clearly correspond to the borders of the pericardium. Dr. Mignon's paper is open, however, to some criticism. In discussing the position of the shadow thrown by the aortic arch and the changes under which it goes in aneurysmal dilatations Dr. Mignon makes no mention of the stereoscopic method of examination. He appears to be unacquainted with this important means of diagnosis, which has been rendered easy of application since Mr. Mackenzie Davidson invented the stereoscopic screen. In the second part of the paper Dr. Mignon deals with the examination of the posterior mediastinum and the detection of enlarged bronchial glands and aneurysms of the thoracic aorta. He maintains that the x rays are the only means of diagnosing accurately an aneurysm of this part of the aorta, which a good many clinicians will consider too sweeping a statement. For the diagnosis of abnormalities and diseases of the œsophagus Dr. Mignon recommends the swallowing of metallic balls attached to strings as preferable to the metallic sound in cases where hæmorrhage or perforation of the œsophagus is to be feared, but in our opinion the suggested manœuvre might be as dangerous as the method which it is designed to supersede. The third part is the most valuable portion of the paper: that is, the lateral oblique method of examining the mediastina. It is well known that a strictly lateral view of the chest, either with the screen or photographic plate, shows nothing very definite. Dr. Mignon's method appears to us to be a valuable one. It consists in getting an oblique view of the chest either with the screen anteriorly or posteriorly, so that we have a lateral oblique view anteriorly and posteriorly. By this method Dr. Mignon says a clear zone is seen bounded as follows: below it is limited by the convex shadow of the diaphragm, in front by the shadow of the heart, behind by the shadow of the vertebral column, which includes those of the aorta, vena cava, and œsophagus. If the aorta be the seat of an aneurysm the anterior border of this shadow is not regularly vertical. This clear zone is somewhat triangular in shape. Dr. Mignon proposes to call it the retro-cardiac triangle. By the lateral oblique method we see that the heart is not in actual contact with the anterior chest wall—a clear space is seen between them corresponding to the anterior mediastinum. Dr. Mignon claims that by this oblique method of examination pathological changes in the mediastina may be discovered which would be missed in an anterior or posterior examination only. Valuable as this method may be we still think that it is not superior to the stereoscopic method of examination, by which means we obtain the third dimension in space. Although we have found some fault, the paper is an extremely interesting one and should be read by all interested in radiography of the chest.

[1] L'Examen du Médiastin par la Radioscopie et la Radiographie, by Dr. M. Mignon (of Nice). Paris: G. Steinheil. 1900.

THE LOGIC OF A CORONER.

FROM the *Liverpool Post* of Jan. 4th we learn that on the previous day an inquest was held by the county coroner at the St. Helen's Town-hall, on the body of Mary Ann Teresa Ronchetti, aged 64 years, wife of the caretaker of St. Joseph's Roman Catholic Schools. According to her husband's statement the deceased had suffered from paralysis for 18 months. Early on Sunday, Dec. 23rd, she fell out of bed and fractured her leg. Mr. P. J. O'Keefe, who was summoned as a witness, said that he was called in to see Mrs. Ronchetti on the day of her accident and found her suffering from bronchitis, fracture of the left leg, and cardiac syncope. He ordered her removal to the Providence Hospital. In the course of the proceedings the coroner produced Mr. O'Keefe's certificate, which ascribed the woman's death primarily to apoplexy and bronchitis, and secondarily to compound fraction of the leg with cardiac syncope. On being asked whether the compound fracture had accelerated death in any degree, Mr. O'Keefe said that he scarcely thought that it had done so, and that the bronchitis alone was

sufficient to account for death. Upon this the coroner appears, according to the newspaper report, to have censured him severely, giving it as his opinion that if the fracture of the leg had nothing to do with the death it should not have been mentioned in the certificate. In vain Mr. O'Keefe explained that he had mentioned the fracture in order to comply with the instructions of the Registrar-General. "If I had not done it," he said, "I might have been in the wrong. Even though you cannot absolutely connect things with the cause of death you are bound to put them down." Upon this followed an angry altercation between the coroner and the witness. Addressing Mr. O'Keefe, the coroner is reported to have said, "You and I have differed before, and we differ again now. I did give you credit for having a logical mind, whatever else you have. I am trying to drive some logic into you," &c. We have not space to follow the coroner further in his criticisms. We would, however, remark in passing that whatever may be the qualifications that the learned coroner possesses as a teacher of logic, his arguments, as reported in the local newspaper, fail to impress us with his skill in the application of that science. We trust that on reflection the coroner will see it right to apologise for his discourteous conduct towards a medical witness who, in spite of the coroner's opinion to the contrary, appears to us to have honourably done his duty. We would remind the coroner that a compound fracture of a limb is a very serious injury, quite sufficient of itself to cause death under certain circumstances, especially in the case of a paralysed woman 64 years of age. We do not know what instructions the authorities at Somerset House may have issued in such cases, but we are convinced that if Mr. O'Keefe had omitted to state in his certificate, in addition to the primary cause of death, the fact that his patient had sustained a dangerous injury of this kind, he would have incurred a very serious responsibility for which as a practitioner of medicine he would have been justly censurable. The statement of the fact of injury could do no harm, but its suppression might conceivably have led to a miscarriage of justice.

MR. SHAW-LEFEVRE AND THE LLANDAFF COMMISSION ON THE LONDON WATER-SUPPLY.

WE had the pleasure lately to record the facts that Mr. Long, the President of the Local Government Board, has undertaken to give his immediate attention to the question of the metropolitan water-supply, and that he has publicly expressed his wish that the Metropolitan Boroughs and the extra-metropolitan Authorities, the bodies chiefly interested in this question, should give him their views as to whether it is desirable that any changes should be made in the present arrangements with regard to the water-supply, and if so should state what form these changes should take. Mr. Long's appeal has apparently displeased Mr. G. Shaw-Lefevre who, in a letter which appeared in the *Times* of Dec. 28th, makes a violent attack on the report of the Llandaff Commission—"I would suggest to the President of the Local Government Board that in the interval between this and the year 1902, when he has undertaken to introduce a Government Bill on the subject, he should appoint another Royal Commission to inquire into the scheme of the last one—a commission this time '*de lunatico inquirendo*.'" This brief citation will suffice to show the spirit in which Mr. Shaw-Lefevre's letter is written. We do not propose to deal at length with the various points raised by Mr. Shaw-Lefevre, but as he writes as an interpreter of the Llandaff report we feel it necessary to point out some mistakes into which he has fallen in regard to the matter. The mistakes are fundamental. The Llandaff Commission amongst other things were instructed to report "whether, having regard to financial considerations and to present and prospective requirements as regards water-supply in the districts within the limits of supply of the metropolitan water companies, it is desirable in the interests of the ratepayers and water consumers in those districts that the undertakings of the water companies should be acquired and managed either by one authority or by several authorities, and if so, what should be such authority or authorities." The Llandaff Commission reported that a Water Board should be appointed, that it should be a permanent body, that the members should be selected on account of their business capacity and, if possible, their knowledge of matters connected with water-supply. Mr. Lefevre complains that this scheme was not "ventilated" by the Commission. The Commission were not appointed to ventilate a scheme but to draw up a scheme. This they did. In the course of their inquiry the Commission thoroughly "ventilated" a scheme propounded by the London County Council. In their report it would not be too much to say that the Commission did not content themselves with "ventilating"; they even had the hardihood to "blow upon" the scheme of the London County Council. We have already at some length summarised the Llandaff report, and we have not scrupled to point out its weak points, but the letter of Mr. Shaw-Lefevre is unjust and ungenerous to members of the Commission. Had he been present at all the sittings of the Commission or had he carefully read the shorthand notes of the evidence we are convinced that he would not have written in the spirit of his letter to the *Times*. According to general rumour Lord Llandaff himself drew up the report, and however this may be, the lucidity and ability displayed in it are undeniable. The late Major-General Scott, the Water Examiner to the Local Government Board, was able to explain to the Commission all the intricacies and difficulties of the question, and Lord Llandaff examined the witnesses with the greatest thoroughness. On careful winnowing, much of the evidence was found not to be weighty and much of the time of the Commission was thereby wasted by witnesses. In such conditions a lazy or weak chairman might have been deceived or might have become irritable. But in the whole of this long inquiry we can recall no single instance in which Lord Llandaff administered a reproof which was not entirely deserved.

A MEDICAL TRIBUTE TO THE FATHER OF ELECTRICAL SCIENCE.

THE members of the medical profession at Colchester have combined to erect a full-length marble statue of Dr. William Gilberd (or Gilbert), the famous physician to Queen Elizabeth, whose work, "De Magnete," published in 1600, laid the foundations of electrical science. The importance of Gilberd's researches can scarcely be exaggerated. As Galileo said of him, he is "a man of enviable greatness," and the medical profession may justly hold his name and reputation in the highest possible honour. Gilberd was born in Colchester, where his father occupied the position of Recorder. He showed his regard for his native town by describing himself on the title-page of "De Magnete" as "Gulielmus Gilbertus Colcestrensis." He died in Colchester and was buried a few yards only from his birthplace, in the church of Holy Trinity, where his monument remains. The statue which is to be erected in his honour will be placed in a niche in the main façade of the new Town Hall at Colchester, a handsome building now being erected from the designs of Mr. John Belcher, A.R.A. The cost of the statue will be not less than £150, and towards this sum Mr. Henry Laver, F.S.A., the senior medical practitioner of

the town—who is acting as treasurer—has received £130, entirely contributed by the medical men of the borough or its immediate neighbourhood. The medical men of Colchester have done honour to themselves and their profession by their prompt and generous response to the appeal. issued less than a month since by Mr. Laver. As Gilberd's fame is a glory to the whole medical profession, and, indeed, to the whole English-speaking race, it is possible that there may be some of our readers who would like to help the medical men of Colchester—not a very numerous body—to secure the required total, or, still better, to obtain an even larger sum, so that a statue may be erected worthy of one of the greatest of Englishmen. This will, strange to say, be the first statue ever erected of this pioneer in scientific research, the father of the electrical science which has done so much to transform the history of the world. The stipulated minimum, £150, seems but a small sum for such a purpose, and we hope to hear that it has been exceeded.

THE REMOVAL OF SNOW FROM THE STREETS.

THE methods of removal of snow from our streets, like the problem of the prevention of fog in the metropolitan atmosphere, prove a hardy annual for discussion. The discussion, however, soon dies down as either nuisance naturally disappears, but it becomes once more active at the next serious snowfall or at the next prevalence of fog, as the case may be. It cannot be said that in regard either to fog or snowfall, in spite of all discussion, the metropolis is one jot nearer a better state of things; but we hope that the matter will not be allowed to drop, now that the thaw which set in on Wednesday has relieved our municipal authorities in London from immediate anxiety. We desire to have the questions threshed out in times of meteorological peace, so that our resistant forces may be ready when the heavens again declare war. The conditions favourable to the production of fog are, we fear, well-nigh impossible to avoid, but it seems odd that no really satisfactory way has been found for the disposal of snow in the streets. The removal of snow by cartage is at its best a slow and clumsy process, while its disposal by liquefaction, as by the addition of salt, is highly objectionable unless certain precautions be taken, although the method may be expeditious and economical. As is very generally known, it is now the duty of the sanitary authority to clean our streets and to remove refuse, the expression "street refuse" being taken to mean dust, dirt, rubbish, mud, road scrapings, ice, snow, and filth, according to the Public Health (London) Act, 1891. Formerly, each individual occupier of premises was required to keep the pavement exactly in front of his premises clean. This, however, did not refer to the roadway. Now this duty devolves upon the sanitary authority who should see that the streets are properly swept and cleansed "so far as is reasonably practicable." This rule is still in force in spite of representations that have been repeatedly made that the old rule which entailed this duty on the householder should be reverted to. In March last year a householder attempted to bring proceedings against a sanitary authority for non-compliance with this provision of the Public Health Act, but the action failed because it was tendered in the evidence on behalf of the sanitary authority that all that was "reasonably practicable" had been done. It seems to us that the words "reasonably practicable" form a sort of unlimited excuse, and thus militate against the work of the removal of snow being done with that efficiency which in the interests of comfort and health is demanded. The condition of our streets after a fall of snow is invariably a reproach to our sanitary administration. We are well aware that the expeditious disposal of snow is not an easy matter unless steps are taken to have at hand an enormous staff of labourers to shovel and sweep the accumulated snow from the streets. This, however, is not only a source of very great expense, but it is not always practicable to suddenly enlist the services of a temporary staff of scavengers for this purpose. Besides which the fall of snow may continue for a long time. Hence salting the snow has been adopted chiefly on account of the ease and rapidity of the process. The result is a chilling slush which remains to be splashed in all directions and to make every pedestrian uncomfortable. Slush at a temperature near to zero is bad alike for horse and pedestrian. Only one point appears in favour of this method, and that is that it enables the horse to gain a footing. There is some force undoubtedly in this, for it is a cruel spectacle to see horses struggling for a foothold on snow hardened by traffic or by frost. The "salting" method would seem more satisfactory if the cold, fluid, freezing mixture could be at once swept away, but as a rule the slush is left to ooze away and its ultimate dissolution is a slow process. The authorities appear to prohibit the direct discharge of this mixture into the sewers, for what reason we cannot precisely see. Surely melted snow is no worse to deal with than the fluid which carries with it the refuse of the streets, while the presence of salt in the sewers can hardly be an objection. In these days of motor-cars and steam vehicles in our streets we are surprised that no attention has been turned to constructing a steam scoop, so to speak, fitted with a receptacle for the scooped-up snow. Mud is removed from the streets by means of large revolving brushes and we do not see why a similar arrangement could not be adopted for the removal of freshly fallen snow. It may be that the fact that the removal of snow is after all only rarely required does not make it worth while to construct a machine of this kind. But the inconveniences to traffic, besides the ill-health and excessive discomfort occasioned to pedestrians, demand a more rational means of removing the snow than appears to be at present available. We do not doubt that engineers, if they would only give a little attention to the matter and were stimulated by the promise of an award, would quickly solve the problem and thus protect the health and earn the gratitude of thousands. The question arises every year and it is a disgrace to the metropolis that it has not so far been satisfactorily solved.

CREASOTE POISONING.

CREASOTE poisoning is very uncommon. In the *Intercolonial Medical Journal of Australasia* of Oct. 20th, 1900, Mr. Herbert M. Hewlett relates the following case of creasote poisoning in a child. A girl, aged three and a half years, swallowed about two drachms of creasote. Immediately she complained of abdominal pain and was given a tablespoonful of olive oil. She rapidly became unconscious. About 20 minutes afterwards, when she was seen by Mr. Hewlett, she was insensible, with pale face, cyanosed lips, shallow respiration, and imperceptible pulse. The eyes were fixed, the pupils were contracted and immobile, the extremities were cold, and the muscles were flaccid. The stomach was washed out with about two quarts of warm water. A small quantity of food was present and the washings smelt strongly of creasote. The stomach was next washed out with two pints of a strong solution of magnesium sulphate and about six ounces were left in the viscus. Strychnine, $\frac{1}{75}$th of a grain, was injected hypodermically and she was put in blankets and surrounded by hot blankets. An enema of Liebig's extract and brandy was also given. About eight minutes after emptying the stomach the colour of the lips improved and the pulse became perceptible. Ten minutes later the colour was good

and the respiration was full and regular. The pupils were still contracted but reacted to light and the extremities were warm. In a couple of hours she drank white of egg and milk but complained of pain over the stomach, which was relieved by hot fomentations. Urine passed many hours after taking the drug was dark brownish. The first motion was also dark and smelt strongly of creasote. A second sample of urine was of a watery green colour. No after-effects followed and in a couple of days the child was running about again. Creasote closely resembles carbolic acid in its action but is a weaker caustic and does not produce convulsions.

PRIMARY OVARIAN GESTATION.

IN the Annus Medicus for 1900 reference is made to Mdlle. van Tussenbroek's case of primary ovarian gestation. It is stated that Mr. Bland-Sutton was inclined to regard her specimen as a doubtful one of this condition. In fairness to Mdlle. van Tussenbroek it should be pointed out that at the last meeting of the Obstetrical Society of London, on Jan. 2nd, Mr. Bland-Sutton said that he had had an opportunity of examining the specimen itself and microscopical sections of it. Two of these sections he was able to exhibit at the meeting. An examination of them left no doubt as to the existence of chorionic villi, and he was therefore convinced that this form of ectopic gestation was possible. Those who had an opportunity of looking at the sections agreed with Mr. Bland-Sutton's views.

DEPILATION BY HIGH-TENSION ELECTRIC CURRENTS.

AT a recent meeting of the Vienna Society of Physicians Dr. Schiff and Dr. Freund reported an interesting action of high-tension currents on the skin. According to the authors, when the hairy skin is exposed for 20 minutes to the silent discharge of the negative pole of a powerful Ruhmkorff coil, such as is used for the production of the Roentgen rays, the hairs commence to fall out, the hair-bulbs become atrophied after the third exposure, and some days later the portion of the skin which had been exposed becomes perfectly bald. The hair follicles become red and inflamed after the first two exposures. These observations seem to prove that depilation can be produced by the action of high-tension currents and that the depilatory effect of exposure to the Roentgen rays may be accounted for in this way.

MYASTHENIA GRAVIS OR ASTHENIC BULBAR PARALYSIS.

DR. PAUL of Boston, in the *Boston Medical and Surgical Journal* of Dec. 20th, 1900, adds another case to the list of about 70 cases of this obscure disease[1] now known to literature. The case is that of a married woman 23 years of age. One maternal uncle was insane, and there was a neurotic tendency in the father's family. Eight months previously while performing at private theatricals, she suddenly felt weak and unable to rise from the stooping position without assistance. Eventually such acts as ascending stairs or boarding a tramcar became impossible to her unaided. Transient weakness in the arms followed, and there was difficulty in buttoning her dress or in doing embroidery and the like. Transient attacks of diplopia also occurred. On one occasion she fell while carrying her baby upstairs and slid down several steps, without, however, injuring herself. There was lack of expression in the face, and the voice was at times nasal and somewhat indistinct. Swallowing was sometimes awkward, and the neck muscles sometimes suddenly gave way so that the head required support. Mastication was not affected. On three different occasions she fell helpless on the floor, unable to move or speak, and had to be assisted up. Appetite and digestion were good, but she sometimes could not swallow and suffered from choking and cyanosis. Emotional excitement rendered her worse. The sphincters were not affected. The bulbar symptoms increased in severity and death occurred 18 months after the first symptoms. The necropsy, made by Dr. G. Magrath, revealed macroscopically nothing. The diagnosis was "myasthenia gravis," also called asthenic bulbar paralysis or Erb-Goldflam's symptom-complex. In the cases recorded there is a mortality of over 33 per cent. No explanation is offered of the etiology or pathology of the affection, though some writers have suggested that an unknown toxin of microbial origin plays the chief part, and that it acts by partially paralysing the motor-cells of the bulbo-spinal centres.

[1] "Asthenic Bulbar Paralysis," THE LANCET, Oct. 21st, 1899, p. 1110.

PRACTICAL HYGIENE FOR FEMALE TEACHERS.

UNDER the Board of Education Act, 1899, a series of lectures will be given at Bedford College, York-place, Baker-street, W., and at the Sanitary Institute, 72, Margaret-street, W., beginning on Saturday, Jan. 19th. The course will consist of 30 lectures, given on Saturday mornings throughout 1901. It will include practical demonstrations, and visits to schools and places where the application of hygiene in practice may be seen. The various subjects—sanitation of schools, physiology for teachers, psychological attitude of the mind towards the study of childhood, will be dealt with by well-known authorities and will be illustrated by experiments, diagrams, drawings, models, and lantern slides. Opportunities will be given to students to obtain practical acquaintance with the various subjects dealt with in the laboratories of Bedford College and for practical demonstration of sanitary appliances in the Parkes Museum. The course is open to women students over 19 years of age who hold either a teacher's diploma or certificate or have had at least two years' experience in teaching in a secondary school, or who can produce satisfactory evidence that they will be able to benefit by the instruction afforded them. Among the names of the lecturers are Dr. J. S. Edkins, Dr. H. R. Kenwood, and Mr. W. C. C. Pakes.

THE HYGIENIC TREATMENT OF PULMONARY TUBERCULOSIS.

IN the letter from our Paris correspondent which appears in another column the report is given of a committee which was appointed to formulate the conditions of admission to the sanatorium of Angicourt, an institution for the hygienic or "open-air" treatment of pulmonary tuberculosis. The committee suggest that the sanatorium shall be open to indigent inhabitants of Paris afflicted with pulmonary tuberculosis but whose lesions "are presumably curable." To assist in the selection of suitable cases it is further proposed that no patient shall be admitted to the sanatorium without his furnishing a certificate drawn up by his medical attendant showing clearly his family and personal history, the history of his illness, and a complete daily clinical record extending over at least eight consecutive days, setting out details of his pulmonary lesions, his rectal temperatures, his pulse, an analysis of his urine, his weight, and the result of a microscopical examination of his sputa. Thirdly, it is recommended that these certificates shall be examined periodically by a medical committee appointed for that end by the Hospitals Medical Society. These proposals are certainly to be commended and might well be adopted by similar institutions in this country—if the various provisions could be carried out. We quite agree with our correspondent, however, as to the numerous difficulties which would arise in this

respect. Physicians who have had experience in out-patient work know how difficult it often is to make out satisfactorily certificates for admission to convalescent homes; still harder would it be to give a precise account of a patient suffering from pulmonary tuberculosis—in fact, in many cases it would be practically impossible to answer the questions suggested by the Paris committee. One way of overcoming the difficulty would be to accept a less complete account of a case drawn up by a medical man, and if from this the case is presumably a suitable one for this form of treatment the patient might be admitted into the institution for a period of probation with the distinct understanding that if the expectation of the case doing well should not be realised he or she would be discharged. We think that such a plan would be more satisfactory than the one suggested by our correspondent, but the whole question is one to which an answer is not easily found.

THE AUXILIARY NURSES' SOCIETY.

THE numerous nursing societies in existence in London are apparently still insufficient to meet all the demands which are made upon them by the profession and by the public. As a rule, there is no difficulty in obtaining a well-trained nurse when the nature of the case requires more skilled aid than can be afforded by the patients' friends, but considerable difficulty is frequently experienced by medical men in obtaining permanent nurses for prolonged and chronic cases, and to supply this want is one of the main objects of a new society which has just started work under the title of "The Auxiliary Nurses' Society." The nurses are all members of the Royal British Nurses' Association, and in addition to their hospital work they have had some years' experience in private nursing. The society aims also at meeting the need for a body of nurses who are qualified by their age and experience to undertake cases in which either on account of the nature of the malady or of the circumstances of the patient it is undesirable to employ the services of younger women. The office of the society is at 10, Orchard-street, Portman-square. We appreciate the objects with which the association has been founded, and think that medical practitioners may be glad to take advantage of the class of nurse enrolled under its membership.

THE Central London Railway Company have met amicably a committee representing the owners of houses in the vicinity thereof, and as a result the Board of Trade, upon the joint invitation of persons representing both interests, have appointed a committee consisting of Lord Rayleigh, F.R.S., chairman, Sir John Wolfe-Barry, K.C.B., F.R.S., and Professor Ewing, F.R.S., to consider to what extent the working of the traffic on the Central London Railway produces vibration in the adjacent buildings. The committee will also consider what alterations in the conditions of working or in structure can be devised to remedy vibration, and will report on the matter to the Board of Trade.

DR. JOHN C. THRESH, county medical officer of health of Essex, reports that diphtheria is excessively prevalent in the county, especially in the rural districts. The epidemic decreases in one district and increases in others and apparently is traversing the whole county.

THE annual general meeting and election of officers of the Harveian Society will take place at the Stafford Rooms, W., on Thursday, Jan. 17th, at 8 P.M., and will be followed by a conversazione, at which there will be an exhibition of objects of interest from South Africa.

THE Lord Mayor has received about £22,000 in all in response to the Princess of Wales's appeal on behalf of the Soldiers' and Sailors' Families' Association. The sums sent direct to Colonel Gildea bid fair also to make a handsome total.

A TELEGRAM has been received by the Colonial Office, dated Jan. 4th, 1901, from the Government of Mauritius stating that during the week ending Jan. 3rd there were 32 fresh cases of bubonic plague, 23 of which were fatal.

AT the next meeting of the Royal Microscopical Society, to be held at 20, Hanover-square, W., on Wednesday, Jan. 16th, at 8 o'clock, the President, Mr. William Carruthers, will deliver his annual address.

REFLECTIONS ON THERAPEUTICS.

BY HARRY CAMPBELL, M.D., B.S., F.R.C.P. LOND.,
PHYSICIAN TO THE NORTH-WEST LONDON HOSPITAL AND TO THE WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM.

II.[1]

INSTINCT AND REASON IN RELATION TO TREATMENT.

I HAVE hitherto considered the vis medicatrix as carrying on a purely organic process quite independently of the consciousness of the individual, but we cannot altogether exclude consciousness from among the inherent forces which make for the health of the organism. The conscious individual himself to some extent controls his own destiny; what he shall or shall not eat and drink, what clothes he shall wear, what pursuits he shall follow or avoid—these and many other things of a like nature are yet within the choice of all but the very poorest or most unfortunate, however cribbed, cabined, and confined he may feel his lot; and the question arises how far this mental factor of a volition acting on the initiative of experience operates in the direction of preventing or inducing disease, or of ameliorating or aggravating it when already set up.

The lower animals are guided in matters pertaining to their health chiefly by instinct, which is to them an all but infallible guide. But instinct is only capable of acting as guide to an organism in a comparatively simple environment, and one moreover which has been much the same for many generations past. Given such an environment, and an unerring instinct will in process of time evolve by natural selection. The animal will come instinctively to search after the food that is wholesome, to avoid that which is injurious, and to protect itself against harmful agencies of all kinds; and this instinct will be constantly supplemented by the individual experience, or rather by "reason," if we take that term, as we are entitled to take it, to embrace all mental guidance which is not instinctive, even though it may not rise to the level of a conscious intellectual process. As a matter of fact, animals are helped much more by experience than by reason, as reason is generally understood. If, therefore, there are introduced into the environment factors totally unlike any belonging to the ancestral environment, instinct, hitherto all-sufficing, becomes in respect of these new factors a wholly inadequate guide, and it takes long before, by a weeding out of the unfit, instinctive adaptation again occurs. The moth has not yet evolved the instinct to avoid the dazzling lure of the flame, but if countless successive generations continue to be exposed to the danger of it such an instinct will doubtless in the end evolve, by the survival of those for which the fatal attraction has the least force. Hence it happens that when we domesticate a wild animal we find instinct fail it in many particulars. If offered food of which its ancestors had no experience it has to learn by its own experience to distinguish the wholesome from the noxious. On the other hand, it is remarkable how persistent a primitive instinct may be in animals which have long been domesticated, and in which it has not been called out for many generations. Witness the terror excited in the horse by the smell of the wild carnivora

[1] No. 1 was published in THE LANCET of Jan. 5th, 1901, p. 51.

—a horse passing a menagerie will quiver with panic. The very existence of its wild ancestors depended upon their ability to hold their own against the carnivora. No match for these latter animals in strength their safety lay in their swiftness and their wariness to elude pursuit, and in the latter they were greatly aided by the sense of smell which when acute enabled them to scent their foes from afar; hence this sense became, and it still remains, highly specialised in them.

I say we cannot expect instinct to be a trustworthy guide unless the environment is a simple one and has been stable for several successive generations. It is clear that neither of these conditions obtains in the case of man, especially civilised man. His environment is infinitely more complex than was that of his primitive ancestors, and it has moreover varied, and continues to vary, very considerably from generation to generation—it has become, i.e., unstable and *pari passu* with, and as an inevitable result of, this increase in the complexity and instability of the environment, instinct has become less and less adequate as a guide, and reason more and more essential. Hence with the evolution of reason there has been a concomitant dissolution of instinct, until when we arrive at civilised man we find the one guide all but superseded by the other.

Now this places man at a disadvantage as compared with the brutes, since the guidance of reason is not by any means so trustworthy as that of the instinct which it has replaced. It is needless here to enter into a psychological exposition of the defects of reason as a guide for man.[2] To do this with any sort of fulness and completeness would be to write a book on human error. But what does concern us, and that most intimately, is that under the working of this new arrangement, as we may call it, man is continually going wrong in matters physiological, and it is most difficult to set him right. Do not we physicians see him persistently sinning against the laws of health, and that with a temerity that would be utterly amazing did we not know that beneath the temerity there lies a still more astonishing ignorance of all the laws of his being. It is often a task of much difficulty to enforce the most elementary principles of hygiene even among the educated classes; among the uneducated it is well nigh impossible. Soldiers on campaign prefer the risk of contracting typhoid fever to the trouble of boiling their drinking-water, and in India the enforcement of sanitary precautions against such terrible pests as cholera and the plague is not only stubbornly resisted, but leads not infrequently, especially if it runs counter to racial and religious prejudices, to riot and bloodshed. We have had instances of this in Calcutta, in Poona, and in Cawnpore only just recently, and it was but a few weeks ago that the newspapers had to record the acknowledged failure of the Indian Government to enforce the plague regulations, and its consequent resolve to give up the attempt to stamp it out by coercion. "It is hopeless," so runs the report of the official committee appointed to collect evidence, "to carry out effectively any system of plague administration which runs counter to the feelings, susceptibilities, and prejudices of the people." But what a comment is such a statement as this on reason as a guide instead of instinct. Nothing, however, so strikingly shows its inadequacy as the flagrant errors into which it allows mothers to run in regard to the up-bringing of their offspring, and in one particular—the *feeding* of children—I shall seek in its proper place to show that even the specialist physician with all his knowledge has still much to learn.

Instinct fails civilised man in respect both of food and exercise, and, as regards the former both in respect to its quality and its quantity. Sir William Roberts has said that a man's palate constitutes his dietetic conscience, and doubtless the palate is a useful guide, as it is also certainly the one most acceptable to the "natural man." But it is with equal certainty by no means to be depended on as a wholly safe director. The food of civilised man is presented to him in such an appetising and so highly concentrated a form that he is led to eat not only much that is bad for him but also too large a quantity. The individual with a constitutionally clamant appetite is thus far defective as regards his instinct; he derives great pleasure from eating and this leads him almost certainly, his inward monitor failing him, to injure his health by eating too much, and the better his teeth and digestive organs the more likely is he to do this. A wise physician used to say to his gouty patients with strong, hard teeth: "You have good teeth: take care you do not dig your grave with them." Those with constitutionally small appetites, on the other hand, are better equipped in respect of food-instinct, and escape a great deal of trouble in consequence. Here I may refer in passing to the cravings of some people, especially pregnant women, for particular foods. These, though often morbid and hurtful if indulged in, may yet be physiological promptings.

Instinct also often fails to prompt man to take the normal amount of exercise. In the natural state animals are compelled by the struggle for existence to lead active lives, and apart from this they take exercise—especially the young ones—for the sheer pleasure of it; but, as we have seen, in the case of civilised man the struggle for existence does not necessarily entail much exercise, and if not prompted by instinct to take his proper share he suffers in consequence. If, then, man's mental guide fails him even in regard to the most elementary laws of health, how much more untrustworthy must it be as a guide to health-conduct in its more complex bearings.

THE MENTAL GUIDE IN DISEASE.

It being so clearly manifest that as concerns the avoidance of what is calculated to cause disease man's guide is imperfect, we have next to ask how far it may be trusted when he is already suffering from disease. How far do instinct and reason help the sufferer to get well? In answering the question we must bear in mind that in so far as they help at all they must be regarded as part of the vis medicatrix. It is in wild animals again that we find instinct operating most effectively in disease as well as in health. These lick their wounds and keep them exposed to the fresh air, thus anticipating the most recent advances of surgery in their efforts, nature-led, to render them aseptic; there is good reason also to believe that they seek out herbs for their medicinal virtues. We know that our domesticated dog eats grass, apparently for the purpose of inducing vomiting. A sick animal will creep into some dark corner, not only to hide from its foes, but for the rest and quiet so needful in grave disease; and doubtless instinct manifests itself among the lower animals when attacked by disease in many other ways unnoticed by us, ever acting, we may be sure, with that unerring wisdom which characterises all the measures of the great vis medicatrix.

One would expect that if instinct ever asserted itself in man, and asserted itself effectively, it would be in disease especially that it would do so; for disease dates back through untold generations—is, in fact, as old as life itself. And if the vis medicatrix, working on purely organic lines and independently of consciousness, can, as she does, combat disease by means so complex and so potent, we should certainly expect consciousness also, when it comes into play in even the lowly form of instinct, to be a not unimportant factor in the ultimate results. And let it be remembered in this connexion that disease in its fundamental nature is the same in man as it was in his anthropoid ancestors, or in those yet more remote and primitive species that reach back in unending line beyond these into the dim dawn of being. I therefore do not see the same reason for supposing that instinct so far as it determines man's conduct in disease should have atrophied in the same way as it has as a determiner of conduct generally. There is yet another argument that may be urged in support of this view. Disease is a process of dissolution; in it man unevolves—if I may use the clumsy expression,—slipping back to the condition of his more primitive ancestors in whom we find instinct in its most perfected and effective form. We should therefore expect him to display—and there can indeed be no doubt that he does display—curative instincts in disease. The malaise, for instance, which attends acute illnesses, and especially in their onset, secures the rest which is so sorely needed, and we can best realise the great healing value of such premonition by calling to mind those cases of typhoid fever in which, owing to its absence, the patient has not taken to his bed until the disease has got a fatal hold. Again, the loss of appetite and the thirst in fever assuredly serve a good end, and the same may be said of the malaise of megrim, compelling as it does rest of mind and body. The loathing of food felt during the attack further secures rest of the digestive organs and the good effect is enhanced[3] by the nausea and vomiting (which are almost of

[2] See on this subject, Campbell: "The Causation of Disease," p. 197.

[3] See further on this subject, Campbell: The Physiological Effect of Disease, St. Bartholomew's Hospital Reports, 1895, p. 169.

the nature of instincts) by which the flow of bile is stimulated and toxic substances are removed from the body. These instinctive promptings are therapeutically suggestive. Many people, I believe, would be greatly benefited by an occasional 24 hours' fast and copious emesis, though the treatment is of such a nature that few will submit to it. The exquisite pain felt in the arthritis of rheumatic fever is also of the nature of a curative instinct, fixing the joint as in a splint, and by the rest which it thereby secures to it placing it in the best position for recovery. If only the inflamed cardiac valves could be similarly rested who knows but that the endocarditis might clear up as completely as the arthritis? At all events, the valves would not be permanently damaged to the extent they actually are.

It would, of course, be unsafe to allow our patients always to follow their instinctive promptings—in the matter of diet in typhoid fever, let us say—but we shall do well, I think, to heed them more than we do. I could relate more than one instance of patients obeying their instincts in express contradiction to the orders of their medical attendants, and with the happiest results. I remember the case of a woman with acute mammary abscess being ordered not to put the child to the affected side; the result was that the breast got larger and larger, and in three days it had attained enormous dimensions, the pain becoming acute. Unable to bear it, she disobeyed the medical man (who had, indeed, forgotten to order the milk to be drawn off) and she obtained immediate relief. I can also recall the case of a man who was in bed for many weeks with urethral fever and steadily getting worse. He was always saying he should never be well so long as he stayed in bed, and one day he took the law into his own hands, got up, and walked about the street, and from that time forward he never, as he said, "looked back." I do not cite these cases as affording precedents, but in order to warn the physician against turning an altogether deaf ear to a patient's instinctive promptings and to impress upon him the desirability of being prepared to consider how far they may be indicative, and as a consequence, safely indulged. As a set-off against the cases just quoted in which instinct proved a safer guide than the physician, I may mention the case of a child, a very poor hospital patient, who, when asked a few hours before his death if he fancied anything, promptly replied that he would like some "cheese and treacle"—presumably the supremest luxuries which his poverty-stricken home had afforded. Here the prompting was scarcely physiological, but he was beyond the stage at which the indulgence could harm him, and in obedience to the principle of euthanasia he was allowed to gratify his desire.

THE EXPERIENCE OF THE INDIVIDUAL AS A HEALTH GUIDE.

While instinct is, as we said just now, a most faulty guide to man under his present conditions, very valuable guidance may be derived from his individual experience as to what is good or bad for him. Individuals differ so much in their idiosyncrasies that it is only in respect of broad general principles that the physician can give stereotyped advice which shall be applicable to all. Hence he is often compelled to fall back upon the patient's experience, since in respect of many things each individual is a law to himself. Some are made rheumatic or gouty by meat, others can eat large quantities with impunity; some need to take much exercise to keep well, others can keep quite well while leading a sedentary life; and so on. It is especially in regard to food and drink that personal experience is helpful, and it behoves every man to find out for himself what things do and what things do not suit him. This truth is embodied in the saying that "a man is either a fool or his own physician at 40." Applying this test I fear we must conclude with the sage of Chelsea that an immense number of men are fools. In the first place, people often take an astonishingly long time to find out that a certain thing is injurious to them, and secondly, even when they do make the discovery they often do not choose to act upon it. Incredible as it may seem, I have known a man fail to realise till considerably past 40 years of age the fact that he always felt ill the day after he had dined out and eaten and drunk with less than his usual abstemiousness. It was only by casting his mind back and carefully thinking over the matter that the truth was borne in upon him that for every digression from his usual habit he had to pay the penalty of a day's purgatory. Such extreme cases are probably rare, but it is certainly very common for persons to fail to realise adequately a quite obvious causal connexion between ill-health and acts of "physiological unrighteousness." I recently spent a day with one of the most brilliant and sanest writers of our time, one therefore who cannot be accused of want of intelligence, and during the whole of the time he was smoking, save only at table. As fast as he finished one cigar he lit another from it, and he told me that he had smoked in this way since he was 16 years of age (he is now past 60) except for one or two short periods of abstinence. It was quite clear to me that he was suffering from chronic nicotine poisoning, and I have little doubt that his recent work has suffered on this account. Yet he has never realised that the habit has harmed him; indeed, he argues that it must have done him good, because on one occasion when he left it off for a time the work which he then did was much below his standard; and no doubt the sudden abstinence, after long habituation, did interfere with his mentation, though I utterly dissent from the conclusion which he deduced.

But while it is wise and right that the individual should seek to find out by experience what is good and what bad for him, it is by no means desirable that he should go to extremes and allow the pursuit of health to become the religion of his life. This is despicable, and it moreover brings with it its own Nemesis, for it leads to a morbid alertness for unfavourable symptoms and a constant dread of disease and death.

HISTORY OF THE HOUSING QUESTION IN LONDON.

PART I.

UNDER THE METROPOLITAN BOARD OF WORKS.

THE London County Council have just issued a book that will be of great value and use to all who are interested in the question of the housing of the poor. Considering the extensive nature of the subject, it gives in a comparatively compact form a summary history of what has been attempted and of what has been done. The committee of the County Council on the Housing of the Working Classes instructed Mr. C. J. Stewart, the clerk of the Council, to arrange for the production of such a record. Under his supervision the work has now been prepared by Mr. W. J. Russell and Mr. M. H. Cox, LL.B. Lond., and consists of a volume of some 400 pages, to which many maps of insanitary areas, model dwellings, &c., are added.[1] In regard to administrative action this history cannot, of necessity, date further back than 1855, when the Metropolitan Board of Works came into existence; but in regard to legislative action the record commences with the Shaftesbury Act of 1851 which was the first enactment dealing with the housing question. We are reminded how in April, 1851, the great Lord Shaftesbury, then Lord Ashley, called the attention of the House of Commons to the disgraceful condition of the houses inhabited by the poorer classes, and related that in one of the wealthiest parishes of London—St. George's, Hanover-square—there were 929 families which had but one room for each family, and 408 families had only two rooms. What, then, must have been the condition of less favoured localities? Lord Shaftesbury's able advocacy led to the passing of the so-called Adoptive Act, which is the first law on our statute book dealing with the question (14 & 15 Vict., c. 34). By this Act the local authority could borrow money on mortgage and itself lease or build houses for the working classes. As may be surmised by its nickname, this, the first Labouring Classes Lodging Houses Act, was not obligatory and could only be enforced when the local authorities by a special vote and with a two-thirds majority had declared their wish to apply its provisions. Considering what the vestries were in those days it is not surprising that at first nothing was done. On the other hand, the Common Lodging Houses Act of 1851, together with its amendments bearing the date of 1853, proved one of the most effective and beneficent laws ever enacted on this question. The carrying out of this law was not intrusted to

[1] The Housing Question in London. Printed for the London County Council; published by Messrs. P. S. King and Son, Great Smith-street, Westminster, S.W.

supine and corrupt vestries, but to the Metropolitan Commissioner of Police; consequently, of all the dwellings likely to become unhealthy and overcrowded, none have been so constantly inspected and so well controlled as those that come under the denomination of registered common lodging houses. This experience alone would suffice to show that some authority with wider powers, greater ability, and responsibility than was generally to be found in the vestries is needed if any real reform is to be effectively carried out.

No other great town in England or in Europe presented such a sorry spectacle as did London. Possessing no central local government of its own, no municipality, the metropolis was divided up into innumerable petty district bodies whose functions overlapped and clashed with each other and who were better able to hinder than to forward any great progressive measure. It was to mitigate the evils of this chaos that the Metropolitan Board of Works was brought into existence in 1855 by the Metropolis Management Act (18 & 19 Vict., c. 120). The Metropolitan Board of Works was elected in the second degree; that is, not by the ratepayers but by the ratepayers' representatives or vestrymen. It replaced the old Commission of Sewers, and it did not possess at first any powers to deal with the housing problem. The incompetence of the smaller local bodies had to be further demonstrated before the central body was authorised to intervene. Thus the Nuisances Removal Act of 1855 and the Sanitary Act of 1866 sanctioned the imposition of regulations fixing the number of persons allowed to occupy such houses as had been brought under these Acts and to provide for their registration, inspection, cleansing, and lime-washing, but it depended upon the energy of the vestries or district boards as to whether this law should be applied to any of their insanitary areas. Needless to say that as the law was not obligatory it was not very largely applied. The Labouring Classes' Dwelling Houses Act of 1866 and 1867 extended the time for the repayment of money borrowed for building purposes to 40 years. This was followed by Torrens's Act of 1868, establishing that "the responsibility of maintaining his houses in proper condition falls upon the owner, and that if he fails in his duty the law is justified in stepping in and in compelling him to perform it." Further, the local authorities were now called upon to appoint medical officers of health in their respective districts who should visit and report upon any unhealthy houses, and the local authority was empowered to force the owners of such houses to put them in order. When this was not done the local authority might even proceed to pull down a notoriously unhealthy house. In time this power was extended and by the Labourers' Dwellings Improvement Act of 1875 it was made to apply to "whole areas, where the houses are so structurally defective as to be incapable of repair, and so ill-placed with reference to each other as to require, to bring them up to a proper sanitary standard, nothing short of demolition and reconstruction."

As important perhaps as the Act itself, commonly known as Cross's Act, 1875, is the fact that its application was no longer intrusted to the vestries but to the Metropolitan Board of Works which had just been created. By this new law the medical officer of health, two local justices of the peace, or 12 ratepayers had the right to make representations to the Metropolitan Board of Works concerning any insanitary area in their district. The Metropolitan Board of Works had then to investigate the matter and if the facts stated were confirmed to draw up a scheme dealing with such area. Provision was to be made for supplying in the same district dwellings for at least as many persons as would be deprived of their homes by pulling down the condemned houses. Owners who were not satisfied with the scheme had the right to appeal to the Secretary of State for the Home Department and the latter was obliged to investigate their claims. This left the door open for much disputation and delay, and then when an area had been cleared the Board was not itself to rebuild but could only impose certain conditions on those who at their own risk and peril undertook to rebuild. Of course, the more these conditions were made suitable to the needs of the case speculators and investors became less and less inclined to undertake the work. Then for the compulsory purchase of the property, if an amicable arrangement could not be concluded, an arbitrator had to be appointed by the Secretary of State, and where the amount of compensation claimed exceeded £500 there was a right of appeal from the arbitrator to a jury.

Within the first four years of the passing of Cross's Act the Metropolitan Board of Works took action in regard to 11 schemes, and soon found that this law facilitated the obtaining of excessive compensation and all manner of delays and unnecessary expenditure. Under such circumstances schemes for re-housing the poor could not be made to pay. The Board entered a formal protest against giving as heavy a compensation for dilapidated, neglected, and insanitary property as if it had been property kept in perfect repair and order. It suggested that the cost that would have to be incurred if the houses were rendered habitable should be deducted from the amount of compensation to be paid. If, however, the houses were so bad that they could not possibly be rendered habitable, then the compensation should be only equal to the value of the land and the materials on the ground. The Board also sought to be relieved from the obligation of re-housing the same class of people in the same locality. Nobody would buy the sites under these conditions at a sufficiently high price and the Board had been obliged to sell the area cleared under the Whitechapel and Limehouse scheme of 1876 to the trustees of the Peabody Fund at a price calculated on a 20 years' purchase of a rent of only 3*d*. per square foot. Powers, also, the Board claimed, should be given to stop alterations while negotiations were proceeding, as such alterations were often undertaken only with the view of obtaining higher compensation. These representations made by the Metropolitan Board of Works led to the passing of the second Cross's Act in 1879, which, however, only improved the situation in matters of detail, for the main difficulties remained. Further representations were therefore made in 1880. It was also found that Torrens's Act had not effected the improvements anticipated. The repairs made by the owners were often considered sufficient by the justices to whom the owners appealed, though in reality such was not the case. In fact, the question arises whether in these technical matters the ordinary justices are competent judges. But the matter was complicated by a contest that soon arose between the vestries and the Metropolitan Board of Works, both parties seeking to throw upon the other the cost of the necessary reforms. The vestries wanted the Board to act under Cross's Act, and the Board wanted the vestries to proceed under Torrens's Act. It is true that the second Torrens's Act, which bears the date of 1879, gave the Board the power to do what the vestries had neglected to accomplish and place the cost on the rates paid to the vestry, but the Board shrank from the complicated litigation that such action would occasion. Thus this important clause of the Act has never been enforced. There was also another defect in Torrens's Act. A house, if pulled down, had to be rebuilt on precisely the same site, so that the want of open space in front or behind remained the same as before and in many parts of London the grievance was not only the condition of the houses but the fact of their being too closely crowded together.

The Metropolitan Board of Works never had the ambition or desire to build any artisans' dwellings. Whenever it was suggested that some particularly unwholesome site should be cleared their first care was to ascertain if any artisans' dwellings company would be willing to purchase the land and to build upon it. At first, it is true, they inserted clauses in the agreement that the land should be used in perpetuity for artisans' dwellings, but subsequently this was limited to a number of years and finally to only 10 years. So that there are now in London a certain number of artisans' dwellings, built more than 10 years ago, which can be converted into offices or warehouses or used for any other purpose.

Under all these circumstances the progress was so slow that Parliament appointed a Select Committee in 1881 to investigate why the various Acts dealing with the housing question had been so difficult to apply, and as a consequence of this inquiry we had the Artisans' Dwelling Act of 1882. This new enactment gave to the Secretary of State for the Home Department the right to dispense with the necessity of providing dwellings for more than half of the persons displaced by an improvement scheme; it raised to £1000 the amount of compensation entitling appeal to a jury; it provided that a grievance affecting not more than 10 houses could be dealt with under Torrens's Act, and that buildings which stopped ventilation could also be purchased. Finally, it was stipulated that improvements effected after representations had been made of insanitary conditions should not be allowed to raise the amount of compensation claimed. Now that the re-housing stipulations had been relaxed by the Act of 1882

the Metropolitan Board of Works took immediate action. Its plan was to clear a portion of a condemned area and not to deal with the remainder till the first portion had been rebuilt. This, however, did not solve the difficulty of maintaining the remaining portions of such areas in a habitable condition. Then the Board, in purchasing, had to pay the market value of the land, and in selling it obtained—for instance, in the Whitecross-street scheme in St. Luke's—3*d*. per square foot for what it had bought at 1*s*. 2*d*. per square foot. Altogether, from 1875 to 1889 the Metropolitan Board of Works spent on its re-housing schemes £1,983,892 and only recovered £377,114. Thus the loss or net cost amounted to £1 606.778. This looks very like a subsidy of more than £1,500,000 paid by the ratepayers to the 5 per cent. philanthropists who benevolently consented to buy land which was worth 1*s*. 2*d*. per square foot at 3*d*. per square foot, so as to provide better dwellings, not for the extreme poor but for that more prosperous and steady class of artisans which was not, in those days at least, in such urgent need of help. Then, after all, the accommodation afforded was insufficient; for 29,151 persons were displaced—that is, forced to leave their insanitary houses, and the model dwellings built instead only accommodated 27,780 persons. Apart from these figures the Board, it is stated, left to its successor, the London County Council, a legacy of some 4000 persons for whom homes should be provided, but this was reduced to 2457 by the Secretary of State.

It is not surprising if, in the face of this disastrous aspect of the problem, it was found necessary to make further investigations and efforts. Hence the Royal Commission which, at the proposal of the Marquis of Salisbury, was appointed in 1884 with H.R.H. the Prince of Wales as chairman. Of course, this commission had to report that the law should be more strictly applied—that in spite of the improvements effected the overcrowding was becoming more serious every year. There were Torrens's Acts, which compelled the owner to keep his property in proper order, and there were Cross's Acts, which when this could not be done sanctioned wholesale expropriation, purchase, and reconstruction on insanitary areas. Then the report described at length the prevailing insanitary conditions, the insufficient water-supply, and the terrible overcrowding, and asserted that the overcrowding was mainly caused by abnormally high rents, arising from the competition among tenants to secure tenements. This was due to the necessity of living near the places where work was to be obtained and to the demolition of houses formerly inhabited by the poor, so as to carry out public improvements, build railway lines and stations, &c. The commissioners recommended that the vestries should increase their staffs by appointing a greater number of better qualified sanitary inspectors, so that lodging-houses might be more strictly controlled and cellar dwellings be abolished. The failure, the commissioners thought, was in administration rather than in legislation, but still they suggested various amendments to the existing laws. Greater facilities for borrowing money, they urged, should be given, and prisons should be removed to outlying districts and their sites used for artisans' dwellings. The compulsory purchase of land should be rendered more easy and less expensive. The railway companies were to be urged to organise workmen's trains and were to be compelled to provide for the re-housing of such of the poorer class of tenants as were disturbed by the building of railway lines and stations.

This report of the Royal Commission led up to the adoption of the Housing of the Working Classes Act of 1885. This Act gave power for the sale to the Board of the site of several prisons. In other respects it introduced no new principle and aimed only at facilitating the application of existing laws; for instance, it rendered the appeal of the owner of condemned property from the arbitrator to a jury somewhat more difficult, it extended the meaning of the words "lodging-houses" to separate houses or cottages for the labouring classes whether containing one or several tenements, and it somewhat facilitated the process of expropriation and purchase. This was the last Act passed to facilitate the endeavours of the Metropolitan Board of Works. The next law was the Local Government Act of 1888, which brought the County Council of London into existence. To sum up the history of the question of the housing of the working classes up to the time when the Metropolitan Board of Works ceased to exist it might be described by the sceptic as an effort to make an omelette without breaking eggs. As a matter of fact, of course, for what omelettes were made eggs had to be broken. The question arises whether the right person was made to pay for the eggs. Under the Metropolitan Board of Works the cost mainly fell on the ratepayers, and it may well be objected that the burden might be more justly imposed on those who were responsible for the degradation of the property condemned.

THE PREVALENCE OF MOSQUITOES AND MALARIA IN THE COLONY OF HONG-KONG.

THE following preliminary report by Dr. J. C. Thomson of the Medical Department of the Hong-Kong Civil Service has been issued in the form of a letter to Dr. J. Bell, acting principal civil medical officer in Hong-Kong, regarding a research into the relation of mosquitoes and malaria in Hong-Kong and the New Territory. After a few preliminary remarks Dr. Thomson says:—

There are two distinct species of anopheles abundant in the colony, differing in size, general appearance, and the markings on the wings. The smaller, which I believe to be anopheles costalis, is prevalent all over the colony and in the ravines to the south of Magazine Gap; the larger, anopheles sinensis, is the more common throughout the New Territory, on the islands, and at Stanley and Pokfulam. While the area of general prevalence is thus different it is not exclusively so, as I have myself caught anopheles sinensis in the centre of the city in a hotel not far from the clock tower, while anopheles costalis has been included in some of the consignments from the mainland.

I have differentiated at least eight distinct species of culex, but I prefer not to commit myself to the naming of them until my classification has been confirmed or amended by an expert entomologist. To secure this I have sent to the London School of Tropical Medicine 54 mounted specimens, consisting of 14 different species of mosquitoes, two species being anopheles, eight species at least being culex, and the remaining four species probably belonging to other genera of the mosquito family, though one or two of them may prove to be species of culex. All the above have unspotted wings, excepting the anopheles and a single species of culex, of which I have obtained only a single specimen. This I believe to be culex mimeticus, and it is manifestly very rare. A good general rule, therefore, in Hong-Kong, in addition to the differences of the head appendages and the characteristic attitude when at rest that distinguish anopheles from culex, is that a mosquito with spotted wings is probably one of the dangerous anopheles, and one whose wings are unspotted is a culex. I have privately submitted a few of the more prevalent types of both genera for His Excellency the Governor's inspection.

[Dr. Thomson then goes on to refer to the breeding-grounds of anopheles. This insect chiefly affects the natural water-courses, and the favourite locations of the larvæ are the little breaks in the rocky surface by the side of the stream where there is just enough current to prevent stagnation. As far as the city of Victoria is concerned the question of dealing with anopheles pools reduces itself to the "training" of the nullahs—namely, clearing away undergrowth and levelling the bed so that there is a smooth waterway down which the water can rush rapidly. Dr. Thomson continues:]

Concurrently with my inquiry into the prevalence of anopheles I have been investigating the prevalence of the malaria parasite in the colony. Its connexion with anopheles is now an accepted fact. The general mosquito-malaria theory has been proved to the hilt and has recently been brilliantly demonstrated to the public by Manson's double experiment, but the connexion of malaria with disturbance of soil, an important point in Hong-Kong, is by no means clear as yet. Grassi disposes of the subject by stating that it depends on the creation during digging operations of puddles of water in which anopheles breeds. This certainly does not hold for Hong-Kong. The whole of the broken earth surface may show no single puddle the sun drying the superficial layers as they are turned up, and yet it is a fact of experience that in certain parts of the colony earth cutting is invariably attended by an outbreak of fever. On the other hand, there is undoubtedly some

connexion with the presence of moisture in the soil. In certain localities—e.g., around MacDonell-road, where earth-cutting may go on to an unlimited extent with impunity—I find that the soil is comparatively dry, while in others—e.g., the West Point already referred to, where the slightest excavation inevitably produces fever in the neighbourhood—I find that the soil is more or less water-logged. I propose to give attention to this question, which is one very seriously affecting this colony.

There are three main types of malarial fever, associated with different and corresponding parasitic organisms, and all the three types of the parasite I have found prevalent in Hong-Kong—the benign tertian parasite, easily yielding to the action of quinine; the quartan parasite, readily brought under control by the same drug but difficult to eradicate; and the malignant parasite, variously described as æstivo-autumnal by Italian observers, tropical by Koch, pernicious, &c., less amenable to quinine, more severe in the resulting symptoms, and more apt to produce a fatal result or prolonged ill-health.

Of 50 cases in which, up to Oct. 31st, parasites were found and their form and type recorded three came from Kennedy Town, 18 from the west part of the city, 13 from the central parts of the city, six from the east part of the city, two from Happy Valley, and eight from outlying villages.

The most common type of the parasite in the cases which I have examined has been the malignant parasite, with abundant crescentic forms; but I do not consider that this gives the true proportion of the prevalence of the different parasites in the colony, since probably only the more serious cases of fever find their way into the hospital wards.

There has recently been a small epidemic of fever in the neighbourhood of the naval hospital and Morrison Hill-road. My first opportunity of personal observation in reference to it occurred on Oct. 27th, when I was requested to see the family of an European Government officer whose four children had all suddenly become ill with high fever. I took a microscope to the house and found the benign tertian parasite in the fresh blood of three out of the four cases. All readily yielded to quinine, and by Nov. 1st they were back at school. I requested the father of the patients to catch for me some of the mosquitoes frequenting the house, and the first he submitted was a specimen of anopheles costalis.

While pursuing this investigation into the prevalence of mosquitoes in the colony and its dependencies, chiefly with reference to the question of the presence of anopheles and the means to be adopted for its extermination, my attention has been directed most forcibly to the enormous prevalence of mosquitoes of the genus culex. As has been mentioned, I have differentiated at least eight species of this genus. The culex mosquito does not, so far as is yet ascertained, act as a host to the malaria parasite; but it, as well as anopheles, is certainly the intermediate host of the minute parasitic blood-worm, the filaria nocturna or filaria sanguinis hominis, whose adult form lies in the lymph vessels and is the cause of the great group of elephantoid diseases. Elephantiasis is quite common among the Chinese in this region, though, for some reason not yet sufficiently explained, Europeans are as a rule exempt from it, an exemption, however, by no means complete; but most Europeans are affected by the immediate disagreeable effects of the bite of the mosquito, and few are aware that the daily supply of these vicious little insects is being produced in their own houses.

I think public attention should be drawn to this fact. I would like to write it in large capitals that I have found the larvæ of culex in process of development in abundance in or about every house without an exception in which I have looked for them. A few instances will illustrate the great variety, and also the common general character, of their breeding-places: at the Alice Memorial Hospital I found them in an old teapot on the roof-balcony; at the Tung Wah Hospital, in the ornamental flower-stands; at the gaol, in an empty pot in the coal store; at Kennedy Town Hospital, in the fire-buckets; behind a house at the Peak, in a disused hand-basin; in another house at the Peak, in a dish placed to catch the water-drippings from the ice-chest, &c. In all these cases they were in abundance and were daily giving off large numbers of full-grown mosquitoes for the supply of their respective localities.

The crusade against the mosquito should include the culex as well as the anopheles. Anopheles must be dealt with by the Government chiefly, though owners of property may probably find it to their advantage to move privately in this matter as well; but culex can be exterminated, or at least greatly diminished in numbers, by individual action alone. It may be impracticable to secure individual action of a sufficiently widespread character to make much impression on the sum total of the culex mosquitoes in South China, but every householder in Hong-Kong has it in his power, by due attention to his verandahs, back-yard, and coolie quarters, to secure that in his own house at least there shall be fewer mosquitoes in the future than there have been in the past. Many are aware that what they have often seen in such receptacles as I have described are the larvæ of mosquitoes; but few realise that these same wriggling creatures will a few days later rise from the surface of the water as adult insects and will probably find their first meal of blood within the house that harboured them in the larval stage.

Since the foregoing was written a fact of very great practical importance has been brought to my notice by Mr. W. J. Tutcher. The anopheles occasionally departs from its usual habits and may breed in artificial collections of water. With Mr. Tutcher I examined one of the Chinese flower nurseries at West Point, that to the east of the house called "Nullah Side," from its location, and found in many flower-pots containing water the larvæ of anopheles and culex side by side. This observation does not affect the practical deductions I have already drawn regarding the usual breeding-grounds of the anopheles; but though I think it will be found that what I have above noted only occurs in the immediate vicinity of anopheles-containing ravines, it greatly intensifies what I have said as to the desirability of everyone doing his best to prevent vessels containing water from standing about yards or verandahs without being frequently completely emptied.

With reference to these Chinese gardens at West Point I would recommend that the Sanitary Board should be requested to cause an officer to periodically inspect them, and treat as a nuisance any vessel containing visible larvæ. Before making this recommendation I have received the assurance of Mr. Tutcher that the vessels containing the larvæ were not in a stagnant condition for any reason connected with the flower-producing industry, and could equally well be kept fresh; and in a neighbouring garden which I visited this morning in pursuance of my inquiries I found as many vessels containing water but hardly any containing larvæ. The owner of the garden told me that he frequently empties all dishes on account of what he called the water-mosquitoes. It would therefore be no hardship to insist on these nurserymen keeping their gardens in a condition better calculated to promote the public health.

In conclusion, I ask permission to quote a passage bearing on what I so urgently insist upon from a speech delivered so recently as Oct. 3rd at the London School of Tropical Medicine by Sir William MacGregor, K.C.M.G., C.B., M.D., &c. He says:—

"We have also to face the immense fecundity of the mosquito. Ficalbi says one mother mosquito may in the fifth generation be the progenitor of 20 milliards. Howard shows that one rain barrel may contain 19,110 larvæ, and that they may produce at least 12 generations in one summer. This at 70 eggs a mosquito would produce in a summer a number of mosquitoes expressed by 25 figures."

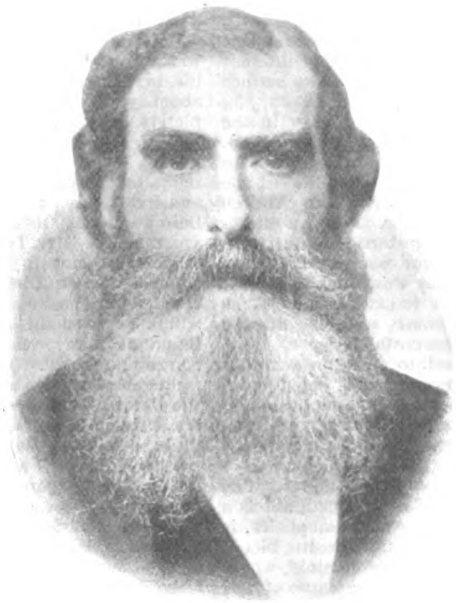
THE ROYAL INFIRMARY, PRESTON. — As a memorial of his son, Mr. Herbert Davies, M.B., Victoria University, who died in South Africa, Alderman Davies of Lancaster has announced his intention of giving £2000 to this infirmary.

PROPOSED PUBLIC HEALTH LABORATORY FOR DEVON AND CORNWALL.—The Sanitary Committee of the Plymouth Town Council has appointed a "Public Health Laboratory Sub-committee" on the advice of the chairman, Mr. W. Paul Swain, F.R.C.S. Eng., and the medical officer of health, Mr. F. M. Williams, "to promote the provision of pathological facilities for the examination of infectious disease in the poorer classes and to obtain the coöperation of the county councils of Devon and Cornwall." As the "sanitary conscience" of the West of England is not yet awake to the need of a county sanitary staff (medical officer of health, bacteriologist, &c.) to apply concerted and expert action to the prevention of disease, the scheme for a laboratory is warmly to be commended. It expresses the opinion of Plymouth, which, with its large population, is the most weighty in the two counties.

Obituary.

JOHN BAPTISTE POTTER, M.D. EDIN., F.R.C.P. LOND., M.R.C.S. ENG.

WE announced last week the death of Dr. J. B. Potter, obstetric physician to the Westminster Hospital, and are certain that a large circle of friends and contemporaries heard the news with deep regret and probably with some surprise. Born in 1839 Dr. Potter was barely 61 years old, an age at which many medical men and most consultants are in full work. But for five years at least his health had been failing, and latterly the declining process had gone on more rapidly. He had the objection, occasionally seen in medical men, to take advice—he would not put himself into the position of a patient. Shortly before his death several professional friends and colleagues, especially Dr. Allchin and Mr. Macnamara, did all that medicine or surgery could do to mitigate suffering and to preserve life, but their care proved unavailing, for Dr. Potter's exact condition only became known to them when nothing could be done. They were well seconded in their efforts by the nurses of the Westminster Hospital, which had been the chief field of his labours for 20 years, and where he died almost literally in harness.



JOHN BAPTISTE POTTER, M.D. EDIN., F.R.C.P. LOND.,
OBSTETRIC PHYSICIAN TO THE WESTMINSTER HOSPITAL.

Dr. Potter was born in London and was the son of Cipriani Potter, musical composer, and for many years principal of the Royal Academy of Music. He was educated at the Kensington Grammar School; his proclivities were mathematical, though he inherited enough musical faculty from his father to play fairly well and to enjoy good music whenever he could get it. He began his medical life with apprenticeship to Dr. Sloman of Farnham. He attributed many useful lessons, especially familiarity with drugs and their uses, to this experience and he was a great advocate of medical pupilage in some form. He entered University College Hospital in 1858 and became Member of the Royal College of Surgeons in 1862. Thereafter he proceeded to Edinburgh, where he graduated in 1863. Between this time and 1870, when his connexion with Westminster Hospital began, he was occupied in various ways. He held certain resident appointments in a Birmingham hospital, travelled with a patient for six months in Ireland, held some subordinate appointment in the Hospital for Children, Great Ormond-street, and in the year 1866 did temporary sanitary work in connexion with the outbreak of cholera in that year. In the year 1870 Dr. Potter was appointed assistant obstetric physician to the Westminster Hospital under the late Dr. Frederick Bird, who died in 1874, when he became full obstetric physician, as he continued to be to the time of his death. He was also lecturer on midwifery and diseases of women in the Westminster Hospital Medical School. He was an obstetrician rather than a gynæcologist and had a good consulting practice. Those who have had the benefit of consultation with him in the emergencies and difficulties of midwifery will remember with pleasure his clear head and his ready help.

Dr. Potter will be greatly missed in the medical societies, and especially in the Obstetrical Society of London, where he filled every office in a way to excite the respect of his colleagues and promote the prosperity of the society. He was on the council from 1872 to 1876 and again from 1890 to 1892, librarian from 1877 to 1878, vice-president from 1879 to 1881, and treasurer from 1882 to 1884 and again from 1893 to 1897. He was on the board of examiners for midwives from 1883 to 1884. He was president of the society in 1885 and 1886, and at the time of his death he was a trustee. In his inaugural address as president he laid stress on the importance of good general training for obstetric physicians and uttered a warning, not altogether unneeded, against excessive specialism. Such a history is sufficient to show the esteem in which he was held by his colleagues. Though he seldom obtruded his views on the society, whose Transactions contain but few communications from him, his administrative services were greatly appreciated. On the committee of the Society for the Widows and Orphans of Medical Men he was one of the most active and useful members and was at the time of his death both trustee and treasurer. Though a London man, nurtured at University College, he graduated at the University of Edinburgh and his services to the Edinburgh University Club, of which at the time of his death he was co-trustee with Sir Dyce Duckworth, will not be forgotten by his co-graduates. He was one of the earliest members and no dinner of the club seemed complete without his presence. Though for his position he was one of the silent members of the profession, it will be seen how many offices he filled and with what confidence and esteem he was regarded by his colleagues. We have before us a few words on his character from one who practised in the same walk of the medical profession as himself and whose praise would be regarded as of the highest value. In this estimate of Dr. Potter occur the following words: "He was an excellent fellow, high-toned and straight as a die and incapable of doing a wrong thing." And this is the opinion which Dr. Potter had earned for himself throughout the profession.

Since the year 1868 he had acted as physician to the Royal Society of Musicians. In religion, whilst liberal towards those who differed from him, he was a decided Churchman of the Broad Church school. For many years he was churchwarden to the late Rev. Harry Jones, with whom he was on terms of intimate friendship. Dr. Potter was fond of books, especially of topographical works, and was a great student of Old London. For another part of England he displayed quite a peculiar affection—namely, the West; but his favourite place was Lyme Regis, to which he resorted for his annual holiday for something like 26 years with only one exception.

Dr. Potter married in 1872 Celina, second daughter of Mr. Alfred Blyth of Westbourne-terrace, by whom he had three children—one son, Mr. John Wagner Potter, of the staff of the office of the Crown Agents for the Colonies, and two daughters.

PROFESSOR POTAIN.

THE medical profession of France has been of late sorely tried by the deaths of some of its most prominent members. Foremost among them stands the venerated name of Potain. The aged professor died quite suddenly on Jan. 5th at the age of 75 years. Scarcely six months ago he delivered his last lecture at the Charity Hospital amid an exhibition of enthusiasm and affection which has rarely been equalled and of which a touching description was given by our Paris

correspondent.[1] There, in the presence of the leaders of the French medical profession such as Bouchard, Dieulafoy, Guyon, Déjerine, Marey, Tessier, and many others, surrounded by present and former pupils, and supported by colleagues and friends, the venerable professor spoke for the last time in an official capacity. Very dramatic was the end. 11 o'clock struck, the master stopped and said simply: "Gentlemen, I have given my last lecture; I wish to say a word or two in memory of Corvisart who, 100 years ago, in this very theatre created the first course of clinical medicine in France. I wish to thank my colleagues, my pupils, my friends——." Here he broke off with his eyes full of tears. Those who knew him well feared that the profound change in his way of life which followed his retirement, owing to his having to give up his course of lectures and his daily visit to the hospital, a visit which he never failed for 30 years to make at eight o'clock in the morning, would have a disastrous effect upon the remainder of his life; and such was the case. He became melancholy and oppressed although his bodily health remained good. On Jan. 4th he complained of feeling tired, but paid a visit to Dr. Napias, the head of the Assistance Publique, who was suffering from influenza. He passed a quiet evening in company with Dr. Tessier, his old *chef de clinique*, and went to bed about 11 o'clock. At 2 A.M. on Saturday, Jan. 5th, his servant went into his room to make up the fire and found him dead and cold.

Outside his scientific attainments Professor Potain will be remembered as a typical example of a good and kindly man, one of a fashion now almost passed away, the *vir bonus, medendi peritus*, and as one who took the highest place in his class. A bachelor, with no relatives but one sister, he was, indeed, a father to his pupils. He "sustained" his thesis in 1853, the subject being the Abnormal Bruits which follow Hæmorrhage. Shortly afterwards he became *chef de clinique* to Bouillaud and was successively nominated as physician to the hospitals in 1859 and *professeur agrégé* at the Paris Faculty of Medicine. In 1860 he became physician to the Menages Infirmary, in 1865 physician to the St. Antoine Hospital, and in 1866 to the Necker Hospital. On March 20th, 1875, he was nominated professor of pathology at the Faculty of Medicine and shortly afterwards professor of clinical medicine. In fulfilment of the duties of the last post he lectured in the theatre of the Charity Hospital where Corvisart and Bouillaud had lectured before him, and on the day of his retirement his pupils presented him with the chair from which his two illustrious predecessors and himself had for so long held forth. He was a Member of the Academy of Medicine, a Member of the Academy of Sciences, and Commander of the Legion of Honour. He wrote much, and among his works may be mentioned his lectures on Clinical Medicine and his treatises on Diseases of the Heart, a work of world-wide renown. His funeral, which took place on Jan. 8th, was attended by an enormous crowd, but in accordance with his specially expressed wishes no funeral oration was pronounced over his remains.

JAMES HOUGH, F.R.C.S. ENG., J.P.

WE regret to announce the death of Mr. James Hough, of Grange-road, Cambridge, a venerable practitioner who had been resident in the town for nearly 60 years and occupied a very prominent position amongst its public men. His last illness was of short duration. About six weeks ago he attended the annual meeting of the Cambridge Female Refuge, of which he was the treasurer. Shortly afterwards he suffered from a carbuncle; symptoms of alarming prostration set in, and he passed away quietly on the morning of Dec. 28th, 1900.

Mr. Hough was born on Jan. 19th, 1818, at Palamcottah in India, where his father, the Rev. James Hough, was military chaplain. His mother was Elizabeth Pattinson, third daughter of Thomas and Mary Pattinson, of Kirklinton, Cumberland, and it was to their care that Mrs. Hough entrusted her boy when his parents returned to India after visiting England in 1823. Mr. Hough spent his younger days at Kirklinton and Houghton. His school days were passed at Christ's Hospital; he then studied medicine at Guy's and St. Thomas's Hospitals, and was admitted a member of the Royal College of Surgeons of England in 1841, at the age of 23 years. He became a Licentiate of the Society of Apothecaries in the same year and a Fellow of the Royal College of Surgeons of England in 1876. He commenced his long and appreciated connexion with Cambridge immediately upon becoming qualified, going there as assistant to Dr. Fawcett, with whom he shortly afterwards entered into partnership. This link continued until 1882, when Dr. Fawcett retired. Mr. Hough then took his eldest son, Mr. James Hayward Hough, into partnership and the practice was carried on by father and son until 1893, when the latter died. This bereavement was a great blow to Mr. Hough, and left its effects upon him. In January, 1894, Dr. E. Lloyd Jones joined the firm and remained in partnership with Mr. Hough until 1896 when Mr. Hough retired at the age of 80 years. To the men of the younger generation the deceased was a practitioner of the old school, an all-round man of a kind which the old methods of training were wont to beget. He was well known during the best years of his life as *the* accoucheur at Cambridge. For his practical skill he was no less distinguished than for a tender heartedness which was quite unique. More than half a century of active practice seemed to have lessened in no degree the warm-hearted sympathy with the sick which was one of his greatest characteristics. His emotion was ofttimes but ill-concealed when he saw others suffering. His energy was phenomenal until the very last; to render assistance to the sick, rich or poor, to work for many philanthropic societies or for his political party—these were the ways in which his long and useful life was spent

Mr. Hough had a very active public life. A strong and consistent Conservative, he was long the respected leader of his party at Cambridge. In 1886 occasion was sought to testify to the appreciation of these services felt by his Conservative friends, and on April 18th, at a large and enthusiastic meeting, he was presented with a "buggy," or hooded trap, which became as familiar in the streets of Cambridge as was his own figure. The presentation was made by the Rev. George Forrest Browne, now the Bishop of Bristol, in a most felicitous speech. Mr. Hough occupied the position of chairman of the consultative council and leader of the Conservative party in Cambridge from 1884 to 1899 during which time four contested elections were fought, the result being an "unbroken record" of success for Sir Robert Penrose FitzGerald, the Conservative champion. In October, 1899, he was presented with an illuminated copy of a resolution expressing the indebtedness of the party to him for his services.

Mr. Hough also found time for a considerable amount of Church work, for which his family associations gave him a special aptitude. His father, as has already been mentioned, was a clergyman of the Church of England, and one of his ancestors had been a bishop. Mr. James Hough was churchwarden of St. Benedict's Church from 1848 to 1893. During that period he successfully resisted an attempt to close the church and amalgamate the parish with another, and eventually had the satisfaction of seeing the ancient building beautifully restored. "The Architectural History of the University of Cambridge and of the Colleges of Cambridge and Eton" and a purse of £40 were presented to him by the parishioners and congregation upon his retirement. Mr. Hough had also assisted in the missionary and social work of the Church. He had been treasurer of the local auxiliary of the Church Missionary Society since 1858, and of the Cambridge Female Refuge, and held a like position in connexion with the Cambridge Book Hawking Society from 1857 until it was given up in 1890. He was president of the Cambridge branch of the Church of England Young Men's Society and of the Cottage Orphan Home for Little Girls, and was also warmly interested in the Church Defence Society and the Society for the Propagation of the Gospel. He was moreover chairman of the *Cambridge Express* Newspaper Company from its formation.

Mr. Hough married on July 8th, 1846, Eliza Sophia, daughter of Mr. W. W. Hayward of Cambridge, who died in June, 1893. His family consisted of four sons and four daughters, of whom three sons and two daughters are living. Mr. George Frederick Hough is vicar of Holy Trinity, Worcester, Mr. Charles Henry Hough is a surgeon at Derby, and Mr. William Woodcock Hough is in holy orders and was officiating as the missioner of the Corpus Christi College Mission in London until he resigned through ill-health. Mr. Hough's funeral took place at Mill-road Cemetery, Cambridge, on Jan. 2nd, 1901, and was a

[1] THE LANCET, July 14th, 1900, p. 138.

touching farewell to one whose whole life had been unselfishly devoted to the promotion of good works. The large attendance marked the respect in which the deceased was held, and the difference of classes and opinions represented pointed to the variety of the work in which he had been engaged.

SIR WILLIAM HICKS FARRINGTON, BART., M.D. ST. AND., M R.C.S. ENG., L.S.A.

SIR WILLIAM HICKS FARRINGTON, who was the fifth baronet of his line, was the elder surviving son of the fourth baronet, Sir Henry Anthony Farrington, who died in 1888. Sir William Farrington, who was born in 1838, was educated at the King's School, Ottery St. Mary, and at St. Bartholomew's Hospital, where he held the offices of house surgeon and resident accoucheur. He became a Member of the Royal College of Surgeons of England in 1859 and a Licentiate of the Society of Apothecaries in 1860. Besides his hospital appointments he held those of resident medical officer to the London Fever Hospital and of assistant surgeon to H.M. Convict Prison at Gibraltar. He was afterwards in practice at Penshurst, Kent. He is succeeded in the title by his son Henry Anthony Farrington, who was born in 1871.

CHARLES HARWOOD, M.D., L.R.C.S. EDIN.

DR. CHARLES HARWOOD of Hemington, Leicestershire, died very suddenly on Jan. 3rd while engaged on professional business at some distance from his home. On Jan. 2nd he was apparently in good health and spirits, and on Jan. 3rd he drove to Melbourne, a small town in the adjoining county of Derby, where he was seized with illness while in the house of a member of the board of guardians and expired almost immediately. Dr. Harwood was the son of a medical practitioner in Derby and received his professional education in Edinburgh, where he took the degree of M.D. and the diploma of L.R.C.S. in 1850. At the time of his death he held the appointments of medical officer of health of the Shardlow, Stapleford, and Castle Donington rural district councils; he had also formerly been medical officer of health of the borough of Derby, surgeon to the Derby Dispensary, and surgeon-major to the Derbyshire Regiment. Dr. Harwood was well known and much respected in the Castle Donington district, where he had practised for many years. He has left a widow and family for whom much sympathy is felt.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Horace Tracy Hanks, Professor of Gynæcology in the Post-Graduate Medical School, New York.—Dr. R. J. Curtiss, formerly Professor of Bacteriology in the College of Physicians and Surgeons, Chicago.—Dr. Berne, Honorary Professor in the Medical Faculty of the University of Lyons.

THE WAR IN SOUTH AFRICA.

THE X RAYS IN SOUTH AFRICA.

BY JOHN HALL-EDWARDS, L.R.C.P. EDIN.
SURGEON RADIOGRAPHER TO THE GENERAL HOSPITAL, BIRMINGHAM, AND TO THE IMPERIAL YEOMANRY HOSPITAL, DEELFONTEIN, SOUTH AFRICA.

SOME time before leaving England and long before I had any idea that my services would be required in South Africa I advocated, through the medium of the medical press, a more extended application of the x rays to military surgery. Nine months' experience here has proved that they are much more useful than I even ventured to predict and that in their usefulness they stand only second in importance to aseptic surgery. As my suggestions and predictions then were based purely upon work carried on in civil practice, with but a very superficial knowledge of the actualities of war, I am doubly pleased to record that my hopes have been more than realised and that excellent surgery has been the outcome of the work done here.

Before being appointed on the staff of the Imperial Yeomanry Hospital I made repeated applications to the War Office, always with the same result—viz., a sheet of blue paper informing me that there was no call for x-ray experts in South Africa. On one occasion I had a personal interview with an official at the War Office who told me that for several reasons they could not send me out. In the first place, there was very little useful work to be done; in the second place, that there were already out many men capable of undertaking the work; and lastly, that they could not afford to send me out, however much they might wish to do so. At the same time, I was shown a cablegram from South Africa demanding the immediate presence of eight men with a sufficient knowledge of electricity and photography to enable them to help the experts (?) already sent out and to repair broken-down apparatus—or, in other words, to do the work for which someone else would get the credit. How the arrangement has worked I am not entirely in a position to say, but from what I have heard the results which were produced have not fulfilled the anticipations and expectations of some of the surgeons, and judging from the several cases sent to us where others have failed to find bullets (after the application of the x rays) I should imagine that the experiment has not altogether proved a success. An eminent consulting surgeon who visited our hospital amused me by asking if localisation in my hands had proved a success and I learned from him that in some of the base hospitals the surgeons had been greatly misled by it. On my informing him that a properly carried-out localisation was absolutely accurate and certain he expressed great surprise, proving that he had received some information to the contrary. Granting that the procedure of localisation has been properly carried out, if there is any mistake it is due to want of knowledge on the part of the x-ray operator, who must, if his deductions are to be of any value, have had considerable experience, combined with a knowledge of anatomy and surgery. The assistants sent out by the War Office have in most instances become masters, either from force of circumstances or from a lack of interest on the part of those whom they were sent to assist. I may mention that the experts (?) themselves had in many instances but a few days' training prior to their proceeding to the seat of war. And the work done by their (so-called) assistants may be, and in all probability is, good, but inasmuch as they can have had but a very limited experience, and as in most cases they have no knowledge of anatomy or surgery, the operative surgeons cannot accept any suggestion from them, hence failure results. As an example of the way in which an excellent radiograph and localisation may be misleading I would like to quote the following case which was brought to my notice at a large hospital at Pretoria. A patient having a bullet in his thigh was radiographed and its position was marked on the limb. The surgeon cut down upon the spot indicated but failed to find it; after a prolonged search it was eventually found two inches higher up the limb. It was subsequently found that the spot indicated upon the skin of the patient had been arrived at from measurements made upon the negative. As in every negative there is a small amount of distortion, and in some a very considerable amount, measurements made in this manner are always unreliable and grave consequences are almost certain to follow such an unscientific proceeding.

Notwithstanding the fact that the penetrative power of modern small-bore projectiles is such that at all ranges up to 1500 yards under ordinary circumstances they pass through the tissues without doing any considerable amount of harm, there is in a large war such as we are at present engaged in plenty of work for the surgeon radiographer. Out of the 200 cases which up to the present have come under my notice over 60 bullets or portions of bullets or shells have been found and accurately located. In 54 of these cases the foreign bodies have been removed and in no case has the surgeon failed to find what he looked for. In the remaining cases no operation has been performed, it being thought best—for a variety of reasons it is not necessary for me to mention here—at any rate for the present to leave them undisturbed. Of the remaining 140 cases most of them were examined for the purpose of ascertaining the amount of injury sustained by bone after the passage of a bullet through it, and in a few no foreign body was found, although its presence was suspected.

These figures plainly show that at any rate one of the assertions made by the authorities at home has no foundation in fact and that they formed erroneous opinions, founded on inexperience, as to the numerous accidents which tend to diminish the penetrative power of modern projectiles.

Whilst the capability of the x rays of discovering and accurately locating bullets was not for one moment questioned, the number of bullets which experience has shown are for one reason or another retained in the tissues was vastly under-estimated. At any range up to 1000 yards a Mauser or Lee-Metford bullet will pass through the densest bony structures of the human body, granting that a full charge of cordite has been used, that the bullet has been unimpeded in its flight, and that the cupro-nickel casing is complete. It occasionally happens, however, that a full charge of cordite has for some reason or another not been used. It is still more common for a bullet to strike some hard substance before finding its final billet, and I have good reasons for suspecting that most of those which I have localised come under this category. A ricochet bullet is by far the most dangerous to meet, and the Boers are so far aware of this fact that they prefer to fire low, at the ground, in front of our troops. A ricochet bullet is especially dangerous for three reasons. In the first place, even if it falls upon soft ground and is not deformed, its penetrative power is so greatly diminished that it is likely to be retained in the tissues if it finds a billet; secondly, if it strikes a hard substance it is so altered in shape that serious tearings of the tissues and splintering of bones are certain to accrue; and thirdly, without being greatly altered in shape it may have imparted to it an amount of spin which produces serious results. A spinning bullet is one of the most dangerous of missiles and the amount of damage it is capable of inflicting depends to a very great extent upon the rate of spin; this may be so slow that the entrance wound may present all the characteristics of an ordinary entrance wound, or it may be so fast as to produce a large irregular wound, such as one would expect to have been caused by a piece of shell. Considerable difference of opinion exists as to the possibility of an uninjured Lee-Metford or Mauser bullet being flattened against bone when fired directly into the tissues. From my experience I am of opinion that under such conditions no flattening of the bullet is possible, and that in all cases where a whole bullet is found to be deformed it has struck some substance harder than bone before entering the body.

Quite apart from the finding and localising of bullets, most excellent and useful work is to be done in radiographing all bullet and shell injuries to bone, and many useful observations will be made by the careful examination of the resulting pictures. Our knowledge of the amount and character of injury which under varying circumstances can be done by a bullet, is so small and incomplete that many new facts should come to light as the result of the work done during the present war, and had the x-ray work been as carefully carried out as its importance warrants one of the greatest advances ever made in military surgery would have been placed to our credit. That the x rays have not been given a fair chance I am in a position to prove. Some hospitals have been supplied with excellent apparatus but no one to work it, whilst in others there is no apparatus, and in a few, whilst having the apparatus, it is placed in such incompetent hands as to prove rather a source of danger than one of the most useful adjuncts. Many patients have been sent home with bullets still in their tissues which should have been removed, whilst others have suffered weeks of pain which should have been relieved in a few hours.

If the x rays are to prove of full use in future wars one of the first steps to be taken by our War Office must be the organisation of a complete x ray department, where the methods of procedure will be properly taught, experiments made, and apparatus designed and manufactured, with a full knowledge of the requirements of military surgery under all conditions and circumstances. The apparatus placed at my disposal is as complete and efficient as could be purchased. Nevertheless, it is by no means perfect, and had I been placed in less fortunate circumstances I should several times have been landed in difficulties. Experience has convinced me that much time and thought will have to be expended before our apparatus can even be said to be as perfect as our present knowledge will allow, and as the science is certain to progress there is a large field open to experiment. It would be greatly to the advantage of the Army Medical Department if experiments were carried out under their own control. The cost would be but a trifle compared with the great advantages which would be reaped not only to military but to civil surgery.

In future wars each base hospital must have its surgeon-radiographer, and in addition there must be a number of experts unattached who with portable apparatus can be sent anywhere and everywhere as circumstances may demand. Several lives and limbs would have been saved during the present war—for instance, at the relief of Mafeking—had an expert been within reasonable call. Inasmuch as radiography has been recognised as a legitimate branch of medicine none but qualified experts should be employed, and apart from this, and for reasons which I have already mentioned, this is absolutely necessary if the best results are to be sought after. Recent events at home have shown that the x rays in inexperienced hands are a source of great public danger, and it is to be hoped that steps will be taken to place it beyond the power of the novice to expose his friends or enemies to danger.

In this letter I have purposely refrained from entering into details of any of the many interesting cases which have passed through my hands; I hope, however, to publish some of these on my return home.

Deelfontein, South Africa.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 7329 births and 3964 deaths were registered during the week ending Jan. 5th. The annual rate of mortality in these towns, which had been 16·1 and 16·9 per 1000 in the two preceding weeks, further rose last week to 17·5. In London the rate was 17·8 per 1000, while it averaged 17·3 in the 32 large provincial towns. The lowest death-rates in these towns were 8·6 in Derby, 10·5 in Croydon, 11·2 in Norwich, and 12·0 in Portsmouth; the highest rates were 21·0 in Birkenhead, 21·4 in Sheffield, 21·5 in Manchester, and 22·5 in Liverpool. The 3964 deaths in the 33 towns last week included 323 which were referred to the principal zymotic diseases, against 351 and 334 in the two preceding weeks; of these 79 resulted from diphtheria, 71 from whooping-cough, 56 from measles, 47 from "fever" (principally enteric), 37 from diarrhœa, and 33 from scarlet fever. No death from any of these diseases occurred last week in Huddersfield; in the other towns they caused the lowest death-rates in Cardiff, Burnley, Hull, and Newcastle, and the highest rates in Wolverhampton, Salford, Blackburn, and Sheffield. The greatest mortality from measles occurred in Wolverhampton and in Blackburn; and from whooping-cough in Birkenhead and Sheffield. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 79 deaths from diphtheria included 24 in London, eight in West Ham, eight in Sheffield, seven in Leicester, and five in Bristol. No fatal case of small-pox was registered last week in any of the 33 towns, and only one small-pox patient remained under treatment in the Metropolitan Asylums hospitals on Saturday last, Jan. 5th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2390, against 2477 and 2535 on the two preceding Saturdays; 163 new cases were admitted during the week, against 255, 218, and 167 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 306 and 325 in the two preceding weeks, further rose last week to 330, but were 376 below the corrected average. The causes of 49, or 1·3 per cent., of the deaths in the 33 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Nottingham, Bradford, Leeds, and in 12 other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Preston, Hull, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 18·2 and 20·6 per 1000 in the two preceding weeks, declined again to 19·2 during the week ending Jan. 5th, but showed an excess of 1·7 per 1000 over the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 14·4 in Paisley and 15·7 in Leith to 21·5 in Edinburgh and in Dundee and 22·4 in Greenock. The 602 deaths in these

towns included 29 which were referred to whooping-cough, 22 to diarrhœa, 15 to measles, three to small-pox, three to diphtheria, two to scarlet fever, and two to "fever." In all, 76 deaths resulted from these principal zymotic diseases, against 74 and 87 in the two preceding weeks. These 76 deaths were equal to an annual rate of 2·4 per 1000, which was 1·0 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 26 and 33 in the two preceding weeks, declined again last week to 29, of which 16 occurred in Glasgow, five in Greenock, four in Dundee, and three in Edinburgh. The deaths from diarrhœa, which had increased from 10 to 18 in the three preceding weeks, further rose to 22 last week, and included seven in Glasgow, seven in Dundee, and four in Aberdeen. The fatal cases of measles, which had been 12 in each of the two preceding weeks, increased last week to 15 of which 12 were registered in Edinburgh and two in Aberdeen. The three deaths from small-pox corresponded with the number in the preceding week, and were all recorded in Glasgow, where two of the three fatal cases of diphtheria and both of the deaths from "fever" were also registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 111 and 121 in the two preceding weeks, declined again last week to 105, and were 131 below the number in the corresponding period of last year. The causes of 38, or nearly 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN

The annual rate of mortality in Dublin, which had declined from 27·4 to 21·5 in the four preceding weeks, rose again to 29·4 during the week ending Jan. 5th. During the past four weeks the death-rate in the city has averaged 25·6 per 1000, the rate during the same period being 16·7 in London and 18·5 in Edinburgh. The 197 deaths belonging to Dublin registered during the week under notice were 53 in excess of the number in the preceding week and included 23 which were referred to the principal zymotic diseases, against 16 and 12 in the two preceding weeks; of these, 13 resulted from whooping-cough, four from diphtheria, three from "fever," two from measles, and one from diarrhœa. These 23 deaths were equal to an annual rate of 3·4 per 1000, the zymotic death-rate during the same period being 1·2 in London and 3·2 in Edinburgh. The fatal cases of whooping-cough, which had been seven, six, and five in the three preceding weeks, increased last week to 13. The four deaths from diphtheria exceeded the number recorded in any week since February last. The fatal cases of "fever" which had been four in each of the two preceding weeks, declined to three last week. The 197 deaths in Dublin last week included 48 of children under one year of age and 47 of persons aged upwards of 60 years; the deaths of infants were largely in excess, while those of elderly persons corresponded with the number in the preceding week. Three inquest cases and three deaths from violence were registered, and 53, or more than one-fourth, of the deaths occurred in public institutions. The causes of 17, or nearly 9 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING DECEMBER, 1900.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in each of the 43 sanitary areas of London. With regard to the notified cases of infectious diseases it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 8·0 per 1000 of the population, estimated at 4,589,129 persons in the middle of last year. In the three preceding months the rates had been 8·7, 10·7, and 10·0 per 1000 respectively. The rates were considerably below the average in St. George Hanover-square, Hampstead, Holborn, Clerkenwell, St. George-in-the-East, and Lee; while they showed the largest excess in Fulham, Stoke Newington, Shoreditch, Poplar, St. Saviour Southwark, and St. George Southwark sanitary areas. No case of small-pox was notified last month, and only one small-pox patient remained under treatment in the Metropolitan Asylums hospitals on Saturday, Dec. 29th. Scarlet fever was considerably less prevalent than it had been in any of the three preceding months; among the various sanitary areas this disease showed the greatest proportional prevalence in Fulham, St. James Westminster, Stoke Newington, Strand, Greenwich, and Lewisham (excluding Penge). The Metropolitan Asylums hospitals contained 2460 scarlet fever patients at the end of December, against 1899, 2569, and 2659 at the end of the three preceding months; the weekly admissions averaged 214, against 215, 314, and 259 in the three preceding months. The prevalence of diphtheria showed a considerable decline from that recorded in the preceding month; the greatest proportional prevalence of this disease occurred in Fulham, Stoke Newington, Shoreditch, Poplar, St. Saviour Southwark, and St. George Southwark sanitary areas. There were 1343 diphtheria patients under treatment in the Metropolitan Asylums hospitals at the end of last month, against 1231, 1458, and 1524 at the end of the three preceding months; the weekly admissions averaged 157, against 185, 206, and 185 in the three preceding months. The prevalence of enteric fever showed a decrease from that recorded in recent months; among the various sanitary areas this disease was proportionally most prevalent in St. Marylebone, St. Pancras, City of London, St. Olave Southwark, Camberwell, and Plumstead. The number of enteric fever patients in the Metropolitan Asylums hospitals, which had been 329, 444, and 436 at the end of the three preceding months, had further declined to 403 at the end of December; the weekly admissions averaged 51, against 61 in each of the two preceding months. Erysipelas was proportionally most prevalent in Westminster, Stoke Newington, St. Giles, St. Luke, Whitechapel, and Limehouse sanitary areas. The 19 cases of puerperal fever included three in Islington, two in Paddington, two in Poplar, and two in Wandsworth sanitary areas.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various sanitary areas of the metropolis, the deaths occurring in the public institutions of London having been distributed among the various sanitary areas in which the patients had previously resided. During the four weeks ending Dec. 29th the deaths of 5687 persons belonging to London were registered, equal to an annual rate of 16·2 per 1000, against 16·5, 15·3, and 16·8 in the three preceding months. The lowest death-rates last month in the various sanitary areas were 10·2 in City of London, 11·0 in St. Martin-in-the-Fields, 11·6 in Hampstead, 11·7 in Stoke Newington, 12·0 in St. Giles, and 12·2 in St. James Westminster; the highest rates were 20·6 in Shoreditch, 21·3 in St. Saviour Southwark and in St. George Southwark, 21·7 in Poplar, 22·3 in Bermondsey, and 23·4 in Rotherhithe. During the four weeks of December 478 deaths were referred to the principal zymotic diseases; of these, 95 resulted from measles, 30 from scarlet fever, 114 from diphtheria, 115 from whooping-cough, 78 from enteric fever, and 46 from diarrhœa. No death from any of these diseases occurred last month in Holborn or in Woolwich; in the other sanitary areas they caused the lowest death-rates in St. George Hanover-square, Westminster, Whitechapel, and St. George-in-the-East; and the highest rates in St. Martin-in-the-Fields, Shoreditch, Poplar, St. Saviour Southwark, Bermondsey, and Rotherhithe. The 95 deaths from measles showed a decline of 170 from the corrected average number; this disease was proportionally most fatal in St. Luke, Shoreditch, St. George Southwark, Bermondsey, Battersea, and Lewisham sanitary areas. The 30 fatal cases of scarlet fever were 46 below the average number in the corresponding periods of the 10 preceding years; the greatest proportional mortality from this disease occurred in Hammersmith, Fulham, St. Marylebone, St. Giles, Strand, and City of London sanitary areas. The 114 deaths from diphtheria showed a decline of 104 from the corrected average number; among the various sanitary areas this disease was proportionally most fatal in Paddington, Stoke Newington, Shoreditch, Poplar, St. Saviour Southwark, and Rotherhithe. The 115 fatal cases of whooping-cough were 57 below the average number in the corresponding periods of the 10 preceding years; this disease showed the highest proportional fatality in Kensington, Hampstead, Strand, St. George Southwark, Rotherhithe, and Battersea sanitary areas. The 78 deaths referred to enteric fever were slightly in excess of the corrected average; among the various sanitary areas the death-rate from this disease was highest in Hammersmith, St. James Westminster, St. Martin-in-the-Fields, Strand, City of London, and St. Saviour Southwark. The 46 fatal cases of diarrhœa were below the average number in the corresponding periods of the

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING DECEMBER, 1900.

(Specially compiled for THE LANCET.)

SANITARY AREAS.	Estimated population in the middle of 1900.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.											Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON...	4,589,129	—	1102	887	—	436	4	19	368	—	2816	8·0	—	95	30	114	115	—	78	—	46	478	1·4	5687	16·2	164
West Districts.																										
Paddington	130,104	—	28	13	—	7	—	2	10	—	60	6·0	—	—	1	6	2	—	1	—	1	11	1·1	158	15·8	198
Kensington	173,603	—	35	25	—	15	2	—	11	—	88	6·6	—	—	1	3	12	—	2	—	3	21	1·6	233	17·5	310
Hammersmith	110,203	—	27	24	—	10	1	1	12	—	75	8·9	—	3	3	—	2	—	4	—	5	17	2·0	123	14·5	206
Fulham	136,383	—	55	46	—	8	—	1	10	—	120	11·5	—	3	4	3	2	—	1	—	2	15	1·4	183	17·5	199
Chelsea	96,715	—	19	8	—	13	—	—	4	—	44	5·9	—	—	—	—	4	—	2	—	1	7	0·9	114	15·4	188
St. George Hanover-square	81,133	—	13	8	—	5	—	1	3	—	30	4·8	—	—	—	1	—	—	—	—	—	1	0·2	81	13·0	133
Westminster	51,657	—	12	12	—	1	—	1	6	—	32	8·1	—	—	—	—	—	—	—	—	1	1	0·3	73	18·4	165
St. James Westminster	21,457	—	8	3	—	1	—	—	—	—	12	7·3	—	—	—	—	—	—	1	—	—	1	0·6	20	12·2	167
North Districts.																										
Marylebone	139,777	—	38	9	—	17	—	—	8	—	72	6·7	—	—	3	2	3	—	2	—	1	11	1·0	179	16·7	140
Hampstead	81,766	—	15	13	—	1	—	—	2	—	31	4·9	—	1	1	2	3	—	2	—	1	10	1·6	73	11·6	135
St. Pancras	245,651	—	56	40	—	38	—	—	26	—	160	8·5	—	—	1	6	5	—	7	—	1	20	1·1	293	15·6	176
Islington	351,541	—	114	68	—	32	—	3	22	—	239	8·9	—	2	—	8	13	—	8	—	5	36	1·3	425	15·8	196
Stoke Newington	35,718	—	16	28	—	—	—	—	5	—	49	17·9	—	—	—	4	—	—	—	—	—	4	1·5	32	11·7	102
Hackney	225,519	—	47	44	—	22	—	1	20	—	134	7·7	—	3	—	4	1	—	6	—	—	14	0·8	245	14·2	122
Central Districts.																										
St. Giles	36,870	—	10	3	—	3	—	—	5	—	21	7·4	—	—	1	—	—	—	—	—	1	2	0·7	34	12·0	74
St. Martin-in-the-Fields	11,865	—	3	1	—	1	—	—	—	—	5	5·5	—	—	—	—	—	—	1	—	1	2	2·2	10	11·0	222
Strand	22,748	—	11	1	—	2	—	—	—	—	14	8·0	—	—	1	—	1	—	1	—	—	3	1·7	25	14·3	111
Holborn	29,188	—	5	2	—	1	—	—	—	—	8	3·6	—	—	—	—	—	—	—	—	—	—	—	42	18·8	160
Clerkenwell	66,007	—	11	5	—	7	—	—	3	—	26	5·1	—	—	—	1	2	—	2	—	1	6	1·2	86	17·0	109
St. Luke	40,655	—	3	8	—	2	—	—	5	—	18	5·8	—	2	—	1	1	—	—	—	—	4	1·3	59	18·9	74
City of London	26,922	—	4	1	—	5	—	—	3	—	13	6·3	—	—	1	—	—	—	1	—	—	2	1·0	21	10·2	32
East Districts.																										
Shoreditch	120,641	—	29	48	—	13	1	—	15	—	106	11·5	—	12	—	5	2	—	3	—	2	24	2·6	191	20·6	154
Bethnal Green	128,831	—	32	27	—	13	—	—	14	—	86	8·7	—	1	2	2	3	—	4	—	—	12	1·2	185	18·7	166
Whitechapel	82,220	—	15	21	—	5	—	1	13	—	55	8·7	—	1	—	2	—	—	—	—	—	3	0·5	83	13·2	88
St. George-in-the-East	48,875	—	4	3	—	4	—	—	5	—	16	4·3	—	—	—	1	1	—	—	—	—	2	0·5	61	16·3	149
Limehouse	58,944	—	8	11	—	5	—	—	9	—	33	7·3	—	1	1	—	1	—	—	—	—	3	0·7	72	15·9	156
Mile End Old Town	113,781	—	24	18	—	15	—	—	12	—	69	7·9	—	—	—	3	2	—	1	—	1	7	0·8	128	14·7	125
Poplar	170,968	—	51	69	—	23	—	2	19	—	164	12·5	—	2	1	20	1	—	5	—	1	30	2·3	284	21·7	183
South Districts.																										
St. Saviour Southwark	23,854	—	6	15	—	1	—	—	2	—	24	13·1	—	1	—	3	1	—	1	—	—	6	3·3	39	21·3	243
St. George Southwark	60,697	—	19	20	—	5	—	—	4	—	48	10·3	—	4	—	—	1	—	—	—	—	5	1·1	99	21·3	205
Newington	125,138	—	27	26	—	10	—	1	12	—	76	7·9	—	4	1	4	5	—	3	—	1	18	1·9	181	18·9	175
St. Olave Southwark	10,909	—	—	2	—	2	—	—	1	—	5	6·0	—	—	—	1	—	—	—	—	—	1	1·2	15	17·9	172
Bermondsey	85,920	—	17	24	—	10	—	—	2	—	53	8·0	—	18	—	3	1	—	1	—	2	25	3·8	147	22·3	200
Rotherhithe	41,246	—	3	6	—	7	—	—	3	—	19	6·0	—	1	—	5	5	—	1	—	—	12	3·8	74	23·4	273
Lambeth	312,152	—	65	40	—	29	—	1	26	—	161	6·7	—	2	2	5	10	—	4	—	2	25	1·0	345	14·4	134
Battersea	178,100	—	34	31	—	15	—	—	11	—	91	6·7	—	10	1	3	7	—	—	—	1	22	1·6	224	16·4	189
Wandsworth	217,004	—	56	28	—	17	—	2	21	—	124	7·4	—	4	—	1	9	—	3	—	2	19	1·1	239	14·4	167
Camberwell	268,457	—	60	64	—	34	—	1	22	—	181	8·8	—	6	2	9	12	—	6	—	5	40	1·9	304	14·8	147
Greenwich	184,582	—	67	35	—	18	—	1	14	—	135	9·5	—	7	1	5	3	—	1	—	3	20	1·4	235	16·6	174
Lewisham (excluding Penge)	93,548	—	34	14	—	6	—	—	4	—	58	8·1	—	7	1	—	—	—	2	—	1	11	1·5	105	14·6	139
Woolwich	41,600	—	3	12	—	2	—	—	2	—	19	6·0	—	—	—	—	—	—	—	—	—	—	—	51	16·0	125
Lee	40,722	—	7	3	—	—	—	—	1	—	11	3·5	—	—	—	—	—	—	1	—	1	2	0·6	43	13·8	163
Plumstead	65,558	—	11	7	—	10	—	—	1	—	29	5·8	—	—	1	1	—	—	1	—	—	3	0·6	73	14·5	144
Port of London	—	—	—	1	—	1	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 22 cases of membranous croup.

† Including deaths from membranous croup.

NOTE.—The changes made under the London Government Act (1899) are not taken into account in the above table.

10 preceding years; this disease was proportionally most fatal in Hammersmith, Westminster, St. Giles, St. Martin-in-the-Fields, Bermondsey, and Lee. In conclusion, it may be stated that the aggregate mortality from these principal zymotic diseases in London during December was more than 43 per cent. below the average.

Infant mortality in London last month, measured by the proportion of deaths of children under one year of age to registered births, was equal to 164 per 1000. The lowest rates of infant mortality were recorded in Stoke Newington, St. Giles, Clerkenwell, St. Luke, City of London, and Whitechapel; and the highest rates in Kensington, Hammersmith, St. Martin-in-the-Fields, St. Saviour Southwark, St. George Southwark, and Rotherhithe sanitary areas.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeon A. Patterson to the *Blake;* Surgeon R. A. Kirby to the *Blake*. Deputy Inspector-General Evelyn R. H. Pollard relieves Deputy Inspector-General Richard Coppinger at Jamaica Hospital.

ROYAL ARMY MEDICAL CORPS.

Major Lane is transferred from the Scinde District to the Bombay District and is appointed to the medical charge of the Station Hospital, Deolali. Major A. E. Morris is appointed to the medical charge of the Station Hospital, Hyderabad (Scinde). Major W. Babtie, V.C., C.M.G., is appointed to the Home District for temporary duty. Captain G. A. Moore is posted to the Station Hospital, Shorncliffe, for duty.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain A. G. Bateman, having resigned his Volunteer appointment, ceases to belong to the Army Medical Reserve of Officers. Surgeon-Captain Evan Evans to be Surgeon-Major.

YEOMANRY CAVALRY.

Herts: Surgeon-Lieutenant J. A. Turner resigns his commission.

TRANSVAAL WAR NOTES.

Civil Surgeon J. W. Aldred died at Kroonstad on Jan. 1st from enteric fever.

The following have been discharged from hospital to duty:—Surgeon-Lieutenant J. C. J. MacNab, 1st Fifeshire Volunteer Artillery; Captain C. F. Wanhill, Captain F. J. Wade-Brown, and Lieutenant W. J. Padye-Curran, and Civil Surgeons C. H. Pegg, E. H. North, J. G. Martin, and A. W. Saunders, Royal Army Medical Corps.

The *Norman* left for England on Dec. 27th, having on board Civil Surgeon H. R. Phillips.

Viscountess Parker, president of the Ladies' Committee of the Welsh Hospital, has received a letter from the Queen with reference to the report recently issued by the committee on the work of the hospital in South Africa. Her Majesty expresses her gratitude for the admirable work done by the hospital and grieves for the loss of the valuable lives among its staff in the fulfilment of their noble, self-sacrificing work.

The *Arundel Castle* left for England on Jan. 1st, having on board Civil Surgeons W. J. Waters, P. Wood, and C. C. Simpson.

The following officers of the Royal Army Medical Corps will retire during the present year: Colonel C. F. Churchill on April 10th; Colonel R. H. Carew, D.S.O., on August 10th; Lieutenant-Colonel H. H. Stokes on Sept. 11th; Surgeon-General H. S. Muir on Oct. 4th; and Surgeon-General T. F. O'Dwyer on Dec. 26th.

THE ARMY MEDICAL SERVICE OF JAPAN.

It is almost a platitude to say that the Japanese are a most intelligent, enterprising, and progressive people, for the fact has long been recognised. It is not that they are remarkable merely for their receptive and imitative faculties, for Eastern peoples are often that, but the Japanese possess, in addition to a singular aptitude for mastering details, constructive and initiative powers as well as considerable mental and physical energy. With these qualities, together with great natural courage, they are the born leaders of the yellow race and are probably destined to play an important part in history. It is not only in the organisation and equipment of their naval and military forces, but in the part they are taking in scientific research, and especially in medical science, that the Japanese have already made their mark, as indicated in Kitasato's discovery of the plague bacillus and in his new method of treating dysentery by serum inoculation. In the practice of the art of surgery, as might have been expected from a people who have exhibited so much manipulative skill and delicacy and attention to detail and minutiæ in their weird artistic productions, they excel. During the war with China in 1894–95 it will be remembered that the present Surgeon-General Taylor of the British Army Medical Service accompanied the Japanese forces in the field, and that on his return he wrote in his official report in high terms of praise of their medical organisation and arrangements during that campaign. The impression which we then formed was that if they were lacking in anything it was in applied army hygiene. The Japanese being an eminently teachable people, however, lost no time in turning the experience they gained in their war with China to account, and they have made all their hospital arrangements for the present war in that country, in which they are taking part, in common with the forces of the European Powers and America, on a very comprehensive and elaborate scale and practically with marked success. In the *Times* of Jan. 7th there is a most interesting communication from its correspondent at Tokio on the "Army Medical Service in Japan" which is well worth reading at the present time. When it is considered that Japan on the present occasion is put in comparison and competition with all the other armed powers operating in China, the result is remarkable and highly creditable to the Japanese Government. From all we have heard the German hospital arrangements in China are very good and the same may be said of the British, Americans, and Japanese, but what might not have been expected is that those of the last-named should have been as complete and excellent as they undoubtedly are.

THE CIRCULAR LETTER FROM THE DUKE OF CAMBRIDGE.

Our readers have probably perused for themselves the circular letter which the President of the Patriotic Fund has addressed to the municipal and county authorities throughout the United Kingdom. Its object apparently is to nationalise all the systems and charitable institutions at present in operation for the relief of sufferers by the war, and to organise a network of local associations in regular communication with a central council—the Commissioners of the Patriotic Fund. Various philanthropic and well-known institutions—the British Red Cross Society, Lloyd's Patriotic Fund, and Trusts for Old and Disabled Soldiers—should be, it is proposed, welded together, consolidated, and merged into one. The proposal seems to be in the abstract and in principle a sound one in that it would prevent a good deal of energy and money from being ineffective or wasted in administration, and do away with much of the existing overlapping of many societies. But the Commissioners of the Patriotic Fund have not somehow managed to obtain the trust and confidence of the nation in respect of the management of that fund. The general public, we imagine, desire to see the money they contribute for compassionate purposes go straight to the objects of their sympathy, and there is a danger, too, lest the charitable contributions to existing and well-known bodies might be seriously checked.

THE TOTAL LOSSES IN SOUTH AFRICA.

According to the War Office returns issued on Jan. 4th, 1901, showing the casualties in the field force in South Africa reported during the month of December, 1900, and total casualties since the beginning of the war up to and including the month, it would appear that during December the casualties were 118 officers and 2306 non-commissioned officers and men. 28 officers were either killed or died of wounds or of accidents or of disease and 750 non-commissioned officers and men from the same causes. The totals up to and including the month show that 421 officers and 4251 non-commissioned officers and men were killed or died of wounds, and 174 of the former (officers) and 7011 men died of disease. The total deaths in South Africa from all causes amounted to 604 officers and 11,554 men, while 1638 officers and 36,988 men were sent home as invalids. The total reduction of the military forces through war in South Africa from all causes, including deaths in that country and among invalids sent home or discharged the service as unfit, together with missing and prisoners, make up a total of 615 officers and 14,265 men, or 14,880 altogether.

A TRIBUTE TO THE ARMY MEDICAL DEPARTMENT.

Brigadier-General T. C. Porter on Dec. 29th received a

hearty welcome from the inhabitants of his native borough of Saltash, Cornwall, upon the occasion of his return from South Africa, and an address was presented to him in the town-hall by the Mayor and town council. In the course of an interesting speech upon the war Brigadier-General Porter said that he could not use the expressions "medical officer" or "chaplain" without a feeling of the deepest reverence, and added that wherever death stood in all its nakedness there was the medical officer or the chaplain, both without a feeling of any sort in their mind except the help which they could offer to the poor unfortunate fellows who then and there required it.

ASSASSINATION OF A MEDICAL OFFICER.

We much regret to announce that a Reuter's telegram from Calcutta, dated Jan. 9th, says that Captain Dudley Cater Johnston, I.M.S. (24th Bombay Infantry), senior medical officer at Loralai, east of Quetta, has been murdered in the civil bazaar by a Ghazi. The assassin was arrested. Captain Johnston qualified in 1891 as M.R.C.S. Eng., L.R.C.P. Lond. The fanaticism of the Ghazis is well known and this is by no means the first occasion upon which the lives of Europeans, both military and civil, have been sacrificed. Captain Johnston who, it will be seen, was a young officer, only entered the Indian Medical Service in 1897, and is thus untimely cut off at almost the threshold of his career.

THE BRITISH RED CROSS SOCIETY.

Lord Wantage, in a letter to the press, detailing the work done by this society, of which he is chairman, states that the total number of persons treated in the wards of the hospital ship *Princess of Wales* has amounted to 725. The Princess Christian hospital train has visited and relieved over 30 hospitals and field stations.

NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund held on Jan. 8th Sir J. N. Dick, K.C.B., in the chair, the sum of £70 was distributed among the several applicants.

Correspondence.

"Audi alteram partem."

"ISOLATION HOSPITALS."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Dec. 29th, p. 1921, Mr. E. D. Marriott replies to my previous letter to you—he does not answer it. Instead of claiming that my chart proved his case I would like Mr Marriott to explain why the notified cases of scarlet fever in Bolton diminished during the years 1889 to 1894, having, of course, first assumed that the increase during 1885 to 1889 was caused by the opening of the isolation hospital in 1884. I presume that the hospital remained open during the entire period under discussion. I would also like Mr. Marriott to explain why the considerable fall of notified cases in Nottingham in 1896 followed the year of the highest percentage of removals. The very high increase of cases in 1899, the rise I am accused of omitting for my own purposes, occurred in a year with an exceptionally small percentage of removals. The fall following the highest percentage of removals known in Nottingham, and the highest number of notified cases following the smallest percentage of removals since 1887 are two facts strongly opposed to Mr. Marriott's inference; they most certainly do not prove his case.

In reference to periodic waves I think the evidence in favour of them is very strong; however, whether such waves exist or not is no proof that scarlet fever should not be aggregated, if we still consider that disease to be infectious. Mr. Marriott states that 93 per cent. (a very high figure) of notified cases are removed to hospital for isolation, and calls this "practically all," and concludes that this aggregation of "practically all" the cases "must succeed in stamping out the disease at no distant date." He then anticipates the future and explains that the reason for this not occurring "will be found in the continued infectivity of hospital discharged patients." He blames the "hospital discharged patients" for the continuance of scarlet fever in our midst; he ignores any mischief that may be caused by the 7 per cent. of infectious cases left at home, and takes absolutely no notice of a very highly important and serious third element—namely, cases that are for various reasons never notified, cases found in the large public and board schools freely desquamating and sowing the disease broadcast over their district. I do not know Mr. Marriott's definition of "return case," but to my mind all the instances he gives in his letter would come within that category.

I am, Sirs yours faithfully,

Manchester, Jan. 5th, 1901. A. J. TONKIN, M.B.R.U.I.

UNIVERSITY COLLEGE, LONDON: RETIREMENT OF THE BEADLE OF THE MEDICAL LIBRARY.

To the Editors of THE LANCET.

SIRS,—Will you kindly allow me an opportunity through your columns of letting old University College men know that Mr. Mann, the beadle of the medical library, has just been pensioned after 37 years' service? He is 80 years of age and in feeble health and it is thought that many who have known him will be glad of an opportunity of helping to make his remaining days as comfortable as possible. Subscriptions may be sent to Mr. Raymond Johnson, University College, London.

I am, Sirs, yours faithfully,

HERBERT R. SPENCER,

Jan. 7th, 1901. Dean of the Medical Faculty.

"THE TREATMENT OF PULMONARY TUBERCULOSIS."

To the Editors of THE LANCET.

SIRS,—Your correspondent "M.R.C.S.," whose letter appeared in THE LANCET of Jan. 5th, p. 66, is, of course, entitled to his own opinion respecting the sanatorium treatment of consumption, though, as it seems to be in opposition to that of nine-tenths of the medical profession of the civilised world, no great importance will be attached to it by your readers. What he is not entitled to do is to cast unwarrantable aspersions upon the motives of those who are engaged in a legitimate branch of practice unsupported by evidence of any kind. I undertake to say, and I speak with knowledge, that the motives of those medical men who are carrying out this system of treatment are as free from commercial taint as those of any other class of practitioner. The life is an arduous one, and presents few attractions apart from the interest of the work itself. The suggestion that non-tuberculous cases are received, and are encouraged to believe themselves to be sufferers from the disease which they have not is simply libellous and absolutely false. I might retort by the suggestion that the serious prejudice of "M.R.C.S." against sanatorium treatment is due to the fact that it involves the withdrawal of profitable patients from the dispensation of their family attendant, but I will not stoop to his methods of controversy. So far from agreeing that the profession has "gone mad" on the subject I contend that we in this country have just come to our right mind about it, as hitherto we have been far behind other nations in this matter.

"M.R.C.S." prophesies that the open-air treatment will in a short time die. Yes, it will die when it has done its work and when consumption has become extinct. Meanwhile there is plenty of work to be done, and the system, being based on common-sense and of approved utility, will survive a good deal of adverse criticism. Sanatorium treatment of chronic diseases is, as Dr. A. H. Carter recently pointed out, much more in accord with modern conceptions than home treatment and is bound to become general. The open-air treatment, not of phthisis only but of many other maladies, has a great future before it and the sneers of "M.R.C.S." are but as dust in the balance when opposed to the reasoned approval of better informed men.

I am, Sirs, yours faithfully,

Jan. 5th, 1901. M.D.

THE LICENTIATE IN DENTISTRY AND THE ADMINISTRATION OF ANÆSTHETICS.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Jan. 5th (p. 73) there is a note as to a death at Newport (Mon.) after an operation under gas and ether for the extraction of teeth in a young man aged 21

years. It would appear from the words of the report "a medical man was fetched," that no medical man was present at the operation, and that it was performed, and also the anæsthetic administered, by the dental surgeon. Also it seems that though an obstruction to respiration was thought to exist in the throat tracheotomy was not performed. Again, the female attendant stated that she believed she had taken all the sponges from the patient's throat and yet one of them was found post mortem to be fixed in the windpipe.

This case, if it be correct as reported, seems to me to raise the very serious question as to the justification as well as the competence of one person to undertake both the operation and the administration of the anæsthetics. Here apparently we have a dentist who has no medical qualification—and if he had it would make no difference to the issue—undertaking two difficult things, each usually regarded as sufficient to task the attention of one man. The administration of a major anæsthetic for the extraction of teeth is a very serious and responsible matter, as much so as in the case of most ordinary surgical operations. Had a medical man given the anæsthetic, or even been present, the loss of the sponge might have been noticed, and if unnoticed he might have recognised that the obstruction, whatever it was, would be obviated by tracheotomy, which he could have performed. It does not seem to me that an L.D.S. only is competent to deal with the risks and their sequelæ of serious operations *plus* the administration of anæsthetics.

Has a non-medically qualified dentist the legal right, or is he regarded by the college which grants his diploma as competent, to administer a major anæsthetic or, indeed, any anæsthetic at all? The matter is not usually one of emergency, at any rate in the case of a major anæsthetic, and the coroner has nothing to guide him as to these questions.

Dr. Dudley Buxton in his book on Anæsthetics has a paragraph apt to this case. The question, Who is to be regarded as competent to administer an anæsthetic? needs medical and legal regulation and settlement.

I am, Sirs, yours faithfully,

Jan. 5th. Q.

*** We deal editorially this week with some points in this case.—ED. L.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENT.)

The Bishop of Calcutta on Physiological Experiment.—The Hospital Ship "Gwalior" and Invalids from China.—The Progress of the Plague: Increase in Bengal.—The Famine.

THE recent utterances of Dr. Welldon, Bishop of Calcutta, may prove of considerable value. Having visited the Pasteur Institute at Kasauli he speaks of the experiments at first hand and says: "I know the process to be characterised in all its aspects by the most thoughtful and scrupulous humanity." His arguments in favour of scientific research seem unanswerable. He refers to the religious as well as the medical side of the question and on the first head quotes Genesis ix. 2, 3. This revelation of faith is without the slightest ambiguity, but the bishop also made use of another excellent argument—that of the principle of vicarious sacrifice. He refers to the awfulness of this law—how it ranges throughout nature and how it enables one species to live at the expense of the lives of others. "Wherever life, even the lowliest, is laid down for the preservation of other lives that principle is seen." Passing from the sanction of religious authority for the fact that man is entitled to take the life of the animal creation for his own, he goes on to say: "and to take it even though the process of taking it is not painless," but whether man acts according to his noblest instincts if he treats the sacrifice of animal life as a mere sport the bishop thinks open to question. Even on this head he holds very broad views and says: "I will say frankly that in my eyes the battle of man with the wild animals is rather an element in that discipline of self-defence in which men by the law of their sex are naturally engaged." Referring to the sacrifice of life which ranges throughout Nature in involuntary ways the argument is extended to show how this involuntary sacrifice passes into the sphere of free volition, from the sacrifice in which no moral element is involved to the sacrifice of the good for the good. The bishop concludes: "But if under the mysterious divine law which constitutes sacrifice the price of human existence and the penalty of human progress man is entitled to take the lives of the animals for his own life, who can doubt that what is true of mere sport is not less true of medical and surgical relief? For these the pain is less and the gain is infinitely greater. There the sacrifice is made, not for a momentary gratification of taste or triumph of skill, but for the immunity of human beings and of the lower animals themselves from the agonies of disease and death."

The hospital ship *Gwalior* has returned from China and disembarked the sick and invalid troops of the various native regiments composing the Indian contingent in China. Soon after her arrival at Hong-Kong the *Gwalior* was despatched to Taku. Having embarked invalids from Peking and Tientsin the vessel called at Wei-hai-Wei. The Maharajah of Gwalior has returned after having served for a brief period on the staff of Sir Alfred Gaselee. We understand that the ship will be again sent to the China station. The transport *India* has also arrived with nearly 1000 sick and weak men from the various native regiments and coolie corps. About 600 men—coolies and followers—were found to be weak in the chest and of poor physique, rendering them unfit to stand the winter climate. On Nov. 20th, at Taku the buckets of water kept on deck were found to be frozen into solid ice. The troops at Peking and elsewhere now are picked and strong men and are accommodated in barracks with fireplaces and a double supply of warm clothing, blankets, &c. The German and French troops are said to be suffering severely. The good health that the Indian contingent is keeping at the present time shows that everything possible is being done for the welfare of our troops.

News relating to plague is this week unsatisfactory. For the whole of India there have been 2107 deaths, as compared with 1989 for the week before and 1685 for the corresponding week of last year. The virulence of the rising epidemic seems to have been translated from the west to the east, the Bombay Presidency showing a decline, while the Bengal province shows a considerable increase. The disease is very rife in Patna (549 deaths this week against 457 last week), Saran (306 against 217), and Monghyr (110 against 74). In the Mysore province, whence 547 deaths are reported, it continues as severe as before. The recrudescence in Bangalore is declared in some quarters to be the result of the new regulations which virtually withdraw almost the whole of the checks previously imposed on the spread of the disease. In Bombay city there is apparently a recrudescence, but the increase is at present small. In Calcutta the disease is slumbering, but the general mortality is unusually high and a large number of suspicious deaths are occurring. The general mortality in Bombay city has again risen and now stands at 898 for the week. Of this number 102 deaths occurred from plague. The births being about the same as last year it is probable that the population is about the same. The curious increase of deaths from phthisis continues. As compared with Calcutta it is important to note that about 40 cases of plague are in the hospitals, whereas there is not a single case in the hospitals in Calcutta.

Inoculation in Bombay city has sunk to practically nothing and in Calcutta there is no sign of any attempt on the part of the authorities or of the people to take advantage, in view of the probable approaching outbreak, of this protection. In Calcutta everything is apparently being sacrificed for the huge experiment of wholesale disinfection. We are informed that over 200,000 rooms, chiefly of the native huts, have been disinfected; in the course of a few weeks almost the whole of the native quarters will have had the ground floors disinfected.

The prospects of the famine in parts of the Deccan in western India are unsatisfactory. Owing to the deficiency of rain in this district again this season the crops have withered. The people are returning to the relief works in increasing numbers as there is no demand for field labour. It is estimated that relief works for at least 80,000 will have to be maintained in that district until the advent of the next monsoon. For the whole of India there are still about 250,000 persons on relief—about two-thirds of this number are engaged on relief works, the remainder receiving gratuitous relief.

Dec. 22nd, 1900.

SURGICAL ANÆSTHESIA BY THE INJECTION OF COCAINE INTO THE LUMBAR SUB-ARACHNOID SPACE.

(FROM A CORRESPONDENT.)

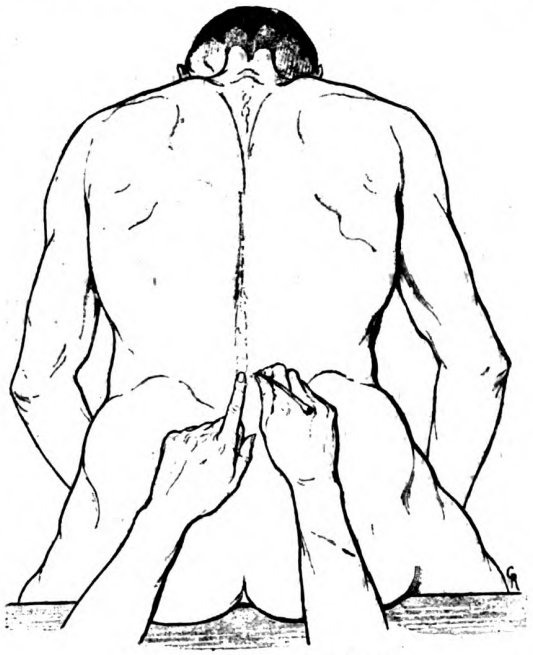
THE event of the late surgical year in Paris has undoubtedly been the impetus given by Tuffier to the method of inducing anæsthesia by medullary injections of cocaine, a suggestion already made and acted upon by Bier of Kiel [1] and Seldowitsch [2] of Russia and Corning of Chicago,[3] but which had left little impress upon current surgical practice or literature. Tuffier's first publication on the subject was made more than one year ago in the *Presse Médicale*, Nov. 15th, 1899, and since then the interest aroused has been abundantly proved by the mass of observations and criticism recorded.

To judge by the most recent *résumé* [4] of the subject one would almost think that the final cry of "Eureka" had been raised and that a general anæsthetic had been found to largely replace chloroform and ether, free from both their dangers and their inconveniences. Here and there, however, a few warning voices have been raised, and it is interesting to note that England, with her characteristic conservative caution, is lagging behind the general movement.

A rapid survey will enable us to pick out the more salient features of the subject, while the readers of THE LANCET will no doubt be interested even in the details of the important points, such as the technique of the injection, the after-consequences and effects of the cocaine, and the nature of the operations in which it has been used. Tuffier was first led to use it as a means of relief in the case of a young man suffering from an inoperable osteo-sarcoma of the ilium whom morphia failed to relieve. The result of the injection of cocaine was striking. The patient, who was crouching down in the position of greatest ease, felt the pain disappear in a few minutes and was even able to rise. There was at the same time absolute anæsthesia reaching to the umbilicus. Unfortunately the relief lasted only a few hours and the injection was repeated two days later with similar effect, pressure over the tumour for some hours causing no pain whatever. A few days later a similar injection was tried for a patient with a recurrent sarcoma of the thigh, and to Tuffier's surprise he was able to remove completely the tumour with absolutely no pain to the patient, the anæsthesia lasting over an hour. At first, therefore, used only in the surgery of the lower limbs, Tuffier rapidly extended its use to operations upon the perineum, the rectum, the anus, the bladder, the ureter, the kidney, and such laparotomies as hysterectomy, removal of the appendix, and even gastro-enterostomy. Finally, removal of the breast has been effected with complete anæsthesia. Convinced of the *absolute harmlessness* of the injections, Tuffier [5] then used them in general gynæcology and performed such operations as hysteropexy, drainage of salpingitis, ovariotomy, vaginal hysterectomy, &c., with equal success. Legueu,[6] however, complains that in one of his three vaginal hysterectomies the anæsthesia was not perfect and that when strong traction was made upon the uterus the patient complained of abdominal discomfort.

TECHNIQUE.

The details of the technique followed are given in the *Semaine Médicale* of May 16th, 1900, and later Tuffier is careful to disclaim any originality save in some practical technical points of his procedure. An ordinary hypodermic syringe will suffice, provided its construction admits of absolute sterilisation. The best, therefore, is the glass syringe made by Luer, which can be boiled without injury and which never gets out of order. The needle should be strong, of platinum, about nine centimetres in length—i.e., three and a half inches—with its penetrating sharpened portion cut very short. The solution of cocaine used is 2 per cent. and must be freshly prepared and sterilised. It seems, however, probable that in the long run weaker solutions will become of more frequent use and that the solution of cocaine used will vary from 1 in 100 to as little as 1 in 400. The patient should be seated, bent forward slightly, with both arms in front of him (see figure). The lumbar region is thoroughly cleansed and the anatomical landmarks are noted. It will be found that a horizontal line between the two highest points posteriorly of the iliac crests passes immediately below the fourth lumbar spinous process. Above or below this line in the intervertebral space the needle will freely enter the medullary canal. The left index then marks the fourth spinous process and the patient is told to bend well over forwards, thus increasing the space between the vertebræ by nearly three-fifths of an inch. The needle alone is then entered at about a centimetre (two-fifths of an inch) to the right of the middle line in a direction forwards and inwards in the third or fourth lumbar interspace, as may be selected. The third lumbar interspace is that commonly chosen, but the fourth may be punctured with equal facility and effect and Legueu frequently injected the cocaine into the second lumbar space. It is interesting to recollect that Corning's first injection was made between the twelfth dorsal and the first lumbar vertebra. The needle thus pierces the skin, the subcutaneous tissue, the lumbar fascia, the sacro-lumbar muscles, and the quadratus lumborum and enters the spinal canal through the ligamentum flavum which alone offers any noticeable resistance.



Cocainisation of the spinal canal.

As the needle enters the subarachnoid space the absence of resistance is at once felt, and almost at once the clear, yellowish, cerebro-spinal liquid escapes, drop by drop. The syringe has been already prepared, containing from one to two cubic centimetres of the 2 per cent. solution—i.e., from one to two centigrammes of cocaine (from 20 to 30 minims, containing about a quarter of a grain of cocaine)—and is now fitted to the needle and the solution is very slowly injected. The quantity of cocaine injected, it will thus be seen, is very small, and yet the anæsthesia resulting will last about one and a half hours. The little puncture is then sealed with collodion, the patient lies down, and an assistant at once begins to cleanse and to prepare the field of operation. The analgesia passes gradually from the feet upwards,

[1] Bier: Versuche über Cocainisirung des Rückenmarks, Deutsche Zeitschrift für Chirurgie, 1899, p. 361.

[2] Seldowitsch: Centralblatt für Chirurgie, 1899, p. 1110.

[3] Corning: New York Medical Journal, 1885, p. 483. See also Marcus, Medullary Narcosis (Corning's method), its history and development, Medical Record, October, 1900, p. 561.

[4] Tuffier: Un mot d'historique à propos de l'analgésie chirurgicale par voie rachidienne, Presse Médicale, Nov. 7th, 1900 (where a full bibliography is given).

[5] Tuffier: Revue de Gynécologie et de Chirurgie Abdominale, tome iv., No. 4, July-August, 1900, p. 683. It is to M. Masson, the publisher of this admirable review, and to Dr. Tuffier's courtesy that I am indebted for the plate accompanying this article.

[6] Legueu: De l'Anesthésie de Cocaïne et d'Eucaïne, Presse Médicale, Oct. 27th, 1900.

and for a laparotomy it may be necessary to wait from ten minutes to a quarter of an hour before commencing.

Tuffier, whose experience is probably greatest of living surgeons, has not yet observed an accident which he could attribute to the injection or to the cocaine. He has by this method performed over 200 operations of which more than half have been intra-peritoneal. Legueu[7] prefers eucaine to cocaine owing to its lesser toxicity and its greater stability during sterilisation by heat. Hydrochlorate of eucaine may be sterilised either in an autoclave or by heating the solution for half an hour on three successive days to 100° C. Hydrochlorate of cocaine, on the other hand, at this temperature will decompose into methylic alcohol, benzoic acid, and ecgonine, and can only be raised to a temperature of 80° C. Legueu's conclusion after some weeks' experience and over 50 operations is that as a method of anæsthesia it is destined to take an important place in a great number of operations, and he specifies all below the level of the umbilicus, all operations on the perineum, the lower urinary passages, the lower limbs, always supposing that muscular contractions do not too greatly embarrass the surgeon. Thus, in one case of fracture of both bones of the leg with great displacement, while Legueu was able freely to manipulate and attempt to reduce the fracture without any pain the muscular contraction persisted and a few days later the bones required to be stitched under chloroform.

Both Legueu and Tuffier maintain that throughout they have met with no serious results either during or after an operation and both enter into minute detail as to the sensations experienced by the patients. These almost at once mention itchings and tingling sensations of the legs, due possibly to some irritation of a nerve of the cauda equina. Some also refer to a passing sense of suffocation, with perspiration and pallor, all, however, of brief duration. The more important and constant symptoms are vomiting, headache, and rise of temperature.

Vomiting in two-thirds of the cases is absent and the patients seem almost unaware of what is being done. Reclus has recommended that before even an endermic injection of cocaine the patient should take food. The vomiting is not according to the quantity of cocaine injected but more probably depends upon some individual susceptibility, as indeed is the case with chloroform and other general anæsthetics.

Headache occurs in rather more than half the cases, but is, as a rule, slight and of short duration. It usually comes on a few hours after the operation, to disappear in the 24 hours, and not uncommonly causes sleeplessness.

Elevation of temperature occurs in about 20 per cent. and has been observed in such comparatively simple cases as anal fistula, varicocele radical cure of inguinal hernia, varying from 102° to 104° F. It invariably had fallen to normal the following day in Legueu's cases. The pupils are occasionally dilated, both retention and incontinence of urine have been remarked, and the sphincter ani may relax shortly after the injection.

At the Thirteenth International Congress of Medicine held in Paris in August, 1900, more serious objections were made. Dr. Severeannu of Bucharest had observed a general depression lasting a day or two which had caused him considerable anxiety, and he considered it a serious inconvenience to the surgeon that the patient should be consciously present at his own operation. Dr. Racoviceanu,[8] also of Bucharest, reported three cases in which he had injected four centigrammes, or three-fifths of a grain, and had been obliged to have recourse to artificial respiration for 20 minutes and hypodermic injections of ether, and added that "he had knowledge of two deaths in Roumania following lumbar injection of cocaine." This statement, however, is altogether lacking in precision and receives no confirmation from other surgeons.

It is strange, too, that Racoviceanu concludes his *mémoire* by stating that while the accidents he has observed prevent him from recommending the method to others, he is personally very satisfied with the results he has obtained. Bier, the originator, is himself doubtful of its practicability and in February, 1900, wrote to Cadol[9] that he thought the method, owing to the subjective disturbances sometimes caused by the cocainisation of the spinal cord, was not yet practical. Delbet[10] concludes that it offers no advantages over chloroform, but, on the contrary, has the same contra-indications with the further disadvantage that the anæsthesia is not complete.

The number of published observations now amounts to nearly a thousand.

[7] Legueu: Gazette des Hôpitaux, Feb. 18th, 1897, De l'Eucaïne en Chirurgie; and Presse Médicale, Oct. 27th, 1900.

[8] Racoviceanu: Contribution à l'Étude de l'Anesthésie Médullaire par la Cocaïne. Paris, 1900.

[9] See also Cadol's Thesis, 1900, L'Anesthésie par les Injections de Cocaïne sous l'Arachnoide Lombaire.

[10] Delbet: Journal des Praticiens, Oct. 13th, 1900, De l'Anesthésie par Injections Intra-rachidiennes de Cocaïne.—See also reviews of several articles in Revue de Thérapeutique, Nov. 15th, 1900.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

"Irish" Butter.

AN appeal case was concluded at the Preston Quarter Sessions on Jan. 5th in which the decision, according to one of the reports, "is of supreme importance to provision merchants, farmers, and dairymen throughout the British Isles," but the British public are passed over, though one would have thought that their interest in the question deserved mention. It all turned on the oft-debated point of the percentage of water in the butter. A company with the quaint title of "The Peace and Safety Industrial Society, Limited," of Rawtenstall, had been convicted by the Rossendale magistrates of having sold a pound of butter "not of the nature, substance, and quality demanded by the purchaser," as it contained 19·30 per cent. of water, contrary to Section 6 of the Food and Drugs Act, 1875. Two methods of making butter are used in Ireland, in one of which it is treated with a strong solution of salt, which is called "brining." By this method it is very difficult to bring the quantity of water left in the butter below 20 per cent., so that if pickling, or "brining," be a "right and necessary process," the 19·30 per cent. present in this case was "unavoidably mixed in the process of preparation." It seems that all "Irish" butter, as popularly understood, is made in this way, while Kiel, or "Irish creamery" butter, is made with dry salt. The former is made to keep for some time, while the latter, less salted, is used as fresh butter. The case was an attempt to question the system of "pickling" as against "dry-salting," with a view to bring about a uniform standard of 15 or 16 per cent. or thereabouts of water as an outside limit in all butter exported from Ireland. "Irish" butter comes into England in enormous amount, of which Lancashire takes a large proportion, and it is said that a standard lower than 20 per cent. would imperil this trade. One solution is that there should be two standards, one for each class of butter. The question of fraud scarcely enters, for "Irish" is known to be lower in quality than Kiel or "Irish creamery" and sells at a lower price. It is very largely used by the working classes in Lancashire and would probably be preferred to the less heavily salted Kiel or creamery butter. The decision of the magistrates was that the conviction should be quashed and their opinion was unanimous "that the question of fixing a presumptive standard or standards merits the early attention of the Board of Agriculture."

Proposed Jewish Hospital.

The conference on the proposed Jewish hospital for Manchester was resumed yesterday under the presidency of Councillor C. Dreyfus. Two gentlemen (the Rev. Dr. Salomon and Mr. N. Laski) said that owing to the holidays no reply had been received from the hospital authorities, but the Rev. Dr. Salomon was almost sure that it would be a favourable one. He wished to bear testimony to the kind treatment the Jewish patients received "at the hands of the doctors and nurses." It was thought by some that the committee was not representative, and it was agreed to invite repreenatives of the Jewish congregations and charitable committees in the city to discuss "the various suggestions for attaining the desired end." The chairman thought that repeated adjournments did no good, but he hoped that in a fortnight or three weeks they would arrive at some definite conclusion. The feeling on the whole seems rather in favour of a Jewish hospital than to make use of those hospitals now existing.

Milk and Enteric Fever.

At the meeting of the Salford Council on Jan. 2nd it was stated in a report from Mr. C. H. Tattersall that there had

been 19 persons suffering from enteric fever within a fortnight in the Regent-road district, all of whom had been consuming milk supplied by one dealer. The farms from which the milk had come were visited by the medical officer and the veterinary inspector and found free from disease; but the milkman had been ill, and though his illness was said to be pneumonia it was extremely suspicious, and in Mr. Tattersall's opinion this was the source of infection. Instructions had been given to "close the milkhouse unless the dealer consented to be removed into the country within 24 hours so that his premises might be thoroughly disinfected, and also that various sanitary alterations be made to the back premises." These precautions were no doubt good as regards Salford, but if the man were still a source of infection he would be an undesirable guest in "the country," and it would have been better that he should have been sent to a hospital where isolation could have been practised. If, on the other hand, he had ceased to be a source of infection, although the disinfection of the premises was right it does not seem that his removal was required.

"Friendly Society Notes."

In an article on friendly societies from "A Special Correspondent," which appeared in the *Manchester Courier* of Jan. 3rd, "the difficulties between the medical profession and the friendly societies" are said to "seem as far off a settlement as ever." It is interesting to see how the question strikes a lay person, evidently an admirer of the societies. He says that representatives on the "board of conciliation" were long ago appointed, "but the medical profession, which at first responded so readily, has shown a curious dislike to accepting any practical scheme of considering disputes and removing difficulties," which the writer thinks unfortunate for the profession, "as it cannot break down the system of combination, even if it were desirable to do so," and that it would be better to accept the inevitable. He says the profession recognise that combination secures, by small weekly payments for medical attendance, large sums "which otherwise would be spent in an entirely different manner." Does this mean that if medical attendance were not paid for in this way it would not be paid for at all? He then goes on to say that the profession, "recognising this, and being ready to profit by it, ... at the same time wish to pick and choose and say which of those who have paid shall receive the benefit." This apparently refers to the question of wage limit or to there being some arrangement to prevent the rich man paying his paltry pence into the treasury and insisting that he shall receive the medical benefits intended for those who cannot pay the modest charges of the general practitioner. Some such arrangement for preventing an abuse of the system seems only equitable, but this "Special Correspondent" says that "so long as this attitude continues to be adopted by the medical profession so long will the difficulty continue. There may be abuses in connexion with the existing system, but they are trifles light as air when put in the scale against the advantages—advantages shared alike by the medical profession and the general community." A fine passage no doubt from the journalistic standpoint, but the writer will not find many medical practitioners enthusiastic about the advantage of attending the well-to-do shopkeeper or employer of labour for less in many cases than a penny a week as his individual payment.

Long Service.

On Dec. 20th, 1900, at the meeting of the Northwich Board of Guardians a letter was read from Mr. Thomas Moreton stating that after 41 years' service as district medical officer, vaccination officer, and medical officer to the workhouse he was, owing to ill-health, obliged to resign these offices. The resignation was accepted with regret and a resolution was passed thanking Mr. Moreton for his services in the interests of the public.

Manchester Volunteer Medical Staff Corps: Further Increase of Establishment.

Information was received at headquarters on Jan. 7th that three additional transport companies were to be formed in connexion with this corps. This will necessitate the enrolment of three officers and 120 non-commissioned officers and men in addition to the two transport companies already formed. A special staff sergeant instructor from the Army Service Corps has been attached to the corps by the War Office to carry out all the necessary instruction required. The object of these companies is to provide for the driving of the ambulance wagons and service wagons which are part of the equipment of a bearer company and for the proper care of horses, wagons, harness, &c., which are used in the conveyance of wounded and sick soldiers. The training is full of interest and each member who joins goes through a complete course of riding, driving, and stable management. Many young men in Manchester and neighbourhood will no doubt avail themselves of this opportunity of learning everything connected with horses, and probably numbers of candidates will apply during the next few days at the headquarters of the corps at 336, Chester-road, Manchester, to obtain particulars.

Drink Tragedy.

An inquest was held on Jan. 7th by the city coroner concerning the death of a middle-aged woman who died on Jan. 4th in the Ancoats Hospital from the effects of severe burns. The report speaks of it as disclosing "a story of singular pathos," of the apparently ungovernable craving of the woman for drink, and of her employing her boy, 10 years of age, to fetch it for her. According to his narrative he was sent soon after daybreak on Dec. 3rd to pledge his father's Sunday clothes, for which he received 9*s*. His mother sent him seven or eight times for whisky, all of which she drank herself. It was her frequent practice to send him to pawn clothes and to fetch whisky with the proceeds. "He usually went for whisky on Saturdays and Mondays." After drinking the whisky she fell asleep before the fire and he went out to "play." An elder brother found her lying unconscious with her clothes in flames. She was taken to the hospital where she died. The publican denied that he served the boy, but the coroner believed the latter after carefully investigating the conflicting statements. This tragedy might have been averted if there were safe custody for habitual drunkards and if the selling of drink to young children were made penal. Nothing is said in the report about the husband, but what a picture the story gives of a wretched family life ruined by drink.

Arsenic in Beer.

Legal proceedings have been commenced in connexion with some of the cases of arsenical poisoning by beer.

Jan. 8th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh Royal Infirmary.

THE annual general meeting of the contributors to the Royal Infirmary of Edinburgh was held in the Council Chambers, Edinburgh, on Jan. 7th, Lord Provost Steel being in the chair. Mr. W. S. Caw, the clerk and treasurer, submitted the manager's annual report for the year ending Oct. 1st, 1900. The total number of patients treated in the hospital during the year had been 9569, as against 9694 in the previous year. The average daily number of patients was 701, as against 711, and the average daily number of children was 58. The average time each patient was under treatment was 26·7 days, this being exactly the average of the previous year. Of cases admitted Edinburgh sent in 4668, Leith 513, and the country 3733. There had been 768 deaths, and of these 218 took place within 48 hours after the patients' admission. In the medical and surgical out-patient departments 32,455 cases were treated, being an increase of 3016 on the previous year. The ordinary income amounted to £30,009 0*s*. 5*d*., as compared with £30,739 10*s*. 7*d*. for the preceding year. The ordinary expenditure amounted to £47,868 5*s*. 6*d*., being £3986 1*s*. 7*d*. more than in the previous year. The entire ordinary expenditure during the year (including the cost of out-patient departments) per average occupied bed was £68 5*s*. 8½*d*., or £6 11*s*. 4*d*. more than in the previous year. The legacies and donations of £100 and upwards received during the year amounted to £69,314 12*s*. 8*d*. In this total was included the munificent donation by Mr. Thomas Aitken of Nivingston of £40,000, in commemoration of which the managers had named a ward. The capital expenditure amounted to £21,038 15*s*. 10*d*. in all, the principal items being £14 599 17*s*. 11*d*. from the extension fund for the new pavilions, and £4260 8*s*. 1*d*. from the general fund for reconstruction of kitchen and stores. In addition to the "Aitken" ward two wards in the new Gynæcological Pavilion were named the "Yule" and

the "Waddell" wards respectively, to commemorate the names of Mr. J. L. B. Yule and Mr. Peter Waddell, who both left large bequests to the institution. At the beginning of the year the nursing staff numbered 184, and at the close of the year 195. The average for the year was 192. There had been 670 applications for admission, against 578 in the previous year. It was interesting to note that the matrons of 39 Scottish institutions had received their training in Edinburgh Royal Infirmary. The draining and plumbing of the older part of the infirmary were being completely renewed according to a scheme elaborated by the burgh engineer. The total number of patients admitted to the convalescent home at Corstorphine during the year had been 1321. The daily average was 70·1. The managers regretted to report that the income of the convalescent home failed to meet the expenditure by the considerable sum of £1225 4*s.* 8*d.* The adoption of the report was formally moved by the Lord Provost and seconded by Mr. Patrick Blair, W.S. The following were elected managers to represent the contributors for the ensuing year: Dr. Claud Muirhead, Sir Andrew Macdonald, Mr. Patrick Blair, W.S., Colonel M'Hardy, C.B., Miss E. S. Haldane, and Miss Agnes C. Imlach. The meeting was adjourned for a fortnight to receive the report of the committee of contributors.

The Western Infirmary, Glasgow.

There are some indications that the Western Infirmary, Glasgow, will ere long be extending its borders. At a recent meeting of contributors it was announced that nearly 300 patients were waiting for admission, a state of matters which must necessarily lead the directors to contemplate a considerable increase in the number of beds. The directors are at present engaged in raising funds for the rebuilding of the out-patient department. These proposals, together with the schemes for providing increased laboratory accommodation at the university and for the building and equipment of a new technical college, offer abundant opportunities for the liberality and patriotism of the inhabitants of Glasgow and the west of Scotland.

New Salmon Hatchery for the Tweed and Teviot.

In consequence of a movement which was started two years ago a salmon hatchery for the river Tweed has just been erected. The hatchery, which is fitted with all the modern improvements, is situated at East Learmouth, about a mile from Cornhill-on-Tweed, on an excellent site which has been granted by Earl Grey. The management of the hatchery is under the supervision of Mr. F. J. Douglas, Springwood Park, Kelso, and Mr. George Grey of Millfield. The hatchery is a private undertaking with which the River Tweed Commissioners have no official connexion, and the cost of which has been subscribed to by every river proprietor from Torwoodlee to Tillmouth. The building is 48 feet long by 20 feet wide and seven feet high inside. It is fitted with 12 boxes capable of holding in all 18 grilles, so that the 12 boxes combined have a capacity for about 300,000 salmon ova. If the fry were hatched three times in a season the output would not fall far short of 1,000,000 salmon fry. The water-supply is carefully filtered before passing to the boxes. There is in the hatchery an impounding tank of 1100 gallons capacity for keeping the salmon in after capture until they are ready for spawning. The young fry will be kept until they are six months old. For this purpose six ponds are to be constructed 40 feet long by eight feet wide by four feet deep. There are those who think that fish-culture may play an important part from a medical point of view in the future.

Jan. 8th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Public Health of Dublin.

AT a meeting of the Dublin Sanitary Association held on Dec. 14th, 1900, the council noted that in the week ending Dec. 8th, only 17 cases of scarlet fever were notified in the borough of Dublin and the urban districts of Rathmines and Pembroke, while the admissions of scarlet fever cases to hospital were 17. This would imply that several cases escaped notification, as it is not likely that all the patients were sent to hospital. The corresponding figures in reference to measles, typhoid and typhus fevers, with diphtheria, seemed to point to the same conclusion. The council met again on Jan. 3rd, and, having received in the meanwhile many returns, observed that a wide diversity as to the diseases which are notifiable existed in the several districts which have adopted the Act. Thus Pembroke requires whooping-cough and measles to be notified, while Rathmines and Bray require neither of those, but Rathmines specifies dysentery. Such variations in the list of notifiable diseases seriously cripple the working of the Act. The Corporation of Dublin must soon consider the report of the Commission which sat in Dublin a year ago and advised—"That the duties of medical officer of health should no longer be discharged by the present 16 dispensary medical officers of health, but that in future those duties should be discharged by an assistant medical officer of health who should receive an adequate salary and who should give his whole time to the duties of his office." In the meanwhile, at a meeting of the municipal council held on Jan. 7th the chairman of the Public Health Committee moved the adoption of the report from that committee *in re* recommendations of the committee appointed by the Local Government Board of Ireland to inquire into the public health of the city of Dublin. The report, which was unanimously adopted by the committee, contained many recommendations in reference to the scheme for housing a large number of the labouring and poorer class, the regulation of tenement houses, the inspection of dairy yards, arrangements as to hospitals, &c. It was formally brought forward by the Lord Mayor and passed unanimously. A long discussion took place subsequently as to the adoption of Podewell's apparatus for the destruction of diseased meat so strongly recommended by the delegates recently sent out by the corporations of Dublin and Belfast to inquire into the system adopted in the larger continental towns. An amendment postponing the report for six months was carried. The council then addressed itself to the question whether tuberculosis should be included in the list of notifiable diseases. The Lord Mayor was strongly in favour of the proposal and remarked that although the notification of tuberculosis was not compulsory in England no city in England showed a record of 1000 deaths every year from that disease. Ultimately a suggestion to postpone the matter in order to acquire further information was adopted.

The Rainfall in Belfast.

The total rainfall for the year 1900 in Belfast was 40·07 inches, being 0·71 inch in excess of that of the previous year. In December there were only eight days on which rain did not fall and from the 23rd until the end of the month there was not a dry day, and on one day (Dec. 26th) 1·03 inches fell. The total amount of rainfall for December was 5·26 inches. These facts indicate that Belfast is one of the wettest places in the kingdom.

The Royal Victoria Hospital, Belfast.

A gentleman in Holywood, near Belfast, in gratitude for services received some years ago by his son when a patient in the Belfast Royal Hospital, has given property to the endowment fund of the Royal Victoria Hospital which will secure an annual rental for ever of upwards of £50. This is one of the largest gifts which the charity has yet received.

Death of James Ross Thomson, L.R.C.P. Edin., C.M. Glasg.

I regret to announce the death, at the advanced age of 84 years, of Mr. J. R. Thomson, which took place at his residence, Church-street, Ballymoney, on Jan. 7th. He had practised almost all his life in Ballymoney, where he was medical attendant to the union workhouse. He was buried on Jan. 9th. Enjoying a large *clientèle*, Mr. Thomson was greatly liked both by rich and poor. He was compelled by advancing years to retire a few years ago from his workhouse duties, in which he was succeeded by his nephew.

Scarlet Fever in Portadown.

An epidemic of scarlet fever is prevailing in the urban district of Portadown. Mr. J. L. Rowlett, medical officer of health, advised the Portadown District Council that a suitable disinfecting chamber should be provided to sterilise the clothing, and that all persons suffering from the disease should be isolated in an infectious hospital; but to this course both the parents and apparently (from the discussion at their meeting on Jan. 4th) some of the Portadown councillors object.

Jan. 8th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Sanatorium of Angicourt.

IN my last letter I mentioned that this sanatorium after having taken 14 years to build was just about to be opened. The cost has been enormous owing to the old-fashioned notions of the architects, for instead of building lightly constructed edifices of brick and iron in isolated blocks after the methods approved of by modern hygienic science, they have constructed a veritable barrack in stone which will only hold a small number of patients, which has taken an interminable time to build, and which represents many persons dead from tuberculosis who succumbed while they were waiting for the finishing of the building where they hoped to be treated. Although the sanatorium has at present no patients, yet for the last two years it has rejoiced in the possession of a director and this official has recently sent an appeal to the Hospitals Medical Society praying its members to formulate the conditions of admission to the sanatorium and whether its benefits are to be reserved for quiescent cases of tuberculosis or whether acute cases are to be admitted. A committee of the society, composed of M. Faisans, M. Merklen, M. Mosny, M. Rendu, and M. Siredy, have reported on the matter and without entering into the question of acute or quiescent cases have drawn up the following rules. 1. The Angicourt sanatorium shall be open to indigent inhabitants of Paris afflicted with pulmonary tuberculosis, but whose lesions are presumably curable. 2. No patient shall be admitted to the sanatorium without his furnishing a sanitary record (*dossier*) drawn up by his medical attendant showing clearly his family and personal history, a history of his tuberculosis, and a complete daily clinical record extending over at least eight consecutive days setting out details of his pulmonary lesions, his rectal temperatures, his pulse, his respiratory condition, an analysis of his urine, his weight, and the results of a microscopical examination of his sputa, including the results of a search for bacilli carried out in more than one method. 3. All these *dossiers* shall be examined periodically by a medical committee appointed for that end by the Hospitals Medical Society. The committee further say that records corresponding to the sanitary *dossiers*, which shall be drawn up during the stay of the patient in the sanatorium will allow of the medical director forming an opinion of the efficacy of the curative properties of the sanatorium treatment and consequently of the advisability or the reverse of keeping up the sanatorium. This report of the committee was carried by the society unanimously. It is evident that if the authorities succeed in getting drawn up both the sanitary *dossiers* and the records illustrative of the patient's condition while in hospital there will be a grand opportunity for making an experimental study of the results of treatment, but it is much to be feared that in the case of many of the patients who will belong to just that very poor class who do not consult a medical man with regularity, it will be impossible to obtain sufficiently accurate details of their condition, for they will not have been under observation for a sufficiently long time. The Hospitals Medical Society should have gone a step further and arranged for a sort of permanent consulting institute at which patients might apply with regularity and so have their *dossiers* accurately drawn up.

The Alcohol Question in Parliament.

The Chamber of Deputies and the Senate have just completed the draft of a Bill which has been for a long time in preparation with regard to the trade in alcoholic drinks. The debates on the matter were interminable and showed in a cruel light the pretensions of the trade, who did not hesitate to poison a whole country and to destroy their fellow-creatures if only they could be assured of a sale for their goods. Under such conditions the crusade against alcohol which certain philanthropists started and which was warmly supported by the medical profession presented almost insuperable difficulties. How try to diminish the consumption of alcoholic drinks in France when a great part of the population gets its livelihood by making the same and elects those members who form a majority of the Chamber? How restrict the number of drink-shops when it is by these that the deputies are practically elected? How hope to restrain the sale of alcohol by fiscal laws when even the new law respects the *privilège des bouilleurs de cru*—i.e., the right of distilling alcohol without further taxation—which every proprietor who makes wine or cider from his own vineyard or orchard possesses? The fraud to which this right gives rise is most extensive and it is calculated that the revenue loses 400,000,000 francs per annum owing to the frauds which this right brings in its train. It is quite common to see large landowners distil alcohol not only from the produce of their own lands but also from wine or cider surreptitiously brought in. Besides, the inspectors whose duty it is to prevent these frauds are generally powerless owing to the amount of electoral corruption which exists. A too zealous agent runs the risk of being recalled by the deputy for his district whose election is generally in the pocket of the large landowner. Medical men and hygienists have at least done their part as regards the thousand-and-one varieties of alcoholic drinks sold under the name of "amers" and "apéritifs" which play such a large part in the alcoholic intoxication of France. Many have demanded that these preparations should be ruinously taxed, but the deputies, with the fear of the drinkshop before their eyes, have not dared to accept the proposals. A Socialist deputy, however, M. Vaillant, had the ingenious idea of asking that the sale of those alcoholic drinks which the Academy of Medicine had definitely pronounced to be harmful to the public health should be interdicted, a demand which the deputies dared not refuse, and hence will start a far-reaching reform if the Minister concerned has only the courage to carry out the provisions of the Bill. M. Vaillant persisted in his campaign, for when the Bill after having passed the Senate came down to the Chamber of Deputies a second time for amendment M. Vaillant complained that the Minister in charge of the Bill had not been sufficiently categorical; and he succeeded in getting the Chamber to pass a resolution that the Government from henceforth should get the Academy of Medicine to declare that *liqueurs apéritifs* and other alcoholic drinks containing essences were dangerous to the public health, so that their manufacture, circulation, and sale should be put a stop to.

Deaths of Medical Men in Paris.

Last week there occurred the deaths of several well-known medical men. Dr. Béranger-Féraud, formerly *médecin en chef* to the navy and President of the Conseil Superieur de la Marine. He left a number of valuable works on the subjects of the pathology of tropical diseases and on pathology from the standpoint of a naval surgeon.—The death is also announced of Dr. de Beauvais, one of the oldest of the Paris practitioners, who died at the age of 79 years. He left a valuable collection of clinical notes on cases and on practical therapeutics and the reputation of a high-minded and courageous man. He was formerly President of the Medical Society of Paris and chief surgeon to the prisons. In 1848, when *interne* at the ambulance station of St. Lazare, he nearly died from the effects of septicæmia contracted during the performance of an operation. He worked magnificently through the cholera epidemic of 1849 and was at the early age of 28 years made a Chevalier of the Legion of Honour as a reward for his conduct. In 1871, while serving as chief medical officer at Mazas, he was very nearly being shot by the Communists for being too kind to the unfortunate hostages.—The deaths are also announced of Dr. Duclos of Tours, professor of clinical medicine at the medical school of that city; of Professor Dubreuil, professor in the Faculty of Medicine of Montpellier and formerly *professeur agrégé* in the Paris Faculty of Medicine; and last, and most distinguished of all, of Professor Potain.

Jan. 8th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Professor Grassi and the Mosquito-Malaria Theory.

PROFESSOR GRASSI contributes some "Historical Notes on the Recent Discoveries regarding the Transmission of Malaria" to the *Policlinico* of Dec. 29th which are evidently intended as a reply to Major R. Ross's recent letter to that journal on the question of priority in the mosquito-malaria theory.[1] After enumerating the results obtained by Major Ross in his experiments with human malaria in 1896–97–98 and stigmatising them as either erroneous, inconclusive, dubious, or positively misleading, he passes to Major Ross's discovery—which he claims to have himself made with Feletti in 1890—

[1] THE LANCET, Dec. 8th, 1900, p. 1684.

of the evolution of proteosoma in the body of the gray mosquito. For this beautiful demonstration, so much admired by other authors, Professor Grassi has no word of praise, only remarking that from a zoological point of view the figures and description given by Major Ross are quite incomprehensible. He also refuses to admit that it has more than a doubtful value as a guide to what happens in human malaria, since parasites very similar to one another may have totally different life-cycles. As examples, he cites the filaria medinensis which, unlike other filariæ, does not propagate itself through the mosquito; the parasite of bovine malaria which is conveyed through the larvæ of the tick to its new host; and one of the two parasites of bird malaria which it has not been found possible to cultivate in the mosquito. Professor Grassi quotes from a note by Major Ross in the *Annales de l'Institut Pasteur*, dated Dec 31st, 1898, with the purpose of showing that Major Ross himself did not at that time regard his discovery as settling the question, but on the contrary, considered that much remained to be done before a solution could be arrived at. He next proceeds to enumerate the questions in regard to malaria which, in his view, Major Ross's experiments left unsolved: (1) whether the theory of the propagation of malaria by means of mosquitoes was borne out by facts; (2) which species of the many included under the name "mosquito" was capable of propagating human malaria; (3) whether the parasites of human malaria had a life-cycle corresponding to that of the parasite of bird malaria; (4) whether, as appeared probable, man was only an accidental host of the malarial parasite which reproduced itself indefinitely in the mosquito; (5) whether man became infected only through the bites of mosquitoes; (6) whether the new experimental data explained the empirical knowledge which we possess regarding human malaria; (7) whether other mammals acted as the hosts of the parasite of human malaria; and, lastly (8), how the facts discovered by Major Ross ought to be interpreted zoologically so as to reconcile them with those already known about other protozoa. Reverting to his own work and to that done in collaboration with Bignami and Bastianelli, Professor Grassi claims to have settled many of these questions, asserting that he was the first to proclaim the intimate relationship between the presence of the anopheles claviger and the occurrence of malaria; that to him, along with Bignami, is due the credit of experimentally inoculating the human subject with malaria by means of mosquito bites; and that to him also belongs the merit of having demonstrated by exhaustive observations and experiments, conducted with the help of Bignami and Bastianelli, the entire life-history of the human malarial parasite. He adds to these many other points which he claims to have elucidated in regard to the natural history of the parasite and the etiology of the disease, and he concludes by reiterating an assertion that our knowledge of the mode of transmission of human malaria, which he now regards as complete, at any rate for Italy, is the result of researches begun by himself, continued with the assistance of Bignami and Bastianelli, and completed by himself alone.

Legislation for the Supply of Quinine.

In the light of recent discoveries it has become evident that one of the most efficient measures for the prevention of malaria must lie in the cure of existing cases of the disease, since it is chiefly, if not entirely, from these that fresh individuals are infected by the mosquito. Unfortunately, the difficulty of procuring that sovereign remedy in malaria, quinine, has hitherto proved a great obstacle in the way of carrying out this important method of prophylaxis in many of the malarious districts of Italy, where there are often no drug stores, or where, if such exist, the quinine is often very impure, or is so high priced as to be beyond the reach of the poor labourers who most of all require it. Frequent attempts to provide against this difficulty by creating a Government monopoly have been made by Parliament from time to time, but hitherto without success, owing to the determined opposition of those interested in the sale of quinine. Now that science has been able to show the cure of malaria to be a prophylactic measure of the highest public importance every obstacle has been overcome, and a Bill has been framed which it is hoped will fully meet the necessities of the case. By this law it will become the duty of the Government to provide for the sale of quinine of the best quality at a very moderate price throughout the whole country. Where pharmacies or dispensaries are already established the sale will be confided to these, but where such do not exist it will be entrusted to the salt and tobacco shops (which are Government monopolies), or failing these to any suitable person available. The Superior Sanitary Council will determine the form and must approve the quality of the quinine, which it is proposed to supply in three-grain tabloids put up in hermetically sealed tubes, each tube to contain 10 tabloids. The preparations recommended are the hydrochlorate, the sulphate, and the bisulphate. The price of the hydrochlorate to the public must not exceed 40 centesimi (4*d*.) per tube, and that of the sulphate and bisulphate 32 centesimi per tube. No other salts of quinine must be sold except by a chemist, and the prices of these must be so regulated as to correspond with the tariff laid down under this law. Although the price thus fixed is low, it leaves a margin for profit, and the law provides that the resulting fund shall be applied to the purpose of combating the causes of malaria. A mixed commission of unpaid members selected from both Houses of Parliament and from the different governmental departments interested will administer this fund to the best advantage. The Bill embodying these provisions passed the Chamber of Deputies on Dec. 11th, 1900, and has already gone to the Senate, which it is hoped will approve of the measure as it stands.

Jan. 4th.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

The International Sanitary Board.

IN my last letter I gave your readers some details of the difficulties which have arisen in connexion with the International Sanitary Board owing to the death of Dr. Vitalis, the inspector adjoint. There are at present three persons who have been appointed to fill this post—namely, Dr. Duca Bey, who has been appointed by the Superior Sanitary Council; a former custom-house official who is not a medical man, and who has been appointed by the Turkish Government without salary; and thirdly, Dr. Eiterer, also appointed by the Turkish Government, to whom a salary will be paid by the Ministry of Finance. The appointment, whoever gets the post, will have to be confirmed by the Sultan. Owing to the Turkish Government having infringed the rights of the Sanitary Council by appointing one who is not a medical man, the Ambassadors have withdrawn their delegates to the Council. The conflict is particularly unfortunate at the present time owing to the outbreak of an epidemic at Smyrna, details of which follow.

Alleged Plague in Smyrna.

A very fatal disease, the nature of which is not definitely ascertained, has appeared in the village of Thomaso, near Cordelio, in the vicinity of Smyrna. The first patient was a man who suddenly fell ill in Smyrna during the first week of December, went home to his relatives in Thomaso, and died eight days after the beginning of the illness. Other cases soon occurred in the village and by Jan. 2nd there had been in three families 12 attacks with 11 deaths, the patient from Smyrna not included. In most instances the diagnosis was pneumonia. A long report on the circumstances has been sent to Constantinople by Dr. E. F. Mizzi, *médecin sanitaire* of Smyrna, pointing out that there have been no symptoms of implication of the lymphatic system, so that in the absence of bacteriological examination there was nothing to suggest plague, and arguing that the disease was probably infectious pneumonia due to "*grippe maligne*." A bacteriologist from Constantinople arrived in Smyrna on Jan. 2nd, but no examinations of the above-mentioned cases could be made, as all the deceased had been buried. On Jan. 3rd, however, a man who had been attacked with illness in Smyrna was found to have an axillary bubo and the plague bacillus was discovered on direct microscopic examination.

Poisoning Mischance at a School.

During the evening classes held at one of the schools at Beylerbey all the pupils were poisoned by the fumes from a charcoal brazier which had been lighted to heat the classroom. None of the cases, however, was attended with fatal results.

Assassination of a Medical Man.

A few weeks ago Dr. Saltellario, a well-known physician at Gumendjeh, near Salonica, was called out to see a patient, and on his way he was shot from behind, the bullet entering under his shoulder and passing through the

chest to the opposite lung. He was taken back to his house, where he is being attended by Salonica physicians. The assassins have been arrested, among them, I am sorry to say, a Dr. Tartchieff, a Bulgarian physician who is an affiliated member of the Bulgaro-Macedonian Society. Similar outrages have occurred in Bitolia, but there the assassins were not arrested.

Jan. 4th.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At the primary examination held recently the following candidates passed in the subjects indicated:—

PART I.

Biology.—C. H. Colley, Royal Free Hospital; and J. G. Lewis, Cardiff.

Chemistry.—E. C. Curtis, Aberdeen; F. G. Dobson, Leeds; F. W. March, Durham; W. B. Skelton, Guy's Hospital; and P. B. Whitington, London Hospital.

Materia Medica and Pharmacy.—R. S. Dollard, Royal College of Surgeons, Ireland; K. Knowles and K. A. Platt, Royal Free Hospital; W. B. Skelton, Guy's Hospital; M. C. Vivian, Royal Free Hospital; and C. Watson, Westminster Hospital.

PART II.

Anatomy.—J. Bromley, Guy's Hospital; J. Jones, Manchester; K. Knowles, Royal Free Hospital; D. J. Lewis, London Hospital; C. G. Martin, St. Bartholomew's Hospital; H. G. Peel, Leeds; K. A. Platt, Royal Free Hospital; G. H. Rains, Bristol and Westminster Hospital; A. Rogers, Cardiff; C. C. Rushton, Manchester and University College Hospital; D. A. Stepney, Royal Free Hospital; M. B. Taylor, Guy's Hospital; J. M. Wall and A. L. Walters, St. Thomas's Hospital; and J. S. Ward, Sheffield.

Physiology.—J. Bromley, Guy's Hospital; J. Jones, Manchester; K. Knowles, Royal Free Hospital; D. J. Lewis, London Hospital; E. H. McMahon, Charing-cross Hospital; C. G. Martin, St. Bartholomew's Hospital; S. Northwood, Birmingham; C. H. Osmond, Glasgow; H. G. Peel and W. V. Pegler, Leeds; A. Rogers, Cardiff; C. C. Rushton, Manchester and University College Hospital; M. B. Taylor, Guy's Hospitals; A. L. Walters, St. Thomas's Hospital; J. S. Ward, Sheffield; and S. H. R. Welch, Charing-cross Hospital.

UNIVERSITY OF OXFORD.—In a congregation holden on Dec. 17th, being the last day of Michaelmas Term, the following degrees were conferred:—

M.B.—Edmund H. Hunt, Balliol; Herbert S. French, James E. H. Sawyer, and William V. Shaw, Christ Church; Lawrence H. C. Birkbeck, Trinity; Vincent S. Hodson, Marcon's Hall.

CORONERS' INQUIRIES.—At a meeting of the Somerset County Council held on Jan. 1st a communication was read from Dr. R. L. Meade-King on behalf of the West Somerset branch of the British Medical Association, asking that a fee might be paid for giving information to coroners when no inquest was held. It was decided that a reply should be sent stating that the county council had no power to pay any such fee.

MEDICAL MAGISTRATES.—Mr. J. C. Davies, L.R.C.P. Lond., M.R.C.S. Eng., D.P.H. Durh., of Ruabon, Denbighshire, has been appointed a magistrate for the county of Denbigh.—Mr. Harold J. Hutchens, L.R.C.P. Lond., M.R.C.S. Eng., of Colmslie Hospital, Bulimba, has been appointed a justice of the peace within the Colony of Queensland.—Mr. Norman Hay Forbes, F.R.C.S. Edin., of Tunbridge Wells, has been appointed a magistrate for the county of Kent.

SHORTHAND FOR MEDICAL STUDENTS.—The Society of Medical Phonographers offers for competition among registered medical students in the United Kingdom a first and a second prize, of the value of £5 and £3 respectively, for proficiency in the groundwork of phonetic shorthand (phonography). The examination will have for its chief object legibility, accuracy, and neatness of writing rather than speed, and will consist of two simple tests: (*a*) the ability to read at sight a passage of a few hundred words printed in a freely vocalised style of shorthand; and (*b*) the ability to write shorthand at a low rate of speed (60 words per minute) and to produce a correct longhand transcript of the passage so dictated. In this test the quality of the shorthand note as well as the correctness of the transcript will be taken into account. The passage used in each test will consist of some straightforward medical matter. The examination will be held early in May, 1901, simultaneously in London, Edinburgh, and Dublin and at any provincial medical school in the United Kingdom at which not fewer than three candidates shall offer themselves. Intending candidates are requested to send in their names at as early a date as possible to "The Examination Secretary, care of Messrs. Pulman and Sons, Thayer-street Manchester-square, London," who will inform them in due course as to the precise date and place of examination at each centre. There are no examination fees. The latest date for receiving names will be April 15th.

BRITISH MEDICAL BENEVOLENT FUND.—Mr. Edward East, of 26 Linden-gardens, W., is receiving and distributing clothing of all sorts. He desires us to state that the fund particularly wants quantities of warm clothing and blankets for men, women, and children.

MEMORIAL TO A MEDICAL MISSIONARY.—On Sunday, Jan. 6th, a memorial tablet to the late Charles Watt Morrison and Samuel Donaldson Cowan, M.A., M.B., C.M., was unveiled at the Young Men's Christian Association, Kirkintilloch, by Mr. R. Hudson, J.P. The tablet bears the following inscription: "Charles Watt Morrison, died at New York, U.S.A., Dec. 28th, 1897, aged 32. Samuel Donaldson Cowan, M.A., M.B., C.M.; died at sea, Sept. 14th, 1899, aged 29. In loving memory of Charles Watt Morrison, missionary teacher, and Samuel Donaldson Cowan, M.A., M.B., C.M., medical missionary, loyal and faithful members of Kirkintilloch Y.M.C.A., who went forth at the call of God to labour among the heathen at Old Calabar, West Coast of Africa. 'Good Soldiers of Jesus Christ.'"

FREEMASONRY.—The *Rahere Lodge, No. 2546.*—A meeting of this lodge was held at Frascati's Restaurant, Oxford-street, W., on Jan. 8th, the W. M. Bro. Walter Gripper in the chair. Messrs. L. E. Whitaker and H. S. Beadles were initiated into Freemasonry, and Bro. R. H. Wellington was raised to the third degree by the W. M., whilst Bros. Hepburn and Bokenham were passed to the second degree by Bro. Phin. S. Abraham, S.W. W. Bro. Brodie was nominated a steward at the forthcoming festival of the Royal Masonic Benevolent Institution and a grant of 10 guineas was made from the lodge funds in aid of this charity.

BOOKS, ETC., RECEIVED.

ADLARD AND SON, Bartholomew-close, London.

King's College Hospital Reports: being the Annual Report of King's College Hospital and the Medical Department of King's College. Vol. vi. (Oct. 1st, 1898, to Sept. 30th, 1899). Price 7*s.* 6*d.*

BAUERMEISTER, F., Glasgow.

Hand-Atlas der Hirn- und Rückenmarksnerven. Von Professor Dr. C. Hasse. 1900. Price 12*s* 9*d.*

Kursus der Pathologischen Histologie mit einem Mikroskopischen Atlas. Von Dr. L. Aschoff und Dr. H. Gaylord. 1900. Price 18*s.*

Atlas der Anatomie der Hirnhöhle. Von Dr. A. Hartmann. 1900. Price 16*s.*

Bestimmung des Sehschärfe mittelst der Uhr. Von E. Praun. 1901. Price 1*s.* 6*d.*

Methoden der Praktischen Hygiene. Von Dr. K. B. Lehmann. 1901. Price 18*s.* 9*d.*

Verhandlungen des Congresses für Innere Medicin. Von Dr. E. Leyden und Dr. E. Pfeiffer. 1900. Price 12*s.*

Abnorme Charaktere. Von Dr. J. L. A. Koch. 1900. Price 1*s.* 3*d.*

Schwankungen der Seelenthätigkeiten. Von Professor Jacopo Finzi. 1900. Price 1*s.* 3*d.*

Mechanik des Hörens und ihre Störungen. Von Dr. Gustav Zimmermann. 1900. Price 3*s.*

Das Experiment. Vice Professor J. P. Pawlaw. 1900. Price 1*s.* 6*d.*

Ursache des Alters. Von Dr. M. Mühlmann. 1900. Price 5*s.*

Ursachen der Lungenkrankheiten. Von Dr. N. Ph. Tendels. 1901. Price 3*s.* 9*d.*

BERGMANN, J. F., Wiesbaden; and F. BAUERMEISTER, Glasgow.

Atlas Seltener Ophthalmoskopischer Befunde zugleich Ergänzungstafeln zu dem Atlas der Ophthalmoskopie (Erste Lieferung). Von Hofrath Dr. J. Oeller.

Atlas of Rare Ophthalmoscopic Conditions and Supplementary Plates to the Atlas of Ophthalmoscopy. By Hofrath Dr. J. Oeller. English Text by Thomas Snowball, M.A., M.B. Aberd. Part I.

CARRÉ, GEORGES, ET C. NAUD, Paris.

L'Alcool et l'Alcoolisme. Par Drs. H. Triboulet et F. Mathieu. 1900.

CASSELL AND CO., LIMITED, London.

The Sick and Wounded in South Africa: What I Saw and Said of Them and of the Army Medical System. By Mr. Burdett-Coutts, M.P. Price 1*s.* 6*d.*

CHAPMAN AND HALL, London.

What is Life? or Where are We? What are We? Whence did we Come? and Whither do We Go? By F. Hovenden, F.L.S., F.G.S., F.R.M.S. Second edition. 1899. Illustrated. Price 6*s.*

CHATTO AND WINDUS, St. Martin's-lane, London.

Herbert Fry's Royal Guide to London Charities. Edited by John Lane. 1900. Price 1*s.* 6*d.*

CHURCHILL, J. & A., Great Marlborough-street, London.

A Treatise on the Diseases of the Ear, including the Anatomy and Physiology of the Organ, together with the Treatment of the Affections of the Nose and Pharynx which conduce to Aural Disease. By T. Mark Hovell, F.R.C.S. Edin., M.R.C.S. Eng. Second edition. Price 21*s*.

Transactions of the Otological Society of the United Kingdom. Vol. i. Price 6*s*.

DAVIS, F. A., COMPANY, Philadelphia, New York, and Chicago.

Studies in the Psychology of Sex: the Evolution of Modesty; the Phenomena of Sexual Periodicity; Auto-erotism. By Havelock Ellis. Price $2 net.

ENKE, FERDINAND, Stuttgart; and F. BAUERMEISTER, Glasgow.

Atlas der Nasenkrankheiten. Von Hofrath Dr. Robert Kreig. Zweite Lieferung (Tafeln VII.-XI.). Mit Deutschen und Englischen Text. Price 6 marks.

GOVERNMENT PRINTING OFFICE, Washington.

Index-Catalogue to the Library of the Surgeon-General's Office, United States Army. Second Series. Vol. V.

KIMPTON, H., Furnival-street, Holborn, London.

Progressive Medicine: A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Vol. III. Price 12*s*. 6*d*.

LIPPINCOTT, J. B., COMPANY, Southampton-street, Covent-garden, London.

Appendicitis and its Surgical Treatment. By Herman Mynter, M.D. (Copenhagen). Third edition. 1900. Price 10*s*. 6*d*.

LONGMANS, GREEN AND Co., Paternoster-row, London.

Diseases of the Anus and Rectum. By D. H. Goodsall, F.R.C.S. Eng., and W. Ernest Miles, F.R.C.S. Eng. Part I. Price 7*s*. 6*d*.

MASSON ET CIE., Paris.

Maladies des Voies Urinaires. Par P. Bazy.

L'Insuffisance Hépatique. Par A. Gouget.

Analyse Biologique des Eaux Potables. Par Dr. J. Gasser.

REBMAN, Limited, Shaftesbury-avenue, London.

A Manual of Modern Surgery: an Exposition of the Accepted Doctrines and Approved Operative Procedures of the Present Time. By John B. Roberts, A.M., M.D. Price 21*s*.

SAUNDERS, W. B., AND COMPANY, London and Philadelphia.

A Text-book of Pathology. By Alfred Stengel, M.D. Third edition, revised. Price 21*s*.

Modern Surgery, General and Operative. By John Chalmers DaCosta, M.D. Third edition, revised and enlarged. Price 21*s*.

Modern Medicine. By Julius L. Salinger, M.D., and Frederick J. Kalteyer, M.D. Price 17*s*.

A Manual of Syphilis and the Venereal Diseases. By James Nevins Hyde, A.M., M.D., and Frank Hugh Montgomery, M.D. Second edition, revised and enlarged. Price 17*s*.

A Compendium of Insanity. By John B. Chapin, M.D., LL.D. Price 5*s*.

Atlas and Epitome of Gynecology. By Dr. Oskar Schaeffer. Edited by Richard C. Norris, A.M., M.D. Price 15*s*.

A Manual of the Diagnosis and Treatment of the Diseases of the Eye. By Edward Jackson, A.M., M.D. Price 10*s*. 6*d*.

SEIDEL, L. W., UND SOHN, Wien.

Beiträge zur Beurtheilung der Bedeutung der Vaginalen und Sacralen Totalexstirpation des Uterus für die Radicalheilung des Gebärmutterkrebses. By Dr. Hermann von Erlach and Dr. Hans R. von Woerz.

SPRINGER, JULIUS, Berlin.

Die Arzneimittel-Synthese auf Grundlage der Beziehungen zwischen Chemischen Aufbau und Wirkung. By Dr. Sigmund Fränkel. Price 12 marks.

THACKER, SPINK, AND Co., Government-place, Calcutta.

An Introduction to Materia Medica for India, including the Preparations of the British Pharmacopœia, 1898. By C. F. Ponder, M.B., C.M., and Dr. Hooper, F.C.S., F.L.S. Price Rs. 6.

VIGOT FRÈRES, Paris.

La Pratique du Massage. Conférences 1899-1900. Par de Frumerie. 1901.

WARD, LOCK AND Co., LIMITED, London.

Mrs. Beeton's Cookery Book. A Household Guide. New Edition. Price 1*s*.

University College, London. Calendar for Session, 1900-1901 (Taylor and Francis, Red Lion-court, London).—Magazines, &c., for January: Strand Magazine, Boy's Own Paper, Girl's Own Paper, Leisure Hour, Sunday at Home, Ludgate Magazine, Westminster Review, Contemporary Review, Friendly Greetings, Myra's Journal, Pall Mall Magazine, Windsor Magazine, English Illustrated Magazine, Knowledge, Humanitarian, Wide World Magazine, New Century Review, North American Review, Cornhill Magazine, Sandow's Magazine.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

BISSET, ERNEST, M.B., Ch.B. Aberd., has been appointed Assistant House Surgeon to the Royal Portsmouth Hospital.

CHARLES, J. R., M.B Camb., M.R.C.P., has been appointed Casualty Assistant Physician, General Hospital, Birmingham.

EICHOLZ, O., M.B. Oxon., L.R.C.P. Lond., M.R.C.S., has been appointed House Surgeon to the Hartlepools Hospital.

EVANS, E. A., L.R.C.P. Lond., M.R.C.S., has been appointed House Physician, Swansea Hospital.

FREKE, A. H., M.B., C.M. Edin., has been appointed Certifying Surgeon under the Factory Acts for the Diss District in the County of Norfolk.

HEYWOOD, T. W., L.R.C.P. Irel., M.R.C.S., D.P.H., has been appointed Certifying Surgeon under the Factory Acts for the Borough of Darwen.

INGLE, C. D., L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer, Langport Union, vice R. L. Hildyard.

JONES, ARTHUR WEBB, F.R.C.S. Eng., has been appointed House Surgeon to the Royal Portsmouth Hospital.

KIDD F. W., M.D., L.R.C.P., L.R.C.S. Irel., has been appointed Consulting Surgeon to the Coombe Hospital, Dublin.

NASON, J. J., M.B. Lond., M.R.C.S., has been appointed Honorary Consulting Surgeon to the Hospital, Stratford-on-Avon.

PALMER, W. M., M.R.C.S., L.R.C.P. Lond., L.S.A., has been appointed Medical Officer to the Linton District and Workhouse, vice J. A. Nealon, resigned.

PATCH, H. H. L., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer for the Third Sanitary District of the Hertford Union.

PERRY, S. H., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed Assistant Casualty Physician, General Hospital, Birmingham.

PHILLIPS, JOHN, M.B. Edin., has been appointed Physician to the Royal Portsmouth Hospital, vice E. J. Wallace.

SARJANT, F. P., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed District Medical Officer, Chorlton Union, vice B. J. Massiah, deceased.

TODD, D. B., L.R.C.P. Lond., M.R.C.S., has been appointed Public Vaccinator by the Westbury Rural District Council.

TURNER, PHILIP DYMOCK, M.D. Lond., has been appointed Honorary Medical Officer to the Royal Isle of Wight Infirmary and County Hospital.

WATT, T. M., L.R.C.P. Irel., M.R.C.S., has been appointed District Medical Officer, Glanford Brigg Union, vice J. Fearnley, resigned.

WHITTOME, ARTHUR, M.B., B.S. Edin., has been appointed House Surgeon to the North-Eastern Hospital for Children, Hackney-road, Shoreditch, London.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Church-street, Birmingham.—Assistant House Surgeon. Salary £60 per annum, with apartments and board.

BOLTON INFIRMARY AND DISPENSARY.—Senior House Surgeon. Salary £120 per annum, with furnished apartments, board, and attendance.

BRADFORD ROYAL INFIRMARY.—Dispensary Surgeon. Salary £100 per annum, with board and residence.

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY.—House Surgeon. Salary £80, with board and lodgings in the infirmary.

CHESTER GENERAL INFIRMARY.—Second Resident Medical Officer. Salary £80 per annum, with residence and maintenance in the house.

COUNTY ASYLUM, Gloucester.—Junior Assistant Medical Officer, unmarried. Salary £120 per annum, rising £10 yearly to £150, with board (no stimulants), lodging, and washing.

COUNTY ASYLUM, Shrewsbury.—Junior Assistant Medical Officer. Salary £130 per annum, rising by £10 a year to £150, with board, lodging, and washing.

DARLINGTON HOSPITAL AND DISPENSARY.—House Surgeon, unmarried. Salary £100 per annum, with board and lodging, and an allowance for cab hire.

DORSET COUNTY HOSPITAL, Dorchester.—House Surgeon. Salary £100, with board and residence.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark-bridge-road, London.—Senior Resident Medical Officer. Salary £70, with board and washing. Also Pathologist. Salary 100 guineas per annum.

FISHERTON HOUSE ASYLUM, Salisbury.—Assistant Medical Officer. Salary £150 per annum with board, lodging, and washing.

GENERAL HOSPITAL, Birmingham.—House Physician. Salary £70 per annum, with residence, board, and washing.

GENERAL HOSPITAL, Nottingham.—House Physician for two years. Salary £100, rising £10 a year to £120, with board, lodging, and washing.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, London.—Surgeon to the Out-Patient and Throat Department.

GUILDFORD UNION.—District Medical Officer and Public Vaccinator, Woking District. Salary £80 per annum and vaccination fees.

HAM GREEN FEVER HOSPITAL, Bristol.—Resident Medical Officer. Salary £150 per annum, with board, lodging, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, W.C.—House Surgeon. Salary £20, with board and residence in the hospital.

HOSPITAL FOR WOMEN, Soho-square, London, W.—Assistant Physician, also Assistant Surgeon.

HULL ROYAL INFIRMARY.—Junior Assistant House Surgeon for not less than one year. Salary £40, with board and lodging.

ISLE OF THANET UNION.—Medical Officer. Salary at the rate of £40 per annum, less deduction on account of superannuation.

LEICESTER INFIRMARY.—Second Assistant House Surgeon. Salary £80 per annum, with board, apartments, and washing.

LIVERPOOL DISPENSARIES.—Assistant Surgeon, unmarried. Salary £100, with board and apartments. Apply to the Secretary, Leith Offices, Liverpool.

METROPOLITAN BOROUGH OF BERMONDSEY.—Medical Officer of Health. Salary £500 per annum, rising to £600.

MILLER HOSPITAL and ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer for six months. Salary at the rate of £60 per annum, with board, attendance, and washing.

MONKWEARMOUTH AND SOUTHWICK HOSPITAL, Sunderland.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

NORTHAMPTON GENERAL INFIRMARY.—House Physician, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Salary £140 per annum, all found except board.

NOTTINGHAM PARISH INFIRMARY.—Assistant Medical Officer. Salary £160 per annum and furnished rooms.

QUEEN'S HOSPITAL, Birmingham.—Resident Surgeon for 12 months. Salary £50, with board, lodging, and washing.

ROYAL HOSPITAL FOR CONSUMPTION, Ventnor.—General Superintendent. Salary £300, rising by £20 per annum to a maximum of £400.

ROYAL SEA-BATHING HOSPITAL, Margate.—Assistant Resident Surgeon. Salary £52 per annum, with board and residence. Apply to the Secretary, Royal Sea-Bathing Hospital Offices, 30, Charing-cross, London.

ROXBURGH DISTRICT ASYLUM, Melrose, N.B.—Assistant Medical Officer. Salary £110 per annum, with board, lodging, and washing.

SCHOOL BOARD FOR LONDON—EVENING CONTINUATION SCHOOLS.—Lecturers and Examiners in First-Aid and Home Nursing. Qualified practitioners (men and women). Apply to the Clerk of the Evening Continuation Schools Committee, School Board for London, Victoria Embankment, W.C.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies for Certifying Surgeons under the Factory Acts at Ingleton, in the County of York; at Presteigne in the County of Radnor; at Chernside in the County of Berwick; at Caterham in the County of Surrey; at Staplehurst in the County of Kent; at Radstock in the County of Somerset; at Keyingham in the County of York; at Newtyle in the County of Forfar; at Lechdale in the County of Gloucester; at Syston in the County of Leicester; and at Brynmawr in the County of Brecknock.

TIVERTON (DEVONSHIRE) INFIRMARY AND DISPENSARY.—House Surgeon. Salary £80 and all found.

VICTORIA HOSPITAL, Burnley.—Resident Medical Officer. Commencing salary £90 per annum, with residence, board, and washing.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior Resident House Surgeon, unmarried. Salary £100 per annum, with furnished residence and board.

WEST HERTS INFIRMARY, Hemel Hempstead.—House Surgeon. The salary is £100 per annum, with furnished rooms, board, fire, light, attendance, and washing.

WEST RIDING OF YORKSHIRE.—Bacteriologist on the Staff of the County Medical Officer. Salary £250 per annum, rising by biennial increases of £25 to £400 a year. Apply to the Clerk to the Committee, County Hall, Wakefield.

WILLITON UNION Somerset.—Medical Officer and Public Vaccinator for the Stogursey District of the Union. Salary £80 per annum, with the extra fees for operations.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £110 a year, with board, lodging, and attendance.

Births, Marriages, and Deaths.

BIRTHS.

LAWSON.—On Jan. 4th, at Fortune's Well, Portland, Dorset, the wife of David J. Lawson, M.D., of a daughter.

PEDLEY.—On Jan. 6th, at Peckham-road, Camberwell, S.E., the wife of S. Edward Pedley, M.R.C.S., L.R.C.P. Lond., L.D.S., of a son.

SOUTH.—On Dec. 29th, at Bincleaves, Weymouth, the wife of Staff-Surgeon Henry Erskine South, of a son.

MARRIAGES.

GRAHAM—THOMSON.—On the 8th inst., at St. Pancras Church, by the Rev. Hugh S. Beard, M.A., Howard Graham, M.R.C.S., L.R.C.P., L.S.A., solicitor, third son of Thomas James Graham, Esq., of Edgbaston, to Laura May, second daughter of Major Chadwick Ayton Thomson (late of 20th Hussars), of Garfie'd, Southampton.

MACAULAY—RAMSDEN.—On Jan. 9th, at Hanover Chapel, Halifax by the Rev. J. W. Sims of Stockport, Donald J. Macaulay, M.D., L.R.C.P., L.R.C.S.E., L.F.P.S.G., of Ashfield, Queen's-road, Halifax son of the late John Macaulay of Benbecula, Inverness-shire. to Edith Kingston, only daughter of the late Alfred Ramsden, J.P., and of Mrs. Ramsden of Kingston, Halifax "At home," at Ashfield, Wednesday, Thursday, Friday, Feb. 13th, 14th, and 15th.

TAYLER—CLOTHIER.—On Jan. 1st, at St. Michael's Church, Highgate, George Padgett Tayler, M.B. Lond., eldest son of G. C. Tayler, M.D., of Trowbridge, to Ethel Mary, second daughter of Henry Clothier, M.D., of Highgate, N.

DEATHS.

COOKSON.—On Jan. 6th, at Nuneaton, Albert Nesfield Cookson, M.R.C.S., L.S.A., son of the Rev. Frederick Cookson, late Vicar of Stowupland, Suffolk, aged 61 years.

JACKSON.—On Jan 5th, at Woodford, Granada-road, Southsea, Alfred Jackson, M.D., aged 77 years.

LITTLE.—On Jan 6th, at Grafton House, Worthing, Edward Stephen Little, M.D., late of Wimbledon.

ROBERTS.—On Jan. 7th, suddenly, Charles Roberts, M.R.C.S., of 87, Belgrave-road, S.W., late of Dragonfield, Uxbridge, aged 65.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

HOSPITALS AND SCIENTIFIC RESEARCH.

THE National Anti-Vivisection Society has issued a list of the metropolitan hospitals which have among their medical or surgical officers one or more who hold licences from the Secretary of State for the Home Department authorising them to perform experiments upon living animals, together with a list of those which are "entirely free from any connexion with vivisection" as a "guide for the charitable in the disposition of their gifts and bequests." The *Times* makes the following witty comment upon the list. "The list, nevertheless, may possibly serve a useful purpose, the very reverse of that intended by its compiler. No reasonable person can doubt that the hospitals denounced by Mr. Coleridge are among the very best in existence. If intending donors will act in direct opposition to his suggestions, they will have the greatest attainable prospect of devoting their money to good and useful purposes."

ACTION UNDER THE DENTISTS ACT.

AN action of an involved character under the Dentists Act was heard at Bow-street Police-court on Jan. 4th. The British Dental Association prosecuted one named "Scott Russell." In the course of the evidence it appeared that the business belonged to Mr. W. B. Trick, whose name appeared on the Dental Register, and who carried on the practice under the name of "Scott Russell." Mr. W. B. Trick left the management in the hands of his cousin, Mr. W. H. Trick, who although qualified had not taken the trouble to get himself registered. The British Dental Association subsequently withdrew the summons. In the course of the evidence given it was shown that Mr. W. H. Trick had held himself out to be Mr. Scott Russell, while on a door-plate was the following announcement: "Scott Russell, late W. H. Trick, L.D.S. Eng., Dental Surgeon." The case seems to open up a most important point—namely, whether members of the medical and dental professions have the right to practise under other names.

ACRODYNIA.

To the Editors of THE LANCET.

SIRS,—Can you or any of your readers inform me where I could find a full account of the epidemic of "acrodynia" which occurred in Paris in the year 1828 and how it can be diagnosed from chronic arsenical poisoning? I am, Sirs, yours faithfully,

H. L. GORDON, L.R.C.P. & S. Edin., L.F.P. & S. Glasg.

Accrington, Jan. 8th, 1901.

*** Reference may be made to the following:—Clairat (L.): Considérations sur la Maladie Épidémique que règne à Paris, 4to, Paris, 1829. Miramond (P. R.): Sur l'Affection Epidémique qui s'est manifestée à la Caserne de la rue de l'Oursine dans le mois de Septembre, 1828, 4to, Paris, 1829. Rochette (J. G. F.): De l'Acrodynie, 4to, Paris, 1871. Rue (A.): Essai sur la Maladie qui a régné épidémiquement à Paris, depuis le commencement de l'année 1828, 4to, Paris, 1829. Vidal (E.) et Leloir (H.): Traité des Maladies de la Peau, article Acrodynie Paris, 1864. Stedman (T. L.): Twentieth Century Practice, vol. v., p. 835, London, 1896.—ED. L.

A HASTY CRITIC.

THE *Bristol Mercury* of Dec. 28th states that "that bitterly trade unionist journal THE LANCET is in a state of mind because a Bill is before the Italian Parliament to prevent any medical men practising who are not registered in Italy." Our contemporary adds that "we can see no 'malignant jealousy' in the course which the Italian Legislature is taking." THE LANCET is in the same position. Our correspondent in Rome used the words "malignant jealousy," we did not; and he applied them—we think aptly—to a few bigoted agitators and not to the Italian Legislature. We think that the *Bristol Mercury* might do us the honour of reading our columns before diagnosing our state of mind or calling us names. By the way, we see that the *Bristol Mercury* allows that "it is undoubtedly unfair to dispossess those who are already in practice." This is just what the Santini Bill proposes to do, and the commission appointed to examine the draft of this Bill has rejected an amendment of the Minister for Foreign Affairs, Visconti Venosta, proposing that existing rights should be respected.

THE MEDICAL MAN AND THE HERBALIST.

To the Editors of THE LANCET.

SIRS,—I shall be most happy for information with regard to the following case which has this day happened to me. I have been attending daily a little girl since the 31st ult. for an attack of measles with broncho-pneumonia as a complication. The little patient has made very satisfactory progress in every respect and has manifestly bridged over the worst phase of her illness since last Saturday. In the face of this improvement the father, who, I may say, is very averse to our "poisonous medicines," thought he could do no better than to write to a certain "herbalist" in whom he

has, and has always had, the most implicit confidence, with the natural result that the herbalist has already sent since last Friday 10 large bottles of some of his concoctions, and this without having seen the patient in any shape or form. The medicine was shown to me this morning by the mother of the child. Immediately this was told to me I declined to have anything further to do with the case, and have given the mother distinctly to understand that I cease my attendance from this date, and should anything of a serious nature occur she must look to the "herbal specialist" and not to me for a remedy.—I am, Sirs, yours faithfully,

Bexhill-on-Sea, Jan. 8th, 1901. R. DE MARTINI.

*** Our correspondent did right to withdraw from the case.—ED. L.

A FEARSOME STORY.

THE *Morning Leader's* "own correspondent" sends a fearsome story from Vienna, dated Jan. 1st, to the effect that a "strike of doctors has occurred at Cracow, owing to an attempt of the local authorities to introduce a legal tariff for medical fees." The medical men, we learn, declare that they will deprive the town of medical aid until they are allowed to charge their own prices. The staff of the hospital have refused to treat a child who had been run over by a tram-car and fearfully mangled, and the medical men are holding meetings at one of which a "doctor on the staff of the hospital said that if driven to desperation they would wreak a fearful vengeance by letting loose the germs of bubonic plague and other dread diseases in all parts of the town"—forgetting, apparently, in the foolish excess of wrath that a disease germ is as likely to attack a medical man as anyone else. This trick has already been played in fiction, and we think that the new author of the story has about as much claim as the author of "Les Morticoles" to veracity. The public are not likely, we trust, to give the slightest credence to such rubbish, but none the less we must protest against the dissemination of such libels upon our profession.

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—I shall be grateful if any of your readers can give me the address of a home in which a young man of good education, not of the working-class, suffering from advanced tuberculosis, pulmonary, renal, and intestinal, can be received on payment of about 30*s.* per week. He is not bedridden and not a case for a home for the dying, but I am anxious to get him settled in some place where he will be looked after when he is too ill to live in lodgings.

I am, Sirs, yours faithfully,

119, Upper Richmond-road, Putney, S.W., Jan 6th, 1901. J. GAY.

A.D. 2001.

THE *Scarborough Post* has issued a number dated Jan. 1st, 2001. The editor says that the object of the number "is to present a twenty-first century newspaper as we think it probably will be." Having read the very much "advance" copy of the *Scarborough Post* we congratulate our contemporary upon the imagination displayed, but if the world is to be as the *Scarborough Post* forecasts we are glad to think that in the natural course of events we shall not be alive in A.D. 2001. The prospect of electricity at 1*d.* per unit is fascinating, but the people of 2001 are to be annoyed by street music of a new and terrible sort, for the advent of the motor organ is prophesied. Segregation colonies will be established in the Pacific for the congenital criminals and other undesirables, and in these colonies the sexes will be divided so that the taint cannot be handed on to succeeding generations. Here we have the germ of a truly progressive idea, but humanitarianism would shrink from so drastic a course. Vagrants and tramps are to cease to exist in England in 2001, from which it can be guessed that England at that date is Tory and Protectionist, so that the soil will give occupation to all. We congratulate the editor of the *Scarborough Post* upon his idea, and we agree with him that a paper published in 1801 and composed entirely of a guess made at that date of what 1901 would be like, would be just now exceedingly interesting reading. An historical brochure, a flimsy attempt to forecast at the beginning of the nineteenth century the political conditions and relations of Great Britain and the European Powers at the end of the century, was, we believe, recently published and was comically incorrect in every way.

OPHTHALMIC STUDIES IN PARIS, BERLIN, AND VIENNA.

To the Editors of THE LANCET.

SIRS,—I should feel obliged if any of your readers would give me information on the following points:—(1) The cost, times, &c., of special courses on the eye for English-speaking medical men at Paris, Berlin, and Vienna; (2) the addresses of some good boarding-houses, not English, in these cities. I am, Sirs, yours faithfully,

Jan. 9th, 1901. HOMER.

IMPROVED ELECTRIC WIRING.

APROPOS of our remarks on the dangers of electric lighting in our issue of Nov. 24th, 1900, p. 1518, we have received from the Conduit and Insulation Company, Limited, of Ormond House, 63, Queen Victoria-street, E.C., a specimen of steel armoured insulating conduit. This consists of a steel tube ingeniously lined with insulating material. It is maintained that all electric wires should be inclosed in a tube of this kind and then absolute safety would be guaranteed. We ourselves have suggested that some such method seems to be needed in view of the strange, not to say dangerous, things which happen when the wires are simply contained in wooden cases and when the cases themselves are in precarious places. It is certain that better provision must be made to prevent the leakage of current on the electric railways, for it is stated that the increasing employment of electricity as a motive power is threatening to destroy our gas and water mains. We suppose that when the rupture of a big gas main is effected and a chance electric spark ignites the escaping gas, perhaps with a disastrous explosion, some pressure will be brought to bear up n those who employ electric power without regard to the best means of preventing the escape of waste current.

"THE CHOICE OF A CEPHALOTRIBE."

To the Editors of THE LANCET.

SIRS,—In answer to G. P.'s letter in THE LANCET of Jan. 5th (p. 75) asking for advice in the choice of a cephalotribe I should like to say that I have performed the operation of craniotomy many times and I have tried several kinds of cephalotribe, including one of my own design. The conclusion I have come to is that all the cephalotribes on the market are useless instruments. The very best instrument I have used—and I wish for no better—is Winter's modification of Auvard's combined cranioclast and cephalotribe. With this instrument craniotomy becomes a much simpler and easier operation. Dr. Jellett describes the instrument in his book on the Practice of Midwifery.

I am, Sirs, yours faithfully,

Jan. 9th, 1901. CEPHALOTRIBE.

R. M. O.—"A Text-Book of Nursing," by C. S. Weeks-Shaw (London and New York: Edward Arnold. 1896. Price 3*s.* 6*d.*).—Lectures on Medicine to Nurses, by Herbert Cuff, M.D. Lond., F.R.C.S. Eng. (London: J. & A. Churchill. 1896). The latter book is, we fancy, a work on purely medical nursing.

F.R.C.S. Ed.—Medical graduates of Brussels University, doubly qualified in Great Britain and on the Medical Register, are always held to be right in styling themselves "Dr."

H. M. D.—The question might be asked of the advertisers, but on the face of the advertisement the answer is No.

Mr. W. Parkinson Bothamley is thanked for his letter. We hope to give the subject attention.

Mr. Archibald Kidd.—The reports are published by Messrs. P. S. King and Son, London.

Mr. G. A. Brown is thanked for bringing the disgraceful matter to our notice.

Osiris.—Yes.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 10th, 1901.

Date		Barometer reduced to Sea Level and 32° F	Direction of Wind.	Rainfall	Solar Radiation Vacuo.	Maximum Temp. Shade	Min Temp	Wet Bulb	Dry Bulb	Remarks at 8.30 A.M.
Jan.	4	30·40	S.	...	43	41	40	39	40	Overcast
,,	5	30·44	E.	...	38	35	30	31	32	Foggy
,,	6	30·31	N.E.	...	45	30	28	Fzn.	30	Cloudy
,,	7	30·09	N.E.	...	33	30	27	Fzn.	30	Snowing
,,	8	29·89	E.	...	37	30	27	Fzn.	30	Snowing
,,	9	29·83	ENE	0·19	47	42	28	Fzn.	30	Foggy
,,	10	29·90	SSE	...	65	50	30	42	42	Foggy

During the week marked copies of the following newspapers have been received: *Jersey Express, Manchester Guardian, Blackburn Daily Telegraph, Dundee Advertiser, Glasgow Herald, East Anglian Daily Times, Yorkshire Post, Echo and Times (Sunderland). The Press (Norwich), Spalding Free Press, Derbyshire Times, Buckingham Advertiser, South Wales News, Middlesborough Gazette, Bristol Times, Brierley Hill Advertiser, Evesham Standard, Western Morning News, Huddersfield Examiner, Cambrian, Pioneer Mail, Times of India, Architect, Builder, Scotsman, Citizen, Liverpool Daily Post, Leeds Mercury, Hampshire Telegraph, Bristol Mercury, Buchan Observer, Grimsby News, Mid-Cumberland Herald, Hertfordshire Mercury, Local Government Chronicle, Mining Journal, Reading Mercury, Sanitary Record, City Press, Huntingdonshire Post, Brisbane Courier, Midland Free Press, Liverpool Courier, Surrey Advertiser, Southern Times (Weymouth), Local Government Journal, Norwich Press, Topical Times, Stratford-upon-Avon Herald, Cleveland Mercury, Caterham Free Press, Stirling Journal, Keighley News, South London Chronicle, Tewkesbury Record, Walsall Advertiser, Herald of Wales, Warwick Times, Alnwick Gazette Highland News, &c., &c.*

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

WEDNESDAY (16th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

THURSDAY (17th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

FRIDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

SATURDAY (19th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (14th).—MEDICAL SOCIETY OF LONDON.—8.30 P.M. Dr. H. Walsham and Dr. C. Beale: On the Diagnostic Value of Skiagraphy in Chest Diseases, with Skiascopic and Lantern Demonstrations.

TUESDAY (15th).—PATHOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. A Card Specimen will be shown by Dr. O. K. Williamson. Mr. S. G. Shattock: Chondro-sarcoma of Tibia associated with Pendulous Bodies.—Dr. M. Fletcher: Chronic Cholangitis in a Child.—Dr. H. D. Rolleston: Primary Carcinoma in a Cirrhotic Liver.—Mr. P. de Santi: Adenomatous Papilloma of the Sigmoid Flexure.—Mr. G. Pernet: The Bacilli of Leprosy, are they Intra- or Extra-cellular?

CHELSEA CLINICAL SOCIETY (Holy Trinity Parish Hall, Pavilion-road, Sloane-square, S.W.).—8.30 P.M. Paper:—Mr. C. A. Morris: Tubal Pregnancy.—Dr. Blumfeld: After-effects of Anæsthetics.—Dr. C. J. Harrison: Acute Rheumatism of Childhood.

WEDNESDAY (16th).—ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.).—8 P.M. The President: Annual Address.

ROYAL METEOROLOGICAL SOCIETY (Institute of Civil Engineers, Gt. George-street, Westminster, S.W.).—7.30 P.M. Ordinary Meeting. 7.45 P.M. Annual General Meeting. Report of the Council. Election of Officers and Council for the ensuing year. Address:—Dr. C. T. Williams (President): The Climate of Norway and its Factors (illustrated by lantern slides).

FRIDAY (18th).—EPIDEMIOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Meeting.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN (East London Hospital for Children, Shadwell, E.).—5.30 P.M. Cases will be shown by Dr. M. Fletcher (introduced), Mr. H. B. Robinson, Dr. G. Little (introduced), and Mr. F. C. Abbott. Papers:—Dr. L. Guthrie: A Case of Chronic Interstitial Nephritis in a Girl aged seven years.—Mr. S. Spokes: The immediate Regulation of Children's Teeth, with Models to illustrate cases Before and After Treatment.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (14th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. T. Colcott Fox: Consultation. (Skin.)

TUESDAY (15th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Sir W. Broadbent: Consultation. (Medical.)

GRESHAM COLLEGE (Basinghall-street, E.C.).—6 P.M. Dr. E. Symes Thompson: The Organs of Perception.

WEDNESDAY (16th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Cantlie: Consultation. (Surgical).

GRESHAM COLLEGE (Basinghall-street, E.C.).—6 P.M. Dr. E. Symes Thompson: Training of Perceptions.

THURSDAY (17th).—CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Mr. Lennox Browne: Intra-Nasal Obstructions; Soft—Hypertrophies of the Turbinals, Polypi, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

CHARING-CROSS HOSPITAL.—4 P.M. Mr. Gibbs: Surgery in South Africa. (Post graduate Course.)

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Colman: Demonstration of Selected Cases.

GRESHAM COLLEGE (Basinghall-street, E.C.).—6 P.M. Dr. E. Symes Thompson: Disorders of Perception.

FRIDAY (18th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. H. Spicer: Consultation. (Eye.)

GRESHAM COLLEGE (Basinghall-street, E.C.).—6 P.M. Dr. E. Symes Thompson: Travel in Relation to Disordered Perceptions.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1900, which was completed with the issue of Dec. 29th, and the Title-page to the Volume were given in THE LANCET of Jan. 5th.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1900 will be ready shortly. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are now ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

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Two Clinical Lectures
ON
ENLARGEMENT OF THE PROSTATE.

Delivered at the Medical Graduates' College and Polyclinic

BY P. J. FREYER, M.A., M.D., M.CH.,
SURGEON TO ST. PETER'S HOSPITAL FOR STONE AND URINARY DISEASES.

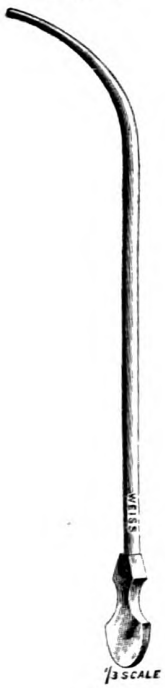
LECTURE II.[1]

Delivered on Nov. 9th, 1900.

GENTLEMEN,—Passing on to the treatment of enlargement of the prostate, you are aware that in this field of research considerable activity has been displayed by surgeons in recent years as regards operative interference. Holding, as I do, that in certain selected cases of this disorder an operation of some kind is advisable, and in a small minority imperative, to save the patient's life or ameliorate his sufferings, I have no hesitation in saying that in the vast majority the only admissible treatment is judicious and cleanly catheterism combined with careful hygienic living; and that by these means life will be more prolonged and existence rendered more tolerable than by any other.

When enlargement of the prostate is unattended by any symptoms no treatment is necessary. If, however, decided symptoms of obstruction are present, but the bladder contains no "residual" urine, or only an ounce or two, the question arises as to what treatment, if any, is desirable. In such cases I am in the habit of passing a large steel dilator (Fig. 4) as far as the bladder once a week and leaving it in position for 10 or 12 minutes, commencing with a No. 11 or No. 12, English scale, and gradually advancing to No. 15 or No. 16. I entirely concur in the opinion of my colleague, Mr. Reginald Harrison, as to the beneficial effect of this simple procedure. It probably does not stay the progress of the disease, but the periodical introduction of the dilator causes absorption of the gland around the urethra and maintains the patency of the channel, thus staving off for an indefinite period the necessity of having recourse to habitual catheterism. It is customary in cases of this kind in the incipient stage of enlargement to administer ergot with a view to causing reduction of, or retarding the advance of, the outgrowth. I am in the habit of employing the liquid extract of this drug combined with a saline both in hospital and private practice. It is difficult to say definitely whether the ergot has any effect in staying the advance of the enlargement, but it seems to relieve congestion, and patients undoubtedly express themselves as improved under its administration.

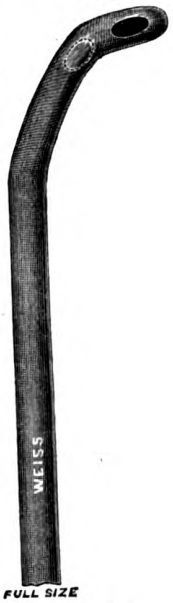
FIG. 4.



It will, as a rule, be unnecessary to have recourse to the habitual use of the catheter till the residual urine amounts to between three and four ounces, but if the frequency of micturition at night is such as to affect injuriously the patient's health through want of sleep it will be desirable to commence earlier. When, however, once about four ounces of residual urine have been reached habitual catheterism must be employed, and the patient enters on what is termed "catheter life," from which he can scarcely ever recede. When the "residual" urine is limited to four ounces or less it will, as a rule, be sufficient to pass the catheter once in the 24 hours and the best time for doing this is at bedtime, so that he may have several hours of sleep afterwards. If six ounces are retained the catheter should be employed twice daily; if eight or 10 ounces three or four times daily. When all power of voluntary micturition is lost the catheter must be used whenever the desire for urination is decidedly felt, generally every four hours or so. On no account should the patient be limited to any specific time within which he should not employ the catheter. The urine should be drawn off before pain or marked discomfort is felt; otherwise congestion of the prostate and bladder resulting in cystitis will be produced.

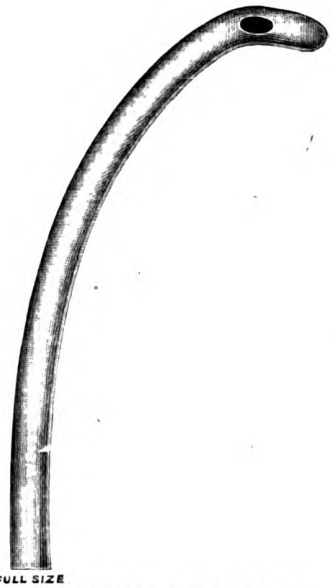
The patient must be taught how to use the catheter, and he should never be without one—that is to say, if he leaves home on a journey or in the course of his ordinary occupation he should always carry one about with him, for he may find at any time that its employment is imperative. Indeed, the sooner the patient recognises that the primary duty of his life is the employment of his catheter the better. A soft coudée catheter, No. 7 to 9E, whichever passes most easily, is, as a rule, the best for habitual employment. The patient, unless very infirm, passes it standing. There is now no danger of his fainting, for the quantity of urine allowed to accumulate is limited, and during the period of instruction in the use of the catheter that he will have undergone at the hands of the surgeon he will have acquired confidence in its use. The instrument is held perpendicularly whilst its end is introduced into the urethra. It is then gradually depressed into the horizontal position as it glides along the canal, over the obstruction and into the bladder, the curved end being directed upwards towards the roof of the urethra. Sometimes a well-polished vulcanised rubber catheter answers best. A timid patient likes it, as less liable to pain him; but if the prostatic urethra is narrowed from pressure of the lateral lobes it is not so easy to introduce as a more rigid instrument. It has also the disadvantage that its walls being stout the channel is comparatively narrow, so that the urine if at all thick will not flow through it readily. On the other hand, as it can be boiled without injury it is readily rendered aseptic, and as it coils up in a small space it can be carried about very easily. A soft and pliant cylindrical catheter will pass readily and answer best when there is no obstruction caused by the middle lobe. When this lobe is much enlarged a bicoudée catheter (Fig. 5) or a well-curved one terminating in a coude (Fig. 6) may be necessary to overcome the obstruction. Formerly it was customary to keep catheters mounted on a well-curved metal stylet ready for use; they are

FIG. 5.



Bicoudée catheter.

FIG. 6.



Well-curved catheter terminating in a coude.

[1] Lecture I. was published in THE LANCET of Jan. 12th, 1901.

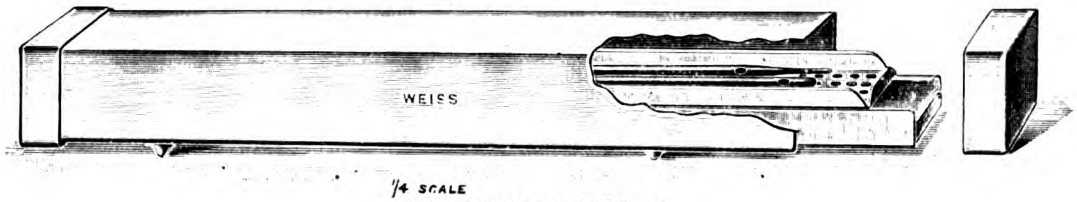
now woven with this curve in their manufacture and retain their shape permanently.

It will be rarely desirable for a patient himself to pass a metal catheter. When circumstances arise requiring its employment the surgeon should be called in. Whatever instrument is employed it must be kept scrupulously clean. The life and comfort of the patient depend not less on the cleanliness of his catheter than on the judicious use of the same. It will not be out of place, therefore, if I here direct your attention to the antiseptic precautions necessary in the employment of urethral instruments in general.

The instruments required for catheterism are of three kinds—metallic, soft rubber, and gum-elastic. The first two are most easily and effectually sterilised by boiling. They should be thoroughly washed and syringed through with soap and warm water and then boiled for 10 minutes, after which they are transferred to boric lotion ready for use. Gum-elastic instruments cannot be boiled without injury. They are best cleansed by washing and syringing them through with soap and warm water and then placing them in a 1 in 40 solution of carbolic acid for 10 minutes, after which they are placed in boric lotion before use. Prolonged application of strong antiseptics renders them rough and useless.

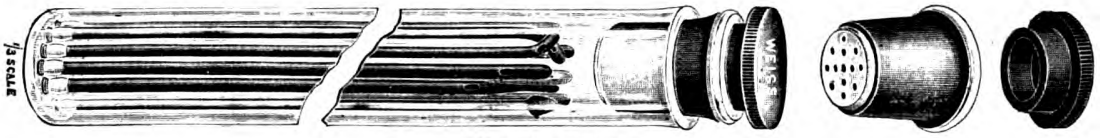
Before introducing an instrument of any kind into the bladder the foreskin and glans should be well washed with soap and water and then swabbed with some weak antiseptic lotion. If there be any discharge from the urethra the anterior part of the canal should be syringed out with warm boric lotion, but otherwise this precaution is unnecessary. Bacteriologists tell us that even the healthy urethra swarms with organisms that cannot be completely got rid of by the most thorough irrigation by antiseptic lotions. so that, theoretically speaking, the introduction of an instrument into the bladder ought to be attended frequently by infection of the urine. Clinical experience, however, teaches us that with the simple precautions indicated this may be avoided.

FIG. 7.



Catheters on trays in air-tight box.

FIG. 8



Glass tube steriliser.

It is useless to lay down an elaborate ritual of urinary asepsis which cannot be followed out in practice by the patient himself. If we only reflect on the frequency with which a man who has entered on catheter life has to pass an instrument and the circumstances under which he has often to do so it is obvious that the means of keeping his catheter aseptic to be efficient must be as simple as possible. Fortunately, in soap and water we have an efficient, convenient, and practical method of cleansing catheters, and this is what most patients have to rely on, and that with impunity. After using the catheter it should be again washed as before, thoroughly dried, and then placed for future use in a corked glass tube or covered dish. The best way of drying soft catheters is by pressing them between folds of lint or gauze in which they may be kept till again required

The powerful antiseptic properties of trioxymethylene, a white powder obtained by evaporation of formol, have recently been taken advantage of on the continent for sterilising gum-elastic catheters. This powder gives off slowly a vapour which is really formol in its gaseous form. If the catheters be placed quite dry on trays in an air-tight box (Fig. 7) with this powder inclosed between folds of lint they are rendered quite aseptic in 24 hours by the vapour given off. Before use they should be placed in boric lotion, as the formol is slightly irritant to the mucous membrane of the urethra. The catheters can also be sterilised in a glass tube fitted with a cork (Fig. 8) containing the powder, which evaporates through a fine grating on its inner aspect. Some patients of mine speak highly of the convenience of this method of rendering catheters aseptic. As lubricants for instruments fresh olive oil, or castor oil, or vaseline may be used. Carbolic acid should not be added; it irritates the mucous membrane if the proportion used be of any strength, and weak carbolised oil has practically no sterilising effect. Guyon's pomade, composed of equal parts of glycerine, powdered soap, and water, with 1 per cent. of phenol or naphthol, is a clean and efficient lubricant.

The general or hygienic treatment is most important. The diet should be light, simple, and nutritious. Vegetables and fruit, particularly baked or stewed apples, should be taken regularly, but tomatoes, asparagus, and rhubard should be avoided, as they act as irritants to the urinary tract. The less stimulants taken the better. The clothing must be adapted to avoid cold; the patient should be swathed in flannel. Sitting on cold or wet seats should be particularly avoided to guard against congestion of the prostate. The daily warm bath, best taken at bedtime, promotes the action of the skin and relieves local congestion about the prostatic region. The most important part of the general treatment is the regulation of the bowels. If they become at all constipated the urinary symptoms are aggravated. Measures should therefore be taken to induce a soft, but not liquid, motion daily. There is nothing better than confection of sulphur or senna or equal parts of both. Aloin, liquorice powder, and the sulphate of soda are useful, or one of the natural bitter saline waters may be taken in the morning. The enema should always be at hand for use in case the other medicines should fail to induce a daily motion. If pain be present an opiate must be given by the mouth, hypodermically, or as suppository. On no account should belladonna be administered whilst the bladder retains any vestige of expulsive power, owing to its paralysing influence on the muscles of that organ. Walking or carriage exercise should be taken daily, rough roads being avoided, but riding on horseback or on a bicycle should be abandoned on account of the shaking or direct pressure on the prostate caused thereby. The patient should as far as possible pursue his ordinary avocation and pleasures, but sexual excitement should be avoided. Many men pass useful and enjoyable lives for 15 or 20 years, or even longer, after entering on the habitual use of the catheter.

COMPLICATIONS AND DIFFICULTIES.

There are certain difficulties and complications incident to catheter life to which I will now direct your attention. When the surgeon is consulted at a comparatively early stage of the disorder, before the residual urine amounts to more than a few ounces, if careful asepsis be employed in the introduction of instruments the entry on catheter life is effected without any constitutional or local disturbance and matters run smoothly. The patient takes to his new existence,

sadly and perhaps unwillingly at first; but he soon bows to the inevitable and is grateful for the relief that surgical art has given him through the agency of the catheter. If, however—and this is what happens in a large proportion of cases that come under observation—through wrong advice, or that timidity about consulting the surgeon that induces elderly men suffering from urinary troubles to put off what they regard as the evil day as long as possible, the symptoms have existed for a long time, there is difficulty and frequency of micturition with some pain, the urine is turbid, possibly fœtid, the patient looks ill and worn-out, and the hypogastric dulness points to the presence of a considerable quantity of residual urine, the case must be regarded as one of considerable gravity. The employment of the catheter for the first time under these conditions is likely to be attended by constitutional disturbances, sometimes of severe character. The examination of such a case had better not be completed in the consulting-room—that is to say, you should defer drawing off the urine till the patient goes home. The examination should be completed in a warm room so that the patient can go to bed immediately afterwards, where he should remain for two or three days in any case, and for a longer period should constitutional disturbances set in. To relieve the distended bladder and then allow the patient out

FIG. 9.

Bottle fitted with nozzle and stopcock for washing out the bladder

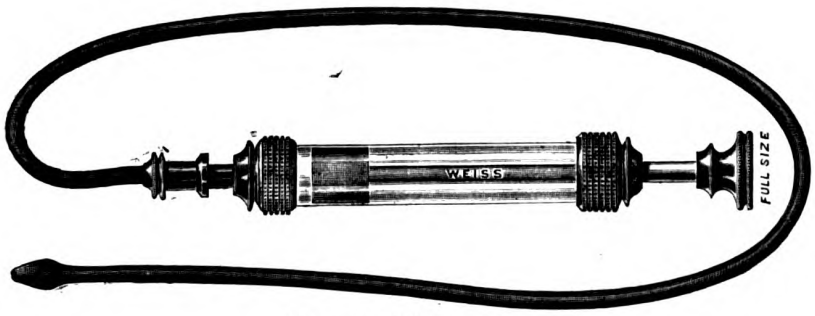
in the cold is injudicious surgery. In hospital practice, when the catheter is employed in a case of this kind in the out-patient department, the man should be at once admitted to bed. If the quantity of residual urine be large only half should be drawn off on first introducing the catheter. The quantity removed should be increased at each subsequent introduction and the bladder not completely emptied for two or three days, during which the patient should be under close observation. If he be too infirm or nervous to pass the catheter himself an experienced nurse should be employed for this purpose.

Urinary fever in connexion with catheterism.—In an advanced case of prostatic disease of this kind the urine, even when clear and acid on the first introduction of the catheter, generally becomes clouded and eventually ammoniacal in the course of a few days, and constitutional symptoms supervene. A rigor will probably occur, or even without this the temperature may rise to 103° or 104° F, profuse perspiration sets in, and, the normal temperature being reached, the fever may not recur. Sometimes more than one attack of this kind occurs, or the fever may be of a continuous character for some days, gradually subsiding; but occasionally the patient sinks into a low typhoid state, with dry, furred tongue, feeble pulse, and great thirst; and if the kidneys are much affected uræmia followed by coma, may set in, resulting in a fatal termination. This fever is variously termed "urinary," "urethral," and "catheter," but its exact cause—whether septic or neurotic—it is impossible with our present knowledge definitely to state. Certainly it occurs under the strictest antiseptic precautions and with the utmost skill in passing the catheter. The general treatment of this fever is similar to that following instrumentation or operation for stricture of the urethra, which has already been described, except that, owing to the advanced age and debility of the patient, it must be more sustaining, stimulants in moderation being allowed. When the urine contains pus the local treatment will be the same as that presently to be described for cystitis.

Cystitis.—Cystitis, as we have already seen, is a common complication of enlarged prostate, so that we must always be prepared to deal with it in its earliest stage. When the urine has a tendency to become cloudy and gives off a fishy, offensive odour the best drug to administer is boric acid, which may be given in 10-grain doses four times daily. A patient of mine, himself a medical man, who for years has been dependent on his catheter, informed me that he found two or three large doses of 25 grains each more effectual in bringing the urine back to its normal condition than repeated small doses; and I have since then frequently verified this experience in practice. If the urine becomes decidedly alkaline the boric acid should be combined with the benzoate of ammonia in 10-grain doses.

When pus forms the bladder must be washed out once or twice daily with disinfectants or astringent lotions. A four-ounce indiarubber bottle fitted with nozzle and stopcock (Fig. 9) is the most convenient apparatus to employ for the purpose. It should be completely filled with the lotion so as to avoid the introduction of air into the bladder. Not more than between two and three ounces should be thrown into the bladder at one time, though it may be necessary to repeat this process several times before the fluid returns unaltered. If, however, the cystitis be severe not more than half an ounce should be introduced, as the bladder walls are under such circumstances extremely intolerant of tension. All lotions should be used warmed to 100° F. For cleansing the bladder the most simple and useful injections are a 1 per cent. solution of boric acid or a teaspoonful of boro-glycerine to four ounces of water. Permanganate of potash solution, commencing with 1 in 5000 and gradually increasing it to 1 in 1000, and perchloride of mercury, 1 in 10,000, make excellent injections. But our sheet-anchor in such cases is nitrate of silver. Commence with a very weak solution, 1 in 4000, gradually increasing the strength to 1 in 750. It is rarely that the bladder will tolerate a stronger solution. I have

FIG. 10.



Olivary-tipped Guyon syringe.

found solution of resorcin, from 3 to 5 per cent., an excellent injection.

When there is great pain and scalding at the neck of the bladder from local cystitis there is nothing to equal daily "installations" of a strong solution of nitrate of silver. The urine is first drawn off and the bladder is washed out

with boric lotion. The olivary tip of a Guyon's catheter-syringe (Fig. 10) is then passed just through the membranous portion of the urethra and a drachm of the solution, gradually increased from 1 to 3 per cent., is slowly injected. This trickles back into the bladder and is allowed to remain there.

Complete retention of urine.—This is liable to occur suddenly at any time in connexion with enlarged prostate through congestion and swelling of that organ closing up the already narrowed passage. This congestion may be due to cold, sitting on a wet seat, errors in eating and drinking, sexual excesses, an attack of gout, or injury of the prostate by the catheter. Immediate relief of this retention is imperative—by means of the catheter if possible; otherwise by operative interference. It will be inadvisable to waste time by having recourse to hot baths and opium, as in the case of retention from stricture, for the patient being old and the muscular power of the bladder already impaired any delay may culminate in complete and permanent atony of the bladder from over-stretching of its muscles. To relieve the retention catheters of various kinds are employed. First a vulcanised indiarubber catheter should be used. It is astonishing how retention may occur and still little or no resistance be offered to the entrance of a soft instrument of this kind. If this fail a coudée catheter and a well-curved one terminating in a coude (Fig. 6) should be tried in succession. If still unsuccessful a well-curved cylindrical gum-catheter without a stylet should be employed. This instrument may be given any curve at pleasure by dipping it in hot water, bending it into the necessary shape, and plunging it into cold water, when it retains its new form. If we fail with this we employ the same catheter mounted on a stylet. As soon as the end of the instrument reaches the obstruction the stylet is partly withdrawn—a manœuvre which has the effect of causing the end of the catheter to project upwards and forwards, thus frequently entering the bladder. Finally, it may be necessary to employ an ordinary silver catheter or one with a longer curve. The utmost gentleness should be used, force of any kind being avoided, lest a false passage be made or hæmorrhage caused by injury to the prostate. When the middle lobe is the cause of the obstruction and the end of the metal catheter fails to ride over it the point should be directed right or left with a view to hitting off the channel that exists on either side of its neck. If there be much difficulty in introducing a flexible catheter it should be tied in for two or three days, but a metal instrument should, as a rule, be withdrawn. If we fail to introduce any kind of catheter temporary relief may be given by suprapubic aspiration, after which in the course of a few hours a catheter may pass in readily; should this fail it will be necessary to tap the bladder suprapubically by a trocar and cannula and drain it for a time.

If the retention occurs in an early stage of the enlargement, whilst the expulsive power of the bladder is still unimpaired, it is possible that after the use of the catheter for a few days the bladder may return to its normal state and habitual catheterism be unnecessary. But when the disease is far advanced and the retention has existed for some time it is rare for the bladder to regain its contractile power, even partially.

An attack of retention is almost invariably followed by constitutional symptoms, so that the patient will have to remain in bed for several days and the treatment generally will be the same as that already indicated when habitual catheterism is entered upon.

The pre-prostatic pouch.—In cases of enlarged prostate of long standing we may find that before the bladder is fairly entered a pre-prostatic pouch is encountered—that is, a pouch lying in front of the middle lobe and bounded on either side by the lateral lobes of the prostate, and which may permit the beak of a sound to rotate freely within it. I have not observed any reference to this pouch in the text-books, but its existence is of great importance. I have frequently known it to be mistaken for the true bladder cavity. Composed of the dilated prostatic urethra and that portion of the bladder cavity lying in front of the enlarged middle lobe, it, as a rule, contains urine which is drawn off by the catheter, thus giving rise to the impression that the main cavity of the bladder has been entered. Quite recently I was called in consultation to see a case of this kind in which the medical attendant could only draw off about half an ounce of urine each time he introduced the catheter, but without relief to the patient, though the medical attendant felt sure that the bladder was entered. There was great distention of the bladder, felt above the pubes, which was attributed to blood-clot, as the patient was subject to periodic attacks of hæmorrhage. By means of a well-curved coudée catheter I was enabled to effect an entrance to the main cavity of the bladder and to draw off three pints of blood-stained urine, but in doing so I recognised a large pre-prostatic pouch from which the urine had previously been drawn.

A stone may form in this position; I have removed several such calculi, generally by litholapaxy, the cavity being sufficiently large to permit me to work a child's lithotrite in it. I have also known calculi lying in the main cavity of the bladder missed through the surgeon mistaking this pouch for the bladder proper.

Hæmorrhage from the prostate.—Hæmorrhage rarely occurs in the early stages of enlargement of the prostate; but when the disorder is well advanced this is always liable to take place from various causes. The bleeding may arise from the mucous membrane of the bladder or from the prostate. During the early days after entry on the habitual use of the catheter it is liable to occur from the former source, when there is much distension from residual urine previously, due to rupture of the vessels from their being deprived of their accustomed support. As a rule the hæmorrhage is trifling, merely discolouring the urine, without the presence of clots, and requires no particular treatment, the symptoms gradually passing off. Then there may be hæmorrhage as the result of congestion of the prostate after exercise or exposure to wet and cold. This is seldom severe and also passes off with rest. In advanced stages of the disorder there is frequently a varicose condition of the veins on the surface of the prostate, and some hæmorrhage may occur from rupture of these. The bleeding may be so profuse as to distend the bladder. On three occasions I have had to open the bladder suprapubically to turn out an enormous clot filling its cavity. But the most frequent cause of hæmorrhage is injury of the prostate by careless or unskilful use of the catheter or from difficulty in passing the instrument. As a rule, the blood is mixed with the urine; but if the injury be in the prostatic urethra or on the anterior surface of an enlarged middle lobe almost blocking the orifice the blood may flow away quite pure from the urethra.

The treatment consists in perfect rest in bed and the administration of opium. The usual styptic drugs are of little or no avail. The blood-clots may be allowed to dissolve and come away with the urine. Washing them out through a full-sized catheter with a large eye may be tried, but care should be taken that this does not induce further hæmorrhage. When, owing to difficulty in passing the catheter, bleeding occurs on each introduction it is better to tie in a good-sized coudée for a few days. If it gets clogged with clot this may be displaced by gently injecting a little boric lotion from an indiarubber bottle.

Frequent hæmorrhage attended by much pain after exercise in prostatic patients should always give rise to the suspicion of the presence of stone. If a calculus lie in a saccule projecting out from the base of the bladder there may be intense agony during defecation if constipation exist, and the urine will generally be blood-stained afterwards. I have met with two cases of this kind in practice—one in which the symptoms were completely relieved after the stone was removed suprapubically, and the cause of the other was discovered after death. Orchitis is not uncommon in connexion with enlarged prostate, as a result of catheterism or independently of this; and excessive tenderness of one or both testicles is sometimes found, quite apart from any inflammatory state of the organs. Urethritis and balanitis may occur, particularly in patients suffering from diabetes.

OPERATIVE TREATMENT OF ENLARGED PROSTATE.

I shall now direct your attention to the various recognised surgical procedures employed for the disorder under consideration, which may briefly be classified as follows: 1. Radical operations, which aim at removing the obstructing portion of the glands. 2. Operations undertaken for the purpose of inducing atrophy of the prostate—(*a*) castration; and (*b*) excision of the vasa deferentia. 3. Palliative operations—(*a*) drainage of the bladder through the perineum; and (*b*) drainage of the bladder above the pubes.

Radical operations.—Numerous procedures have from time

to time been devised for the removal of the obstructing portion of the enlarged gland. Many of these are obsolete and have merely a historic interest. I shall only refer to the most important operations—those that are of practical value.

1. Division of the prostatic obstruction by the galvano-cautery. Bottini was the originator, as he has been the warmest advocate, of this method. An electrode shaped like a Mercier's sound is introduced into the bladder through the urethra. The beak is turned round and the instrument is withdrawn till it impinges against the obstruction. The current is then turned on and the obstructing portion of tissue is burnt through. This procedure has not been at all extensively employed and at the present time it has few advocates. It is applicable only to a very limited proportion of cases in which the obstruction is confined to the middle lobe, or the bar of hypertrophied tissue extending across the floor of the orifice of the urethra, or the adjacent portion of the trigone. But the chief objection to its employment lies in the fact that the operation is done in the dark, thus rendering it impossible to gauge accurately the extent of destruction done by the cautery. Wishart and Watson employed the galvano-cautery for the same purpose as Bottini, through a perineal opening into the urethra at the apex of the prostate.

2. Removal of a median growth through a perineal opening into the urethra by means of forceps or instruments constructed to punch out a portion of the growth. This also is an operation with a very limited range of application. I have from time to time employed this method in suitable cases, and have on two or three occasions removed a pedunculated prostatic outgrowth, either accidentally or by design, when performing perineal lithotomy.

3. Suprapubic prostatectomy. Though this operation had previously been performed by several surgeons it is to McGill, who brought it prominently before the profession in this country in 1888 with a series of cases, that it owes its present position. The varieties of prostatic enlargement for which this operation is suitable are (1) enlargements of the middle lobe, whether sessile or pedunculated, projecting into the cavity of the bladder, or forming a bar across the floor of the inner orifice of the urethra; (2) enlargements of one or both lateral lobes, forming prominent tumours in the bladder; and (3) hypertrophied prostatic tissue forming a ring or collar around the inner orifice of the urethra and partially closing it up. The preliminary stage of this operation—viz., the cystotomy—is identical with that for the removal of vesical stone or tumour by the suprapubic method. The employment of the rectal bag is a matter of taste. Personally I have almost completely discarded it as cumbersome and unnecessary, though I habitually used it for some years after its introduction by Petersen. As soon as the bladder is opened the forefinger of the left hand is introduced and a general survey of its cavity is made. By this means the position, shape, size, and general character of the prostatic outgrowth are ascertained. If the middle lobe be pedunculated it can be removed either by clipping the pedicle through, flush with the trigone, by means of scissors curved on the flat, or by twisting it off by the aid of forceps. A sessile middle lobe is removed by notching the mucous membrane and submucous tissues on either side of the growth, which is then twisted off by forceps. A prostatic bar or lower portion of hypertrophied collar is similarly removed or cut away by means of Jessop's forceps. A prominent lateral lobe is first grasped by strong catch forceps to render it steady. The mucous membrane at the most projecting part is then snipped by scissors. The opening thus made is enlarged by the finger-nail and the tip of the finger is introduced. The tumour is enucleated by slowly and carefully separating it from the surrounding tissues. Indeed, in the removal of prostatic enlargements suprapubically the scissors should as a rule be merely employed to snip the mucous membrane, the enucleation being accomplished by the finger-point. In this manner hæmorrhage is reduced to a minimum. Prostatic outgrowths prominently projecting into the bladder consist, as a rule, of more or less distinctly encapsuled tumours covered by the mucous membrane. The hypertrophied collar sometimes assumes a nodulated or beaded aspect, and if the mucous membrane covering it be snipped with scissors these small tumours can be enucleated by the finger-nail. As a rule the hæmorrhage is not severe and can be controlled by irrigation with hot boric lotion. If at all profuse the thermo-cautery should be applied to the bleeding points through a speculum, or the tincture of the perchloride of iron on a sponge. The finger of an assistant placed in the rectum will be of great aid, thus rendering the tumour in the bladder steady and more prominent. Sometimes the enucleation can be best effected by the surgeon introducing one or two fingers of his right hand into the rectum, whilst the finger of the left hand is in the bladder. The drainage of the bladder and after-treatment are the same as after suprapubic cystotomy for stone or tumour.

This is undoubtedly the most valuable of the radical procedures employed for the removal of prostatic outgrowths—that which is most commonly applicable, most easily accomplished, and most thorough in its results. I have performed this operation on several occasions and with considerable success. In one instance I removed both lateral lobes projecting into the bladder, each of the size and shape of half a large pear, the whole weighing three ounces. In another there were distinct encapsuled tumours corresponding to the three lobes, weighing two ounces, which were enucleated quite readily. Both these operations were thoroughly successful, the patients getting complete control over micturition, which was unattended by any symptoms.

Unfortunately, in a few of my cases the bladder did not regain any of its expulsive power even after the obstruction was thoroughly removed, owing to the existence of complete atony of the muscles of the bladder from prolonged obstruction or general sclerosis of the bladder walls. The removal of the growths was, however, followed by subsidence of the most urgent symptoms and rendered the introduction of the catheter easy.

4. Perineal prostatectomy by Dittel's method. This operation consists in removing a wedge-shaped portion from the under surface of one or both lateral lobes with a view to relieve the pressure on the urethra. This is accomplished through an incision extending from the median raphe round the sphincter ani to the tip of the coccyx. The ischio-rectal fossa is opened up and by dissection the rectum is separated from the prostate, which is exposed and a wedge-shaped portion is removed from it. By extending the dissection in front a little beyond the middle line the other lobe of the prostate can be exposed and similarly dealt with. An essential feature is that the bladder and urethra be left intact. This operation does not appear to have been performed in many instances and the records of cases are not very encouraging, fistulæ remaining in some of them owing to the urethra or bladder having been opened during the procedure and imperfect results being obtained in others.

5. Nicoll has modified this operation by performing a preliminary suprapubic cystotomy. This is done for the purpose of introducing a finger into the bladder with a view to pushing the prostatic tumour into the perineal wound, thus facilitating its removal, and at the same time obviating the opening of the mucous membrane of the bladder or urethra.

6. In a communication to the Medical Society of London made in March, 1900, I described, by means of an illustrative case, a new method of performing perineal prostatectomy in which advantage is taken of Dittel's perineal incision; but Nicoll's objects are attained by a much less serious proceeding than suprapubic cystotomy—viz., by a preliminary perineal opening into the urethra.

A gentleman, aged 59, sent by Dr. Richard Heath, of St. Leonards-on-Sea, consulted me on October 11th, 1889, suffering from the following symptoms: increased frequency of micturition, averaging about ten or eleven times by day and seven or eight times by night; difficulty in starting the stream, necessitating much straining to effect this; he finds that when he places his hand on the hypogastric region and pushes the abdomen upwards the stream starts more readily. Diminished force of the stream. Dribbling at the end of micturition. Sometimes the stream is intermittent. The urine is clear, as a rule; some eight months ago it was very dark in colour, but patient cannot say if it contained blood. Pain and discomfort behind the glans during micturition, and discomfort above the pubes before the act. The symptoms have existed three years and have been gradually growing worse. At first they were more troublesome at night, but latterly they have been as bad in the daytime. They are increased by exercise, particularly in walking. I sounded the patient, but could find no stone. There was some difficulty in passing the instrument over the enlarged prostate. Residual urine four and a half ounces; trace of albumin. Per rectum there was a tumour felt in the right side of the prostate, twice the size of a walnut, very dense throughout, with a nodule of intense hardness, which was very painful on pressure. This nodule felt like a stone embedded in the prostate. The left lobe of the prostate was scarcely enlarged and quite soft. On the 17th I made a cystoscopic examination, the patient being anæsthetised by Dr. Dudley Buxton, and Mr. Victor Horsley being present in consultation. The right lobe of the prostate was seen to be enlarged and projecting into the bladder, the size of a walnut, irregularly nodulated, and of a dark-brown colour. The left lobe was not visible in the bladder, which, generally, presented a healthy appearance,

except that the mucous membrane was trabeculated, the result of constant straining and backward pressure of urine. After consultation exploration of the bladder by a perineal urethrotomy was decided on, and this was carried out next day. The urethra was opened in front of the prostate on a staff. On passing my finger through the opening I found a round, prominent mass, involving the right lobe of the prostate, projecting into the bladder, but no stone could be detected. On inserting the forefinger of my other hand into the rectum the hard nodule was felt as before and the tumour clearly defined, rounded, and intensely hard, the left lobe of the prostate being almost normal. After consultation with Mr. Horsley we determined to remove the tumour perineally. A crescentic incision about four inches long was made from the median raphe at the lower end of the urethral wound backwards round the anus to the coccyx on the right side. The dissection was carried deep into the ischio-rectal fossa, the rectum being drawn inwards by a broad retractor. The left forefinger was passed through the urethral wound into the bladder and hooked round the tumour, which was pressed out into the wound, and thus came well into view. The capsule of the prostate was incised and peeled off by means of an elevator. The tumour, which involved the whole of the right lobe of the prostate, was thus removed piecemeal by cutting forceps and curved scissors, only a thin layer being left to support the mucous membrane of the bladder and prostatic urethra, which was left intact. There was very little bleeding, and this was controlled by forcipressure, no vessels being ligatured. On completion of the operation a soft-rubber perineal tube was passed through the urethral opening into the bladder and retained there by a suture, and on this a rubber drainage-tube was fixed to convey the urine to a vessel beneath the bed. The large gaping wound in the ischio-rectal fossa was packed with iodoform gauze and the usual dressings applied. The perineal tube was kept in for six days, during which time the whole of the urine passed through it, not a drop escaping beside the tube, thus obviating any chance of infection of the deep ischio-rectal wound till it had partly filled up and was covered by healthy granulations. The temperature rose to 100° F. one night, after which it did not go above 99° F. After a fortnight the urine began to pass partly through the urethra, and after a few days later no urine passed by the perineal wound in the urethra. The patient was sitting up on Dec. 1st. On the 18th he left the surgical home untroubled by any urinary symptom, and he is now quite well. The tumour turned out to be of the fibro-adenomatous type, frequently met with in the prostates of the aged, the fibrous elements predominating. It was as hard as scirrhus. About its centre a few drops of pus were found in the middle of a small coagulum, due to a thrombus or irritation of a small prostatic concretion found in this vicinity.

The advantages claimed for this method of operating are:—1. The preliminary external urethrotomy permits of the introduction of the finger into the bladder which, with the finger in the rectum, enables the surgeon to define accurately the shape, density, size, and extent of the prostatic growth in a manner that cannot otherwise be accomplished, except, perhaps, by a suprapubic opening—a much more serious proceeding. 2. The finger can be hooked over the enlarged lateral lobe and the latter pushed well into the ischio-rectal wound, thus to a large extent obviating a deep and dangerous dissection, as in Dittel's operation. 3. With the tumour pushed well into the wound the capsule is easily incised and erased, and the cutting forceps and scissors easily and freely applied to eradicate the whole mass. 4. The finger in the bladder enables the surgeon to feel when the cutting instruments are approaching that viscus, so that he can remove the whole growth, except a thin layer for the support of the mucous membrane of the bladder and prostatic urethra, without opening the latter, thus avoiding infection of the wound and the existence of a permanent fistula. 5. The stout perineal drainage-tube inserted into the urethral wound carries off all the urine and prevents the perineal wound from becoming septic. The drawback to the operation is that, like all other operations proposed for the removal of prostatic growths, it is applicable only to certain forms of the disease. It is not, of course, applicable to cases of enlarged middle lobe projecting into the cavity of the bladder. For such cases McGill's operation is undoubtedly the best. In very fat patients, or when the prostatic tumour is extremely large, it may not be feasible, owing to the fact that the finger may not in such cases be sufficiently long to hook it round the growth.

Operations undertaken for the purpose of inducing atrophy of the prostate.—1. Castration. The apparent analogy between prostatic overgrowths and uterine fibro myomata induced Professor J. W. White of Philadelphia to suggest in 1893 that castration might have the same effect in the former disease that removal of the ovaries has in the latter. It has been demonstrated beyond question that castration in young dogs and other animals prevents development of the prostate, and that in fully-grown animals this operation is almost invariably followed by atrophy of the healthy organ. The same is true of the human male. In addition to the conclusive observations on this point on record I may add that it fell to my lot at one period in India, in the course of my official duties, to examine a large number of eunuchs for medico-legal purposes. Some of these eunuchs had been castrated in infancy; others had voluntarily undergone emasculation through religious fanaticism in early adult life. In one and all of them the prostate was found to be rudimentary.

Castration has now been performed in a considerable number of cases of prostatic enlargement. Unfortunately, the details in a large proportion of the published cases are given in such an imperfect manner that no logical conclusion can be drawn therefrom. There is, however, a sufficiently large number of carefully recorded cases to show that, without accepting the somewhat optimistic views as to results enunciated by Professor White, in a large proportion of patients the subjects of prostatic enlargement that survive the operation castration is followed by shrinkage and atrophy of the gland, with corresponding amelioration in the symptoms, as indicated by diminution in the frequency of micturition; by relief from the burning pain frequently felt at the neck of the bladder; by abatement of the attendant cystitis; by improvement in the character of the urine; by reduction in the quantity of residual urine; by partial or complete return of voluntary micturition; more easy introduction of the catheter; and by general improvement in the patient's health. The atrophy of the enlarged prostate is demonstrable by rectal examination and by the length of the urethra as indicated by the distance the catheter has to be introduced before urine begins to flow.

One of the most remarkable effects of castration is the decided improvement in the symptoms that sets in in many cases a few hours after the operation, particularly in the diminution of pain and in the spontaneous passage of urine when all expulsive power had previously been lost. This is obviously not due to atrophy, for the process of wasting requires time—some weeks in fact—before it displays itself to any marked degree. It must be remembered, however, that the glandular overgrowth is not the only factor, as a rule, contributing to the bulky prostate when the patient comes under observation. There is tumefaction of the organ from congestion and chronic inflammation at the neck of the bladder, and it is to this latter condition that some of the most urgent symptoms are frequently due. Castration has the effect of relieving these urgent symptoms rapidly by diminishing the congestion, thus causing immediate shrinkage of the prostate. How it does so is still a matter of conjecture. Professor White holds that "the removal of the testicles removes this congestion by abolishing the source of the stimulus that excites the function of the prostate." Sometimes the immediate improvement in the symptoms continues and becomes more marked later. At others the immediate benefit disappears after a few days, and marked improvement only sets in after two or three weeks when the atrophy of the gland begins to make progress. In a considerable proportion of cases castration has no effect in inducing atrophy of the enlarged prostate or in ameliorating the symptoms. I believe it will be found that these are mainly cases in which the prostatic overgrowth has assumed the form of fibroid degeneration.

The most serious drawback to castration for enlarged prostate is the high mortality—a mortality of at least 20 per cent.—by which the operation is attended, owing to the advanced age and, in a large proportion of cases, the broken constitutions of the patients. Mental disturbances, sometimes amounting to mania, occasionally follow this operation. These may be of a temporary character, or mania may permanently remain, the patient as a rule succumbing at an early date. It must, however, be remembered that patients with advanced prostatic disease are frequently mentally weak, and that operations of any kind connected with the hypertrophied gland are liable to be followed by insanity. The part played by the anæsthetic in such cases must not be lost sight of. In two cases of mine in which mania supervened on perineal drainage of the bladder for prostatic obstruction I felt inclined to attribute this to the anæsthetic.

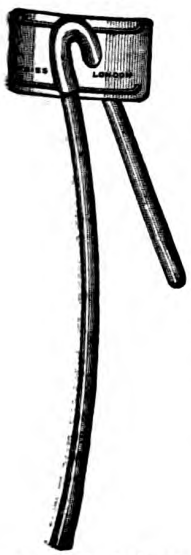
Besides these considerations there is the strong sentimental objection on the part of patients to lose their testicles, even when these organs are no longer of any physiological use. Castration is, indeed, an operation which the surgeon naturally shrinks from suggesting in the early stages of the prostatic disorder or even whilst the patient is enabled by means of the catheter to lead a fairly comfortable and active life. Nor is it likely that the patient would at all readily fall in with such suggestion. No man will consent to have his testicles removed for the purpose of preventing future prostatic troubles whilst anything remains of their physiological function; and even when all virile power is lost patients shrink from emasculation through the consciousness of being thereby unsexed. This may be regarded as false sentiment, seeing that the organs are no longer of any use. Call it what you like, it is only human and has to be reckoned with in practice. A man will only consent as a rule to have his testes removed when less drastic measures have failed and he is driven to it by the agony attendant on the final stages of the disease. When that period is reached castration is in itself an operation attended by a heavy mortality.

These are the considerations that have prevented this

operation from being at all freely resorted to and which have in the last few years induced surgeons to have recourse to vasectomy, which, if not quite so effectual in its results as castration, is practically unattended by danger to life and free from those sentimental objections incident to this latter operation.

2. Vasectomy. This operation consists in division or excision of a portion of the vas deferens. General anæsthesia is, as a rule, advisable; but the operation may be performed with the aid of local anæsthesia, such as the subcutaneous injection of cocaine. The parts having been shaved and rendered aseptic the vas is searched for in the upper part of the scrotum. It is then firmly grasped between the finger and thumb of the left hand and brought as close to the surface as possible. An incision an inch long is made directly over and along the course of the cord, and the dissection is carried down to the vas, which is recognised by its white, glistening appearance. The vas is then grasped by toothed catch forceps, a blunt hook is passed beneath it, and a loop is withdrawn through the wound after separating it from the enveloping fascia. A ligature may be tied round the loop, which is cut off, or separate ligatures may be applied an inch or more apart and the intervening portion may be cut away. The skin wound is closed by one or two sutures. The vas on the other side is similarly dealt with, either at once or after an interval of a few days. This latter course is safer and less liable to be followed by mental disturbances.

FIG. 12.



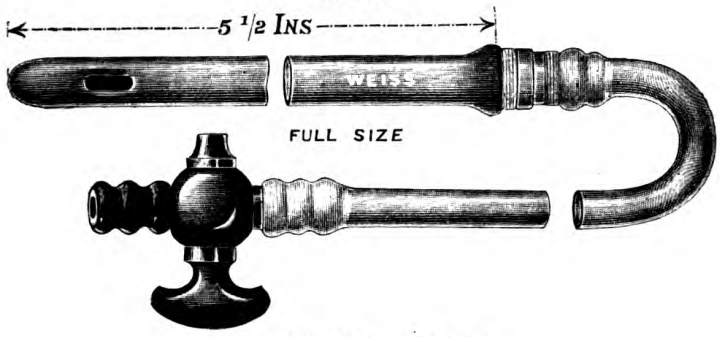
Thompson's drainage apparatus.

I have now performed this operation in a considerable number of cases without any mortality. Indeed, I cannot imagine death resulting from such a comparatively simple operation alone. In none of my cases have I noticed any marked atrophy of the testicles, though in a few instances these organs diminished in size and grew softer. There has been no interference with the sexual power when such remained at the time of the operation beyond the fact, of course, that there was no discharge of semen. In a large proportion of cases there has been decided benefit from the operation, both immediate and remote, similar to those already described as resulting from castration. The atrophy of the prostate progresses much more slowly than after castration and I do not think that it is ever so complete. In a very considerable proportion of the cases there was no permanent benefit from this operation, though, as a rule, there was temporary subsidence of the more urgent symptoms, due, no doubt, to the influence of the operation in allaying the congestion of the prostate. It is probable that the rest in bed, systematic catheterism, and general regime following the operation had considerable influence in ameliorating the condition of the patients.

Vasectomy effectually prevents the recurrent epididymitis and orchitis which are such painful and distressing complications in prostatic patients. This happy result would alone entitle this operation to an important place in surgery. My experience of vasectomy is that it is useless for the purpose of inducing atrophy of the prostate when that organ has assumed the form of fibroid degeneration as recognised by its hard consistence and nodular form by the rectum. It is in those cases in which the enlargement is mainly or solely of the adenomatous type, the gland being felt generally hypertrophied and soft per rectum, that we may expect permanent results from this operation.

I have never seen a single instance in which, after either castration or vasectomy, voluntary micturition was permanently restored when atony of the bladder had advanced to such a degree that the patient was entirely dependent on his catheter. Vasectomy is neither so rapid in its results nor so radical a cure as castration. As, however, vasectomy does not interfere with the sexual power and does not involve emasculation patients consent to its performance at an early stage of the prostatic disease, when it has the best prospect of success, before the degeneration assumes a fibroid character, or irreparable damage is done to the muscles of the bladder.

FIG. 11.



Annandale's drainage apparatus.

Palliative operations.—When in the advanced stages of prostatic enlargement the capacity of the bladder is much diminished in size, all expulsive power is lost, and severe cystitis exists, it may be necessary to draw off the urine by the catheter every hour, or even more frequently, and when, in addition, there are difficulty, pain, and possibly hæmorrhage in the introduction of the instrument, the condition of the patient is indeed a pitiable one. If something further be not done to relieve his condition he rapidly gets worn out from the severe pain and loss of sleep incident to the constantly-repeated catheterisation. Under such circumstances the bladder must be drained, temporarily or permanently as the case may require, through an opening made either in the perineum or above the pubes, thus obviating the introduction of the catheter and giving the bladder complete rest. The method of draining the bladder by the perineum was described in a previous lecture in connexion with stricture of the urethra. Should it be considered advisable to establish permanent drainage by this route this can best be affected by the apparatus designed by Annandale for this purpose (Fig. 11).

To effect drainage of the bladder above the pubes the operation is the same as suprapubic cystotomy for stone. Drainage by this route may be permanently carried out by an apparatus devised by Thompson (Fig. 12), by which a soft rubber catheter is retained in the fistulous opening by means of a silver plate held in position by a belt round the waist and a perineal band. The other end of the catheter passes into a rubber urinal strapped on to the leg.

The considerations that must guide us in our choice between these two operations may be stated thus. The perineal is a much less serious operation than the suprapubic. When, therefore, drainage alone is required and this is to be of a temporary character, and particularly if the patient be very feeble, the former operation should be selected. But if the drainage is to be permanent, if there be suspicion of the presence of calculus, or when, from previous observation by the cystoscope or otherwise, it is known or suspected that an outgrowth of the prostate causing or accentuating the obstruction exists, which is

capable of being removed, suprapubic cystotomy should be employed. By this procedure the bladder at the same time that it is drained can be thoroughly explored and a stone or prostatic outgrowth can be removed. Thick, dense flakes of muco-pus and phosphatic grit, which in cases of this kind frequently adhere to the walls of the bladder, can be scraped off by the finger-nail or scoop and removed by irrigation.

A Clinical Lecture

ON

SOME CASES OF HEAD-INJURY, INCLUDING ONE IN WHICH THERE WAS LESION OF THE OCCIPITAL LOBE.

Delivered at St. Mary's Hospital on Nov. 27th, 1900,

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GENTLEMEN,—I hope that you never lose the opportunity of seeing and taking note of the cases of head-injury admitted to this hospital. All of them are likely to be of interest, and many of them will surely present difficult problems for solution. They will provide, moreover, a suitable field for cultivating the faculty of accurate observation, and they will show you how essential is this cultivated faculty for the detection of those minute departures from the normal upon which alone you may have to depend for diagnosis.

There may be comparatively little difficulty in diagnosis or decision as to treatment when you have to do with a scalp wound or a visible fracture beneath it, but when there has been no obvious injury to the scalp or the skull, and the lesion is of parts within the closed cavity of the cranium then begin your difficulties, and the faintest clue must not escape your observation. What are the sorts of things for which you have, then, to look? A hæmatoma in the occipital region, bleeding, or escape of cerebro-spinal fluid from the ear, bleeding from the mouth or nose, subconjunctival hæmorrhage, vomiting of blood, signs of paralysis, however trifling, in the face or limbs, inequality in the pupils, changes in the character of the unconsciousness, convulsive seizures—their nature and duration—any one of these may help you to a solution of the case and enable you to answer the question which the surgeon must always put to himself in cases of head injury, Is there, or is there not, the necessity for operation? From the patient himself small help is to be gained, for in all probability he lies unconscious before you, and you cannot avail yourselves of the Roentgen rays to make a cut-and-dry diagnosis. You have to rely upon your own observation and you will have to bring to bear upon the observations which you make no small amount of thought for their interpretation. Moreover, if you watch these cases without ceasing you will sometimes have the chance of hearing the surgeon think aloud at the bedside, and maybe you will be present at a conference between physician and surgeon when arguments are adduced in favour of, or against, this or that view of the history and the facts observed. A case of this kind was before us only a few days ago. A man, 47 years of age, was brought to the hospital with a letter from the medical man who had been attending him and who wrote that the patient had been suffering from concussion of the brain and that there were now indications of cerebral irritation which led him to think that trephining should be resorted to at the seat of lesion. I am not particularly fond of ready-made diagnoses—they have a tendency to hamper your own judgment; but in this case, perhaps, the diagnosis of another practitioner made us only more careful in our own examination. Well, we failed to find either in the scalp or the cranium any indication of a lesion and it was soon obvious that we had before us something out of the common. The man was not unconscious, he heard and evidently was interested in all that we said, but all that he himself could utter was the word "yes" and, with much greater effort and difficulty, the word "no." We thought we saw some indications of right facial paralysis, but we found no difference in the limbs. Gouty tophi, moreover, were prominent on his ears, his radial artery was tortuous and hard, and the provisional opinion was entertained that the man's condition was not the result of a fall but that some intra-cerebral lesion, either hæmorrhage or thrombosis, was the cause of his supposed accident. We drew off his urine to test for albumin and found it free, the man all the while observing our actions but being unable to speak. We determined to watch him carefully and to take especial note of the convulsive seizures which we were told he had been having for the last three days. There was no change in his condition during the night, and accordingly on the next morning I asked Dr. D. B. Lees to see him with me. He examined him most thoroughly, discovered unquestionable paralysis of the right limbs as well as of the face, and came to the same conclusion as ourselves. At the same time we had the advantage of seeing the patient's wife, from whom we learned that the man had for some months been suffering from gout and had only recently resumed work, and that exactly a week ago he had gone to his work in the evening and within a few minutes was found lying on his back unconscious a few yards from his own door. The unconsciousness was not of long duration and his mental state improved, but he was unable to say more than "yes," and three days before he had begun to have convulsive seizures which had been frequently repeated and in which one-sided phenomena had not been noticed. Dr. Lees agreed with me in thinking that there was no call for an operation and the man has been transferred to his care. This, however, is not the case which I had chosen as the subject of this lecture, and I only refer to it incidentally as one under very recent observation and as providing an example of the sorts of problems which may at any moment be presented to you for solution. The cases to which I now wish to direct your attention have points of interest of their own of a wholly different character from that which we have just considered.

CASE 1.—The first case is that of a lad, 15 years of age, who was admitted on July 6th, 1900. He was travelling on the Underground Railway with his back against the carriage door, and with fatalistic precision a large metal advertisement hoarding fell and struck him on the back of the head. He was brought here in a state of unconsciousness from which he soon rallied, and a lacerated wound of the scalp two and a half inches long was found running along the line of the right lambdoid suture but not reaching quite to the middle line. Brain substance was protruding from the wound. He was said to have been sick several times and to have had a general twitching of the whole body which in the notes is described as being "like shivering." I had him moved at once to the theatre, enlarged the wound, and removed four fragments of bone, two of the sizes of sixpence and a shilling from the outer, and two of three times the size and of irregular outline from the inner table of the skull. These had been driven deeply into the brain substance, from which were extracted pieces of mortar also. The contused and lacerated portions of brain were likewise removed, one suture was passed through the wound in the dura mater, and the scalp wound was brought together with sutures except at one corner which was left open for drainage. The boy was sent back to bed with small hope, I thought, of recovery, but thanks to antisepsis he did as well as possible, and in a few days everything about the wound was perfectly quiet and soundly healed. Mentally he was bright and well. The optic discs were normal.

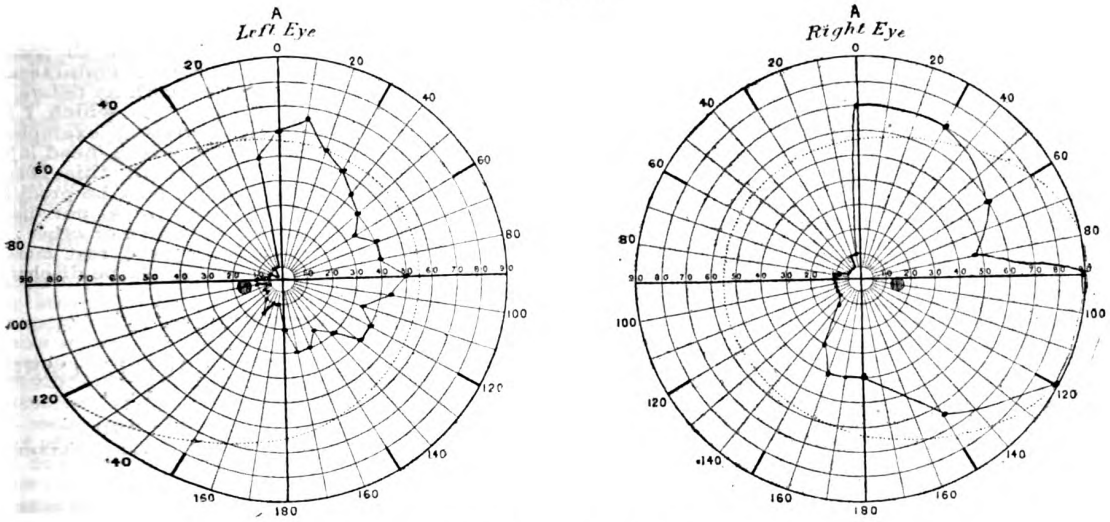
The case, however, had further points of great interest. There had been an injury to the occipital lobe and I thought it would be well to investigate carefully with the perimeter the range of the fields of vision. Some few years ago[1] we had a case of occipital injury in a small child and the belief of everyone who saw her was that, for a time at any rate, the child was blind. The child was too young, however, for special examination, and we had to be content with our belief alone. Here, however, we had a boy, 15 years of age, in whom we hoped that accurate observations might be possible as to the fields of vision, and this Mr. A. G. Wilson very kindly undertook for me. This is not the occasion, nor have I the knowledge adequate, to discuss the

[1] Transactions of the Ophthalmological Society of the United Kingdom, vol. xii.

relationship between vision and the occipital lobes. It will suffice if I read to you a short passage from Swanzy's Monograph on "Eye Diseases and Eye Symptoms in their relation to Organic Diseases of the Brain and Spinal Cord." "While the question," he says, "whether the cortical centre for vision is confined to a part of the calcarine fissure or occupies a more extensive region of the mesial surface of the brain is one of eminent interest, it is, for practical purposes, sufficient to know that this centre is round about the cuneus and the calcarine fissure, that it does not occupy the whole of the occipital lobe, and that it is not on the outer surface of the brain. The most important symptom caused by a destructive lesion of the whole of the cortical visual centre in one hemisphere is complete and absolute loss of function in the corresponding side of each retina and consequently complete and absolute homonymous hemianopsia of the opposite side of each field of vision." I pass Mr. Wilson's perimeter charts round (see Figs. 1 and 2). They speak for themselves and they show that there is blindness in the left side of both fields, implying a loss of function in the right half of each retina. The first one is dated July 9th (three days after the accident), and in succeeding charts of the 14th, the 23rd, and the 31st you will see that the range of the fields is already markedly widening. The fields have been mapped again to-day; and there is a vast improvement, almost if not quite to the normal range, since the patient left the hospital. The boy is here, and you will judge for yourselves that his mental condition is perfectly sound and you will be able to feel the site of the cranial injury. And if you will look at these plates in Macewen's "Atlas of Head Sections" (Plates 29, 31, and 32) you will see that immediately beneath the site of the cranial lesion is the occipital lobe and the calcarine fissure. We cannot, of course, state with the accurate precision of deliberate experiment the site and depth of the cerebral injury. We know that it was superficially extensive, and it may well have been much deeper than the visible appearances, extensive though these were, would have led one to suspect. Bone was driven in and much brain matter was removed. At all events I think we are justified in the conclusion that the temporary limitation in the fields of vision was the result of injury to some parts of the occipital lobe, and from that point of view, if from no other, you will agree with me in regarding the case as one of unusual interest.

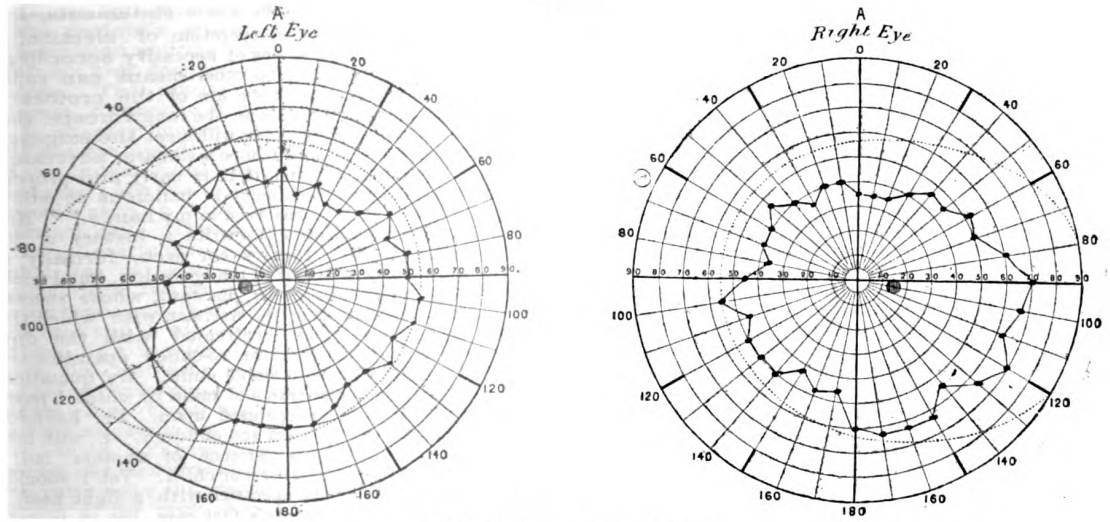
Our next case was of a different and more ordinary kind and I bring it before you because it was one in which a

FIG. 1.



Perimeter charts. July 9th, 1900.

FIG. 2.



Perimeter charts. Nov. 27th 1900.

mistake was made in treatment. Mistakes in practice are commonly instructive. I have never hesitated to tell you of my own, for I feel that if a man will not record his mistakes he had better hold his tongue.

CASE 2.—A boy, aged 14 years, fell from a tree and was admitted in a dazed condition with a large hæmatoma in the right fronto-temporal region. The eyelids were swollen and completely closed. There were no one-sided phenomena, but when I first saw him on the following morning (Oct. 27th, 1900), I thought there was a distinct depression as of fracture beneath the hæmatoma. You know, I dare say, that it is sometimes extremely difficult to say whether there is or is not depression of bone when there is no scalp wound. The scalp tissues may have been severely contused and pulped, and if there be added a definite hæmatoma at the site of the blow the physical state of the parts is very suggestive of a depression of bone. The contrast between the injured tissues and those adjoining is abrupt and is such as to give the impression of a defined edge of bone with a depression which feels exactly like the depression of fractured skull. You have always to take this into account in the examination of a contused scalp without open wound. In this case I felt so confident that there was a depression that as soon as the forehead had been sterilised and the eyebrow shaved an incision was made along the outer half of the brow through the scalp tissues. A large hæmatoma was cleared out and then we found that our supposed fracture was the normal depression of the bone immediately behind the anterior part of the temporal crest. No harm was done, it may even have been well that the hæmatoma was got rid of, and the boy left the hospital on Nov. 6th quite well and with hardly any visible scar.

CASE 3.—The third case is that of a man, aged 29 years, who is still in the hospital. He was admitted on Nov. 9th, 1900, having fallen 60 feet from a ladder and in his flight to earth struck his head against something in the way. He was profoundly unconscious, his sphincters were relaxed, and there was slight bleeding from the right ear. This soon ceased and gave us no further concern and it was not succeeded by escape of cerebro-spinal fluid. There was considerable bruising all over the right side of the head, especially in the sub-occipital region, and it seemed just possible that he might have sustained a fracture of the base. There were no one-sided symptoms suggesting the necessity of operative intervention and our only business was to watch him carefully. Improvement in his mental condition was very slow and it was only after an interval of five days that he seemed able at all to appreciate his surroundings, and then he complained greatly of pain in his head. We also thought that there was some evidence of right facial paralysis, confirmatory, if really present, of our supposition that there might have been a basal fracture, but more recently, when he had still further improved, he was able to tell us that this paralysis was of long-standing, the result of an accident some years before. For days he lay complaining of his head, he could not sleep in consequence, and we deemed it advisable to give him bromide of potassium in the hope that sleep might help to lessen his headache And so it did; he was decidedly better and began to wake up, to take his food better, and to be more alive to things around him. He is now apparently on the road to early recovery, he sits up and reads the paper, but is too talkative and excitable and needs quiet.

We have had in this case an example of what we may call uncomplicated concussion, and yet I would have you remember that after all injuries of the kind the brain itself has almost certainly suffered lesion. In fatal cases you find hæmorrhages, minute or large, in some part of the brain substance, and very commonly there is extravasation of blood into the arachnoid cavity. We are justified therefrom in the conclusion that in those also who recover there has been actual brain lesion. When you get into practice you will often have the questions put to you, what are the prospects of recovery? and what will be the ultimate issue of the case? Very difficult questions indeed you will find them to answer, needing all your tact that you do not commit yourselves to too definite an opinion. They are more likely to be put, and put more often, about cases in which there is prolonged unconsciousness. I do not believe that it is by any means the fact that prolonged unconsciousness is by itself of evil omen. On this very point I have been much interested in the paper by Mr. Tredinnick which you will find in the *British Medical Journal* of Nov. 24th, 1900. "In a case," Mr. Tredinnick writes, "in which I called to my aid the late Sir James Paget in consultation, the unconsciousness had lasted three days and there seemed no means of judging how much longer it might last. He gave it as his opinion that, other things being equal, a certain amount of unconsciousness was good for the patient, as the shaken brain had time more or less to recover, that condition of unconsciousness being for the brain something akin to what a splint would be to an injured limb." I have not looked upon unconsciousness quite in this light myself, but I certainly hold that cases in which unconsciousness has been prolonged are not necessarily those in which there is the worst prognosis. Recently I have seen a man who was unconscious for 14 days after a fall while out hunting, and though there are several abiding local paralyses of special cranial nerves from injury with basal fracture his mental condition shows nothing wrong. This is by no means always so. Concussion of the brain may be followed by all sorts of lasting disturbances, by changes in temper and disposition, by impairment in mental power and physical endurance, by incapacity for the same amount of headwork as before, and even by distinct insanity. In the paper to which I have made reference you will find some interesting examples of the kinds of results which may follow severe head injury. We have seen similar results ourselves in this hospital practice. I do not know how such results may be predicted, but I shall not pursue the subject further now, nor discuss with you the question of treatment, operative or other; but this I would impress upon you: that adequate rest must be given to the brain and that patients must not be discharged too early from the wards.

A SERIES OF 10 SUCCESSFUL CASES OF CÆSAREAN SECTION.[1]

BY W. J. SINCLAIR, M.D. ABERD.,
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OVER 50 years ago Dr. Radford of Manchester, in concluding an account of his cases of Cæsarean section in which he lost three mothers and three children out of five cases wrote: "Notwithstanding the unfavourable aggregate results of the Cæsarian section in Great Britain and Ireland I think from my own experience, shown in the above statements, I am justified in advocating it as an operation of election, not merely having recourse to it as one of necessity according to our present obstetric rule when no other means can suffice, but to give it a preference over the use of the crotchet in cases when neither premature labour, the long forceps, these two operations combined, or turning will meet the exigencies of the case. I am a warm, and I hope a sincere, advocate of its adoption and doubt not but if it is early and properly performed and if the after-treatment is judicious it will be even more successful than it has been in my hands."[2] Now it is not my present intention to write a history of the Cæsarean section in this country nor even, formally at least, to attempt a plea in favour of the operation, but I quote with satisfaction the words of Dr. Radford, whose success was only limited, as indicating the aversion with which the experienced accoucheur when confronted with the dire alternative proceeds to perform the so-called operation of craniotomy upon a living and viable child. My quotation will, I hope, hint to you the frame of mind in which I have approached each case to be operated upon. Dr. Radford lost 60 per cent. of both mothers and children. I, with the advantages of the recorded experience of another half-century, have lost neither mother nor child. Yet I should never, I believe, resolve on the operation with a light heart, but constantly, as if it were one's first case, see to it that the operation was "early and properly performed" and that the after-treatment was to the best of my judgment "judicious." It is only, I believe, in this way that the bounds of the indications for the operation will become extended and the results so improved as to banish from practice some of the remaining opprobria of the obstetric art. Without further preface I shall proceed to give the details of my cases, reserving to the end some criticisms and

[1] A paper read at a meeting of the North of England Obstetrical and Gynæcological Society on Nov. 16th, 1900.
[2] Successful Case of Cæsarean Section, with remarks, read at Worcester, August 1st, 1849, by Thomas Radford, M.D., &c.

remarks on indications and technique which the experience that I have obtained suggests.

CASE 1.—The patient, a woman, aged 38 years, X-para, and of German nationality, admitted into the Maternity Hospital on August 29th, 1890, in labour, was confined on the same day and was discharged on Oct. 17th. Her condition during pregnancy had been fair, except for severe "rheumatic" pains. She had suffered from these pains for four years (osteomalacia), but especially during her present pregnancy. Lately she could only move about the house with a sort of painful sliding motion. There had been no complication of pregnancy except the pains mentioned, which were referred chiefly to the pelvis. The patient had had eight children and one miscarriage. In her first confinement delivery had been effected with instruments under chloroform. The child was alive and was living at this time. The puerperium was normal. Her second confinement, which was one of spontaneous labour, was over before her medical attendant arrived. The child lived and was then 15 years of age. There was no "rheumatism" in those days. Spontaneous labour characterised her third confinement also; the child lived for nine years and then died from hydrocephalus. Her fourth labour was a rapid spontaneous one of a living child, who after surviving for 11 months succumbed to "epileptic" fits. There was no "rheumatism." No instruments were used in her fifth labour and the child was still living and aged 10 years. At the sixth confinement, which took place in hospital, instruments were required. The child was living still. There had been no "rheumatism" during pregnancy. The seventh labour also took place in hospital and was effected with instruments under chloroform. The child was living. "Rheumatism" had come on. In her eighth confinement the patient was attended by Dr. Waddell of Rusholme. Chloroform and instruments were said to have been used, but the child came feet first. There was a history of turning having been performed. The child was dead, but was alive at the beginning of the labour. The patient had "rheumatism" all the time; she could hardly walk at all. She was better after the confinement and could walk without sticks. Dr. Waddell warned the patient that if she became pregnant again she must let him know by the sixth month. The next time he heard of her was when he received a summons to attend her when she was in labour at full term. There had also been, as I have said, one abortion. The patient had suckled all her living children. On examination the patient's general appearance was good. She was well nourished and the breasts were large. On palpation the height of the fundus was found to be to the ensiform cartilage. The uterine tumour was very prominent. The conjugate diameter of the true pelvis was about two and a quarter inches. All proportions were lost. The pelvis was crumpled up. The rami of the pubis came so close that the index finger could only be inserted into the arch. Diagnosing the presentation, the head appeared to be unusually high up in the false pelvis. Pains began at 9 A.M. on August 28th. They were strong in character and regular. Artificial interference had to be resorted to, and Cæsarean section was performed. The outlet being contracted (the inguinal canal two and a quarter inches), Porro's operation was performed on the 29th at 4 P.M. Chloroform and ether were used and I was assisted by Dr. Waddell and the house surgeon. An incision was made reaching from two inches above the umbilicus to near the pubes. Bleeding was stopped by the forceps. The peritoneum was carefully opened, and the gravid uterus was brought forward into the wound. An elastic ligature was passed round the neck of the uterus, ready to be tightened when the incision was made. An incision was then made into the anterior wall of the uterus. This came upon the placenta which was cut through. The ligature at the neck of the uterus was tightened and the child was removed, followed by the placenta and membranes. Very little hæmorrhage occurred. The neck of the uterus was compressed by means of the rubber tube by the assistant. Two large pins were passed through the lower portion of the uterus. A wire *serre-nœud* was applied and tightened, but only to restrain hæmorrhage, not to cut. The uterus was then rapidly removed with scissors with but little hæmorrhage. The ovaries and tubes were removed separately, their stumps not being included in the wire. The peritoneum of the stump was secured by sutures to the parietal peritoneum round it and the *serre-nœud* was left on. The abdominal incision was closed in the usual way, leaving the stump projecting from the lower end of the incision which was prevented from sinking back by the pins in the usual way. A drainage-tube was inserted into the peritoneal cavity, reaching into Douglas's space. The wound was dressed with lint and perchloride solution (1 in 2000). The patient bore the operation very well and suffered very little from shock, perhaps because so little blood was lost. The after-treatment was carried out as follows. The temperature at 8 P.M. on the same day was 98°F. and at 10 P.M. it was 99°, and the pulse was 106. Beef-tea and brandy enemata were administered and warm water (a teaspoonful at a time) was given by the mouth. The wound was dressed on the 30th with perchloride solution (1 in 2000), the fluid was drawn off through a drainage-tube, and a catheter was passed every six hours. Suitable nourishment was given. There was no sickness. On Sept. 1st the patient was taking liquid food very well. The urine was passed naturally but the bowels were constipated. Five grains of calomel in separate doses were given and the wound was dressed with perchloride solution (1 in 2000). The patient was sick. On the 3rd the patient took ordinary diet. The wound was poulticed every three hours. On the 4th the vaginal douche was employed and poultices were continued every three hours. There was a great deal of discharge. Several stitches were removed. The stump was sinking. The temperature was 100·4° and the pulse was 80. Ordinary diet was taken and the patient slept well. On the 5th antiseptic poultices were continued every three hours. On the 6th the *serre-nœud* was tightened. The sloughing stump came away without any hæmorrhage or breaking any of the adhesions which had been formed. On the 8th the poultices were discontinued and the wound was dressed with carbolic glycerine (1 in 30). On the 13th the patient looked very well and only rheumatic pains were complained of. On the 22nd she sat up for the first time and said that she felt very well. On the 26th she got out of bed and sat in an easy chair. There was no pain in the abdomen. The rheumatic pains were much less severe and she could move her feet better than she had done for months. On Oct. 14th a small portion of the wound had not healed and there was still some pus. Otherwise the patient was very well On the 17th the wound was still the same. A dressing of red lotion and mercury was employed and the patient was discharged. The child, a male, was born alive and was of full development, measuring 22½ inches in length, and weighing 7 lb. 8 oz. He had improved much when the patient was dismissed from the hospital, but was still having convulsions. He was fed from the bottle.

Note on Case 1.—The nursing notes have been given, perhaps, at too great length. My object is chiefly to call attention to the long and unsatisfactory progress of healing which must be a constant feature of the extra-peritoneal method of dealing with the stump. The obstetric history shows the onset of the symptoms of mollities ossium and its extremely rapid development during the last pregnancy. This disease called for the removal of the tubes and ovaries, and the operation appears to have been moderately successful. I saw the patient at the Southern Hospital about two years after the operation. The child was dead and she had neglected to wear her abdominal belt, so she had an enormous ventral hernia. I have never seen her since, but some inquiries were made about her this summer by the practitioner who was then attending her. I sent him an account of the operation, but I have received no further information as to the progress of the mollities ossium. No milk ever appeared in the urine after operation.

CASE 2.—The patient, aged 23 years, primipara, was admitted to hospital on Nov. 27th, 1890, on which day she was confined, and was not discharged until Jan. 10th, 1891. It was elicited that menstruation had begun at the age of 15 years, that its duration was three days, and that the quantity was small. The period of the last menstruation was from Feb. 1st to 7th. The date of her quickening she did not remember. Her condition during pregnancy had been normal. There were no complications. On examination the patient was found to be a starved-looking deformed dwarf. Her breasts were good. On palpation the fundus was found to reach the ensiform cartilage. The uterine tumour was very prominent. The measurements of the pelvis were as follows: iliac crest, nine inches; iliac spine, seven and a half inches; external conjugate, six and three-quarter inches; true conjugate, three inches; and the transverse diameter of the outlet, two inches. A prognosis of obstruction of labour on account of the deformity of the patient was made. The pains, which began at 3 A.M., were strong in character. Cæsarean section and Porro's operation had to be

resorted to. When the patient came to the hospital on the morning of Nov. 27th the os was found to be of the size of half-a-crown. This dilated rapidly and the head came within reach of the finger but it could not be delivered on account of the contracted outlet, which measured roughly two inches. The patient was greatly deformed, especially about the legs. The urine contained a large amount of albumin. I decided to perform Porro's operation. At 9 P.M. the patient was put under chloroform. An incision was made from above the umbilicus right down through the linea alba two inches above the pubes. The vessels were secured by the forceps. The peritoneum was opened. The gravid uterus was brought out through the incision and an indiarubber ligature was passed round the neck of the uterus. An incision was then made into the anterior wall of the uterus several inches in length and the child was rapidly removed, but the placenta was left. Slight hæmorrhage ensued. As soon as the child was removed the elastic ligature was tightened to control the hæmorrhage. The placenta came away. The *serre nœud* was then applied below the body of the uterus and tightened, and pins were passed through. The peritoneum was then stitched to the uterus, and the uterus was cut away without much bleeding. The abdominal cavity was irrigated with saline solution and a drainage-tube was left in. The stump of the uterus, with *serre-nœud* tightened, was brought forward in the abdominal wound, another pin was passed through the stump, and the peritoneum of the stump was sutured to the parietal peritoneum all round, thus securing the stump in the wound. The wound was dressed with corrosive sublimate solution (1 in 2000) and the stump was dressed with glycerine and carbolic. The patient stood the operation well and did not suffer much from shock. The child, a female, was alive and weighed six pounds. Enemata of beef-tea and brandy were administered. The patient was restless and she was sick twice. The temperature was 99° F. and the pulse was 120. On the 28th the wound was dressed with $HgCl_2$ (1 in 2000) and the stump with carbolic glycerine (1 in 10). The tube was syringed out, removing some clots of blood. The wound was dressed again at 11 P.M. and the tube was removed, the discharge being quite clear. The patient had a good deal of pain. Morphia was administered hypodermically and 34 ounces of urine were drawn off. There was a slight discharge from the vagina. Beef-tea and brandy enemata were administered and warm water was given by the mouth. On the 30th the patient was better; there was less pain, the pulse was 116, and the temperature was 99°. The lower part of the wound and the stump were dressed as above and calomel was administered. There was no milk in the breasts. The urine contained albumin and a trace of sugar. On Dec. 1st the patient was better and the bowels were moved. The wound was dressed and the stump was covered with powder salicylic acid 1 and 2 tannic acid. The pulse was still quick. When the wound was dressed on the 3rd there was a good deal of foul discharge from the stump. The pulse was slower and there was small quantity of sugar and albumin in the urine. The wound was dressed three times on the 4th with spirit lotion. Ordinary diet was taken. On the 5th the *serre-nœud* was removed, with the stump and one pin. On the 6th the wound was dressed three times, the stump and pin were removed, and the cavity was dressed with lint steeped in carbolic lotion. On the 7th the wound was brought together with strapping. A dressing of red lotion was used on the 9th and the wound was healthy and granulating. The patient went home on Jan. 10th quite well. Her general condition was now very good. No milk ever appeared in the breasts, but there was a trace in the urine. The wound healed. The general condition of the child was poor. There was a specific rash and the hair was falling off.

Note to Case 2.—The notes hardly convey a sufficient idea of the deformities of this poor creature. Her extremities were those of a little child, the lower ones being specially ill-developed. She had never been able to walk in the ordinary way, but had acquired such mode of motion as her rudimentary legs permitted. The pelvis was also arrested in development and had in all probability lost its symmetry by efforts at locomotion. The patient and the child are still living. A photograph shown to me this month (November, 1900) shows in the child marked traces of the congenital disease.

CASE 3.—The patient, aged 28 years, II-para, was admitted to hospital on Feb. 26th, 1892. She was confined on the same day and stayed in the hospital until March 31st. In her case menstruation had begun in her seventeenth year. It was of the 28 days type and it lasted for five days, the quantity of the flow being large. She had not menstruated since the last week in May, 1891. Her condition during pregnancy had been very good, no complications arising. There had been one previous pregnancy and delivery at full term. Craniotomy had been performed and the operation had left marked traces on the cervix. On examination of the patient when she was admitted to hospital she was found to present a good general appearance. The breasts were small and the nipples were poor. From the right and left iliac spines to the umbilicus the measurements were the same—viz., eight and a half inches, and from the pubes to the umbilicus the measurement was seven inches. The abdominal walls were firm and the fundus was eight inches above the umbilicus. Iliac crest, 10 inches; iliac spine, nine inches. Vaginal exploration: pelvis—external conjugate, six and three-quarter inches; true conjugate about three and a quarter inches. When the patient was admitted on the evening of Feb. 26th the membranes were said to have ruptured some hours previously, and she was having slight pains. She was put to bed and she remained quiet all night. On the morning of the 27th an enema was given, the vagina was douched with perchloride of mercury, and at 10.30 A.M. the membranes again ruptured, as there was a gush of liquor amnii. The patient was anæsthetised with chloroform and an incision of about seven inches in length was made in the middle line, extending from above the pubes to half way between the umbilicus and the ensiform cartilage. The peritoneal cavity was opened with scissors, and the uterus was drawn bodily out and wrapped in cloths wrung out of hot sterilised water, the peritoneal cavity being filled with warm sponges. An incision was made in the middle line of the uterus and its cavity was opened. The placenta was found to be situated anteriorly, the incision being immediately over it. It was peeled off at once and the child was quickly delivered. An elastic band had previously been passed round the neck of the uterus, and at this stage it was tightened to prevent hæmorrhage. The hæmorrhage was slight and no amnionic fluid was liberated through the abdominal incision, the membranes having been previously ruptured and the fluid allowed to drain away. The uterus quickly contracted and the wound in its walls was carefully sutured with deep silkworm-gut sutures and superficial catgut ones. The uterus was then returned into the pelvis, though the pelvis was too contracted to allow it to be replaced like a normal uterus. The abdominal wound was sutured with deep silk and superficial silkworm-gut sutures, a long Keith's drainage-tube being passed through its upper part, passing behind the uterus into Douglas's space. The lower three-quarters of the wound was dressed with carbolic glycerine and strapped, perchloride of mercury dressing being placed over the tube. At 3 P.M. the patient was very restless and a quarter of a grain of morphia was given. She was sick at 5 P.M. The temperature at 6 P.M. was 98·4° F. She slept for an hour. At 8 P.M. she was again sick; small quantities of hot water were given. A vaginal douche of boric lotion was administered. At 10.30 P.M. one-fifth of a grain of morphia was given. On the 28th the patient complained of having had cramp in the leg all night. She dozed at intervals. One-fifth of a grain of morphia was given at 5 A.M. She slept for an hour and a half afterwards. She had been sick a little twice during the night. An ice-bag had been put on for an hour by order of the house surgeon. The urine was drawn off by catheter—36 ounces since the operation. The temperature at 8 A.M. was 99° and the pulse was 100. On March 1st the bowels acted fairly well. The evening temperature was 99° and the pulse was 104. There was very little milk in the breasts. Urine 54 ounces; it contained no sugar. On the 3rd the breasts were distended and hard, and as the baby could not be got to suck the breast-pump was used and the breasts became much softer. There was sugar in the urine. On the 31st the patient went home in very good condition. The child was a male, living, fully developed, and weighing eight pounds. The infant was fed by bottle as it could not be got to take to the breast and showed at the time of the departure of the patient from the hospital much improvement.

Note to Case 3.—This was the first case of conservative Cæsarean section of the series. The patient was of a different class from those in the two preceding cases. She was a clean, healthy-looking woman without any obvious

deformity, though she was rather under size. The appearance of the head suggested rickets in childhood. The pelvis belonged to the flat rachitic type. She was very anxious to have a living child and I did not think it right to produce sterility by any extension of the operation. It may be noted that after the conservative operation the breasts filled and sugar appeared in the urine. This patient came to see me two years later. She was pregnant between three and four months and talked quite cheerfully of a second operation. A message was sent to me about a month later to say that she had miscarried.

CASE 4. — The patient was a woman, aged 35 years, II-para, who was admitted to hospital on April 2nd, 1892. She was confined on the day of admission and was discharged on May 11th. In the case of this patient menstruation, which began at the age of 14 years, was of the 28 days type and lasted three days; it was small in quantity. She had not menstruated since the last week in June. The patient's condition during pregnancy had been very good, but she had suffered from a troublesome cough. At a previous labour at full term craniotomy had been performed. (It was reported to me indirectly that two medical men were occupied "several hours" with the craniotomy.) The patient was sent to the hospital at the seventh month for examination because of the craniotomy which she had undergone six years previously. The conjugate diameter of the pelvis was from two and a half to two and three-quarter inches, and as induction of premature labour would probably end in perforation now and in future pregnancies, the patient was advised to wait for the full term and then to undergo Cæsarean section and Porro's operation. Physical examination on admission at the end of the term of pregnancy showed the general appearance of the patient to be fairly good. The breasts were large and well-formed and the nipples were good. From the right iliac spine to the umbilicus the measurement was nine inches, and from the left iliac spine it was nine and a half inches; from the pubes to the umbilicus measured seven and a half inches. The abdominal walls were firm. Physical examination of the cervix and orifices revealed the os to be dilated to the size of a florin. The rectum was emptied by an enema; there were large hæmorrhoids. The bladder was emptied by the catheter; there was no albumin in the urine. Pelvis: iliac crest, 10½ inches; iliac spine, nine and a half inches; external conjugate, five and three-quarter inches; true conjugate, two and three-quarter inches or less. A vertex presentation and a first position were diagnosed. Labour had commenced at 2 A.M. on the day of admission to hospital and a Cæsarean section was performed at noon. The patient was put under chloroform, the os being dilated but the membranes were not ruptured, and an incision about seven inches long was made in the middle line of the abdomen. The peritoneal cavity was opened quickly with scissors, the uterus was drawn forwards, secured by elastic tubing, and immediately opened into by a longitudinal incision in its lower half, and the child was quickly delivered. The operation up to this point was completed in a few seconds. The abdomen was then packed with sponges and amputation of the uterus by the intra-peritoneal flap method was proceeded with deliberately, the whole of the body of the uterus being removed. All hæmorrhage was stopped as the operation proceeded and the rubber tubing was still retained round the stump in case of emergency. The uterus having been removed, the stump was methodically sutured, the peritoneum of the flaps being brought accurately into apposition and fine silk and catgut sutures were inserted at very short intervals. The hæmorrhage was easily controlled at all points of the operation. The abdominal cavity was irrigated with saline solution, a Keith's drainage-tube was inserted, and the abdominal incision was closed with deep silk and superficial silkworm gut sutures and dressed with sponges wrung out of perchloride of mercury solution. The patient suffered considerably from shock, but she rallied in the course of the afternoon. At 10 P.M. the temperature was 100·6° F., and the pulse was 130. Nutrient enemata of beef-tea and brandy were administered every three hours and warm water was given frequently by the mouth. On the 3rd it was elicited that the patient had had a very comfortable night. There had been no sickness. She had taken milk and beef-tea in small quantities. The morning temperature was 99°. Urine to the amount of 12 ounces was drawn off by catheter. At 11.30 A.M., the wound was dressed and two ounces of red-coloured fluid were withdrawn. The patient remained very well all day, At 8 P.M. the temperature was 100° and the pulse was 120. There was some suggestion of ether bronchitis. Teaspoonful doses of compound tincture of camphor were given to relieve the chest symptoms. The patient was taking nourishment very well. There was no milk in the breasts. On the 4th it was ascertained that the patient had had a very good night, having slept well. The morning temperature was 93·4° and the pulse was 110. Urine, 47 ounces. A vaginal douche of perchloride of mercury (1 in 4000) was administered twice daily. The discharge was moderate. The wound was dressed at 11 A.M. One and a quarter ounces of red turbid fluid were withdrawn. The temperature at 6 P.M. was 100°. On the 5th the patient was very comfortable. The temperature was 99° and the pulse was 116. Urine, 40 ounces; there was no sugar. The discharge of lochia was free. The wound was dressed at 11.30 A.M. A little clear sanious fluid was drawn off, and the glass tube was removed. On the 7th the bowels acted freely. The patient had had a very good night. By the 20th the wound had quite healed, except a small sinus where the drainage-tube was situated. On May 6th the patient got up wearing an abdominal belt. She felt very well. On the 11th she went home apparently well. The infant was also in very good condition. The patient's condition when discharged from the hospital was very good. There was no milk in the breasts. The child, a female, fully developed, was fed from the bottle.

Note on Case 4.—This case presented a problem which every man must solve according to his conscience and to his views as to his functions as a member of a profession that claims to be guided by ethical considerations—How often are we to perform craniotomy upon a woman whose pelvis will not allow of the passage of a viable child, and to what extent is the problem complicated by a second pregnancy? The special form which the operation took arose from the opinion which I had formed with regard to the tedious healing and other objectional features in the extra-peritoneal treatment of the stump. The absence of milk from the breasts after Porro's operation will be again noted, and there was never any trace of sugar in the urine. I was under the impression that this was the first time in the history of obstetrics that the intra-peritoneal treatment of the stump had been adopted. After some literary research I discovered in an Italian medical journal the record of two cases operated on in the same way by Porro and Mangiagalli at Milan some time before. The after-history of the case has not been obtained, as the patient disappeared from the quarter of the city where she formerly resided.

CASE 5.—The patient was admitted to the Manchester Maternity Hospital on April 10th, 1896. She had been visited by a midwife the same morning, who found her to be in labour and at once sent her to the hospital. She was a primipara, aged 25 years, residing in Ancoats. The following facts were noted on the day of operation. Menstruation began at the age of 17 years and its duration was from four to five days and the quantity was profuse. The date of the last menstruation was the second week in July, 1895. She had quickened in the first week in December and had enjoyed very good health during her pregnancy. There was morning sickness for the first two months, but nothing unusual was observed until the beginning of labour. Abdominal examination showed the fœtus to be lying above the pelvic brim and the head in the right iliac fossa. The uterine tumour was extremely prominent and appeared to rise unusually high towards the thorax. At iliac crests, nine and a half inches; at iliac spines, nine inches; external conjugate, four inches. Vaginal examination showed the diameter of the true conjugate to be about two inches; the membranes were protruding. The external genitals were swollen and darkly congested. The patient had the left hip ankylosed and the left thigh flexed upwards and inwards and pressing upon the abdomen. The right leg was normal. She was extremely deformed owing to the condition of the left leg and the extreme degree of lordosis. She was small in size, had lost one of her eyes, and her teeth were very defective and unhealthy. It was at once obvious that the patient could not be delivered even by embryulcia without much tedious and dangerous manipulation, and abdominal section was resorted to as the best course under the circumstances. The patient was put under chloroform and an incision was made through the abdominal wall reaching from half-way between the umbilicus and xiphoid cartilage to within three inches of the symphisis pubis. The position of the left knee caused much embarrassment from first to last. It was owing to

this special deformity that the wound was made so high up. On opening the peritoneal cavity sponges were introduced to prevent escape of the intestines. The uterus was quickly incised, the membranes were opened, and the child was extracted by the leg. The membranes and placenta were then quickly peeled off. During these manipulations the sides of the abdomen were firmly grasped with both hands by Dr. Scott so as to steady the uterus. When the uterus was dragged forward he promptly applied a strong rubber tube round the isthmus to control the hæmorrhage. In hurriedly extracting the child the peritoneum on the left lower angle of the wound was torn to a slight extent. The uterine wound was closed with deep silk and superficial catgut sutures. The sutures were introduced with Hagedorn needles and were passed completely through the muscle. The rent in the peritoneum was also carefully sutured. The sponges had been so placed as to conceal and protect everything except the uterus itself. On removing the elastic tube there was a rapid oozing of blood; this was finally controlled by additional sutures and manipulating and simulating the uterus into firm contraction. The abdominal wound was closed by deep silk sutures passing through the peritoneum and skin and aponeurosis and superficial silkworm gut only including skin. A Keith's drainage-tube was placed in the lower angle of the wound, being directed to the left, where there was something like a pelvic cavity. The projecting portion of the tube was supported by antiseptic sponges, and a sponge wrung out of corrosive sublimate solution covered by guttapercha tissue completed the essential portion of the dressing. The operation was completed at 1.45 P.M. At 2 P.M. the temperature was 98° F. and the pulse was 116. At 4 P.M. the patient was rather restless; one-eighth grain morphia was given, after which she slept at intervals till 6 P.M.; the temperature was 98·4° and the pulse was 116. Enemata of beef-tea and brandy were given, also sips of hot water by the mouth. There was no sickness. Seven ounces of urine were drawn off by catheter. There was a small amount of albumin. At 10 P.M. the patient was fairly comfortable. The temperature was 100·8°, the pulse was 112, and there was very little hæmorrhage from the vagina. On the 11th, at 10 P.M., the temperature was 101° and the pulse was 140. An icebag was applied to the abdomen. An hour later one-eighth of a grain of morphia was injected. Flatus was passed. The patient was slightly sick once. The wound was dressed at 11 A.M. on the 12th. There was no tenderness or distension. There was no milk in the breasts. Sugar was found in the urine but no albumin. The temperature rose gradually during the day and at 10 P.M. it was 103° and the pulse was 140. A vaginal douche was given during the evening. The lochia were quite sweet. The patient was restless but not in pain. Flatus was passed. On the morning of the 14th the patient felt very well. The temperature was 101·8°, and the pulse was 120. The bowels had acted freely during the night. She was taking plenty of milk. There was no milk in the breasts. A vaginal douche was given. The lochia were quite sweet. The wound was dressed at 9.30 A.M. It looked very well. At 10 P.M. the temperature was 102·8° and the pulse was 120. The patient had a very comfortable day, during a great part of which she slept. There was still a trace of sugar in the urine but no fulness of the breasts. At 2 P.M. on the 15th the temperature was 104°, the pulse was 130, and the respirations were 37. The patient did not complain of anything and seemed to be comfortable enough. At 6 P.M. the temperature was still 104°. Dr. A. W. W. Lea washed out the uterus but found nothing abnormal or offensive. The wound was dressed again and some pus was withdrawn. Two sutures were removed. 10 grains of quinine were given. On the 16th it was ascertained that the patient had slept well during the night and she felt very comfortable in the morning. The temperature had come down gradually during the night and at 8 A.M. it was 101°, the pulse was 112, and the respirations were 30. The cough being a little troublesome a dose of cough-mixture was given. She was taking milk and beef-tea. On the 18th the patient felt very well. The temperature was 98·8° and the pulse was 104. At 6 P.M. the temperature was 101·2°. and the pulse was 102. The cough was again rather troublesome and medicine was prescribed. She was taking milk, beef-tea, and eggs. There was no trace of sugar in the urine. She passed a rather restless night. On the 19th the temperature was 100·6° and the cough was troublesome. At 10.30 A.M. the wound was dressed; it looked unhealthy and not inclined to heal. On the 23rd the patient was going on well and the temperature was normal. The wound, which looked healthy, was strapped and dressed with red lotion. There was no lochia. The douches were continued. On the 29th the patient was very well and the wound looked healthy. A swelling had formed over the sacrum; it looked inflamed, but was not painful. Boric fomentations were applied. The temperature rose in the evening to 100·8° and the swelling over the sacrum was much inflamed. On the 30th the patient was taking full diet, with stout. The evening temperature rose to 103·8°. Dr. T. V. Cunliffe opened the abscess over the sacrum and about an ounce of pus escaped. From this time there was nothing to record except the ordinary facts of convalescence. The involution proceeded only slowly but fairly satisfactorily. The uterus, owing to the narrowness of the brim and other deformities, appeared to remain above the true pelvis, even when the patient was well and ready to go home.

Note on Case 5.—There was at first some ground for fear that cellulitis might occur, owing to the injury to the peritoneum so low down in front of the uterus. The formation of abscess, owing to this cause, was not infrequently recorded as the cause of death in the earlier days of the revival of Cæsarean section. This was the reason for keeping in the drainage-tube for so long a time. It produced a sinus by which an abscess high up under the peritoneum, on the left side to which the injury inclined, might have been reached with comparative facility and safety. In the absence of obstetric symptoms it is probable that the high temperature and pulse were due to some extent to the bronchitis. The uterus was not removed according to Porro's method, or any modification of it, in the belief that the conservative operation was the safest and best. The child was living. It was even vigorous from the first, showing no signs of asphyxia. It was a male, fully developed, and weighed at its birth seven and a quarter pounds. The infant was strong and well when the mother left the hospital, and weighed nine and a quarter pounds. As to the patient's history, the following information was obtained by Dr. Cunliffe, who was the house surgeon during her convalescence. She had been quite healthy until she was five years of age. She then had a fall to which she attributed her condition. She became lame in her left leg after her fall and was admitted as an in-patient to the Ancoats Hospital from which she was discharged as incurable. She did not appear to have been treated for hip-joint disease. Later she was an in-patient in the Clinical Hospital for nine weeks and she said that she was discharged from there as incurable. While she was in this hospital extension appears to have been applied to the left leg for hip-joint disease. At the age of nine years she was admitted to the Crumpsall Workhouse Infirmary where she remained for three years. There two operations were performed upon her, the left hip-joint being excised. At the time she left the workhouse hospital several sinuses still remained about the left hip-joint which continued to discharge for about three years. By that time the hip-joint was flexed to the same extent as at present and her spine was in the same condition of curvature (lordosis). At the end of three years the sinuses had healed up and there had been no discharge from them since. She had had no further trouble with the leg except that arising from the position in which it was ankylosed. The right leg was not abnormal and the patient could walk with the aid of a crutch. The patient went home on June 9th.

CASE 6.—The patient, a married woman, aged 30 years, was admitted to the Southern Hospital. A diagnosis of pregnancy and solid ovarian tumour was made. The patient was admitted to the Maternity Hospital on Dec. 31st, 1899, in the first stage of labour. On examination it was noticed that the abdomen was of a peculiar shape, the uterine tumour being elongated upwards. At the time labour pains were few and weak, although other abdominal pain was present almost continuously. External examination showed that the abdomen was distended by the pregnant uterus but the abdominal ovoid was peculiarly elongated. The fœtal head was felt quite above the pelvic brim and was moveable, and the fœtal heart was distinctly audible high up in the abdomen. Per vaginam the os uteri was found to be displaced upwards and forwards above the pubis and was difficult of access to the examining finger. Only slight and commencing dilatation of the os uteri was found. Bulging into the posterior vaginal wall, commencing about one and a half inches from the vulval orifice, was found a large mass, not fluctuant, but of unequal consistence, and apparently fixed.

This mass was also felt to bulge into the anterior rectal wall. By combined recto-vaginal examination it was readily mapped out in Douglas's space. On examination the head was still above the brim and moveable. The os uteri was still found to be displaced upwards and forwards by the tumour and it was now found to admit two fingers so that the fœtal head could be felt. The tumour itself was still fixed in the same position in Douglas's space. Cæsarean section and ovariotomy were performed on the day of the patient's admission to the hospital, ether being employed. An incision from seven to eight inches long was made in the linea alba. The abdominal cavity was opened and the uterus was exposed. The uterus was withdrawn from the abdomen and protected with warm sponges and towels; an elastic tube was passed round the neck of the uterus and was drawn tight. A large sponge was placed behind the uterus. An incision was then made down the middle line of the anterior uterine wall. Liquor amnii gushed through the wound. The fœtus was promptly extracted through the wound and the umbilical cord was divided. The placenta (which was on the posterior wall of the uterus) and the membranes were peeled off and withdrawn. The shrunken uterus was closed by deep and superficial sutures. The elastic tube was removed and only trifling hæmorrhage occurred. Next the tumour was withdrawn from Douglas's pouch. It was found to be a large fleshy, not fibroid, ovarian tumour with a pedicle. The pedicle was ligatured and the tumour was removed. A Keith's drainage-tube was inserted. The abdominal wound was closed by deep silk sutures and by superficial sutures. The pulse was very good all through the operation. The operation, which was begun at 4 P.M., was completed at 5.30 P.M. At 6.50 P.M. an enema of three ounces of beef-tea and an ounce of brandy was administered. The pulse was 104 and good The patient had to have morphia administered hypodermically several times in doses of one-eighth of a grain to relieve pain which she complained of during the first fortnight and which was caused principally by flatulence. She also had slight headache at times. Vomiting was slight. The temperature was high for the first eight days (from 101·2° to 103·8°). It then gradually became lower, and at the end of two weeks it was normal. The pulse was rather quick for the first 10 days (from 100 to 120), then it fell below 100 and remained steady. Flatus was passed 24 hours after the operation. Three grains of calomel in hourly doses of one grain were given 28 hours after the operation, followed by half a seidlitz powder given six and eight hours after the last dose of calomel, and then again followed in another six hours by a turpentine enema. The bowels were then moved. The bladder was catheterised during the first 27 hours. A trace of sugar appeared in the urine on the day following the operation. There was some hæmorrhage from the vagina in the first 24 hours. The character of the discharge then changed. Vaginal douches of weak carbolic lotion (1 in 100) were administered. On the fifth day after the operation the baby was put to the breast and suckled at once, but would not take it again when put to the breast and so was fed by hand. The mother had not much milk, and there was no trouble with the breasts. A fluid diet was given during the first week. The wound was first dressed 20 hours after the operation. The dressing was done in the usual way, and the drainage-tube was withdrawn. It was dressed again in 48 hours; it looked well. The abdomen was slightly distended. Dressing was done frequently. There was suppuration along the suture track. The wound had to be fomented. The patient made a good recovery, and was discharged eight and a half weeks after the operation.

Note.—This patient was examined in November and the pelvis was found to be normal; there was hardly a trace of tissue changes at the site of the stump of the tumour. The uterus was high and adherent to the anterior parietes as in a case of ventro-fixation.

CASE 7.—The patient was a married woman, aged 27 years, who had had one child (stillborn). She was admitted to the Maternity Hospital on April 4th, 1900, and was advised to wait for full term. She was confined on June 5th and was discharged on July 9th. Menstruation had begun at the age of 17 years. It was of the 28 days type, lasted three days, and was of moderate quantity. The period of the last menstruation was from August 30th to 31st, 1899. Quickening had taken place in January. The patient's condition during pregnancy had been very good. She had been delivered of the stillborn child by forceps on Feb. 7th. The patient had gone to the full term on that occasion. Her health during her present pregnancy had been good. In general appearance she was under-sized, but not deformed. Her breasts were of good shape. The fœtal heart was heard on the right side. Pelvis: iliac crest, nine and a half inches; iliac spine eight inches; external conjugate five and seven-eighths inches. A vertex presentation was diagnosed. Labour occurred on June 5th when Cæsarean section was performed at 11 A.M. The patient was put under ether and a vertical incision was made in the middle line of the abdomen; the uterus was made to bulge through the incision, and an indiarubber loop was thrown round the cervix. The uterus was opened by a vertical incision, the placenta which lay in front was torn through and pushed aside, and the child was removed. The loop was then tightened and the uterus was sewn up by deep silk and superficial catgut sutures, and the abdominal wound by deep silk and superficial silkworm gut sutures. There was no drainage. A dressing of carbolic and glycerine was employed. The membranes were not punctured before the operation. The operation was arranged for and performed in the absence of labour. The child, a male, was alive and was fully developed—length, 20 inches; weight, eight and a half pounds. The condition of the patient on dismissal was good. There was not much milk. The general condition of the child was also good. The breast and the bottle were used in feeding the infant. The umbilicus healed. The patient made a good recovery and the wound was quite healed by the twelfth day. During the day of the operation and on the following day the patient had severe after-pains. These were thought to be induced or increased by the ergotine which had been given. Their severity was modified by morphia. When eight days old the infant weighed six and a half pounds, did not seem very strong, and gained only one pound in weight from the eighth day to the time of the departure of the mother from the hospital.

Note.—When this patient was examined in November it was found that complete involution of the uterus had taken place, but the uterus was high up and adherent in front as after ventrofixation.

CASE 8.—A married woman, aged 31 years, who had had two children and upon whom craniotomy had been performed on each occasion, was admitted to the Southern Hospital on June 10th, 1900. A diagnosis of contracted pelvis and pregnancy was made. The patient having been twice pregnant, but on each occasion craniotomy having been necessary, she, in order to have a living child, gave her consent to Cæsarean section. It was elicited that menstruation, which was of the 28 days type, from four to five days in duration, and moderate in quantity, had been regular and painless. She had last menstruated in the middle of September, 1899. When examined on admission, the patient being in labour, the os was found to be of the size of a florin. The operation of Cæsarean section, which was proceeded with at 4.15 P.M., was completed at 5.15 P.M. A vertical median incision was made in the abdomen and the gravid uterus was made to protrude. An incision was made in the uterus after a loop of indiarubber had been thrown round the cervix. The placenta lay in front; it was rapidly torn away and the child was taken out. The loop was tightened and deep silk and superficial catgut sutures were inserted into the uterus and also in the abdominal incision. There was no drainage. A dressing of carbolic and glycerine was used. Previously to and at the end of the operation one-hundredth of a grain of ergotin was injected hypodermically. A rise of the temperature and quickening of the pulse, owing probably to some suppuration in the suture tracks, followed. The mother could not suckle the child, the breasts not developing at all. Pain was complained of at intervals during the first 48 hours. Morphia in doses of one-eighth of a grain was given hypodermically when necessary. There was no vomiting to speak of until after the patient had had calomel; then she vomited two or three times. During the first nine days after the operation the temperature was high. 12 hours after operation the temperature rose to 102° F. and remained high, rising to 104·2° on the evening of the fifth day. It then gradually fell to normal on the ninth day and remained steady. The pulse remained under 100 during the first 24 hours; then it quickened and was rather rapid for six days (from 100 to 120). Eight days after the operation it fell to below 100 and remained steady. Flatus was passed 41 hours after the operation and after giving calomel. Five grains of calomel in one-grain doses were given 24 hours after the operation, followed in 16 hours by a turpentine enema.

The bowels were then well moved. The bladder was catheterised for the first 12 days. There was no sugar in the urine. There was considerable suppuration along a suture track which had to be poulticed and fomented. There was slight hæmorrhage from the vagina during the first 36 hours. On the fourth day after the operation vaginal douches of boric lotion were given and were continued daily. Fluid diet was ordered as usual. The patient made good recovery and left the hospital nine weeks after operation, she and the child being quite well.

Notes from the Maternity Hospital.—The child, a female, was alive and weighed six and a half pounds. Development was premature. The condition of the child on dismissal was good. The bottle was the medium of nutrition. When the patient was examined on Nov. 10th the cicatrix was 12 centimetres (four and three-quarter inches) long. The uterus was high up and fixed to the abdominal wall. It lay a little to the left. The promonotory could be easily felt with the index finger.

CASE 9.—The patient, a married woman, aged 28 years, who had had two children, was admitted to the Maternity Hospital on August 3rd, 1900, her confinement taking place on August 16th and the date of her discharge being Sept. 22nd. Menstruation had begun at the age of 16 years. She had last menstruated in November, 1899. Quickening had taken place in April. The two previous pregnancies had resulted in delivery at full term; one of the children was stillborn and the other lived 24 hours. Labour in the former case had lasted 38 hours; in the second case, in which the forceps was employed and craniotomy had to be performed, it was of short duration and chloroform was used for three and a half hours. During her present pregnancy the patient had had good health. On examination she was found to be small and delicate—a rachitic dwarf. The nipples were rather flat. The height of the fundus was to the level of the ensiform cartilage. It was vertical and ovoid. The head of the fœtus was fixed in the brim, the back being to the left side of the mother and the limbs to the right side. A uterine bruit was heard. The fœtal heart was heard on the mother's left side. The cervix was dilated and the presentation was a vertex one. An enema and the catheter were used to the rectum and bladder. The pelvis, roughly estimated, was flat rachitic. Cæsarean section was performed on August 16th at 6 P.M., Dr. Lea and Dr. Scott assisting in the work. Ether was administered. The abdomen was opened in the middle line; the uterus was exposed, brought out of the wound, wrapped in hot towels, and incised. The child was removed. The placenta was removed without difficulty. The uterus was then sutured, and having contracted in a most satisfactory fashion was returned to the abdominal cavity, which in turn was sutured. There was no drainage The vagina was packed with CHI_3 gauze for 24 hours. The child, a female, was alive and presented a small incision on the back. She was fully developed and weighed six and three-quarter pounds. The placenta was oval and its weight was one and a half pounds. The membranes were ruptured during operation. The patient was dismissed on Sept. 22nd, five weeks after the operation. There was one stitch abscess, but otherwise the wound healed well. The infant was kept on the breast for the first fortnight; then, as the mother's milk was not enough, she was lastly bottle-fed, and eventually was entirely dependent on the bottle. On the eighth day, as the pulse and temperature indicated some retention of decidua and its infection, Dr. Lea administered an intra-uterine douche. This was followed by a rigor, the temperature rising to 106° F.; after this, save for a temporary rise of temperature on the following evening, the patient made a good and steady recovery in spite of a small stitch abscess which developed near the lower end of the incision.

CASE 10.—The patient, a married woman, aged 26 years, the mother of six children, was admitted to the Southern Hospital on Oct. 4th, 1900. The diagnosis was one of pelvis contracted to a point under possibility of a viable child being born, and the pregnancy was at or near full term. The first child had been delivered dead at eight months. It was thought by the medical attendant to have been dead for some time. The second pregnancy resulted in the delivery of twins and a resort to craniotomy; the third and fourth in delivery at nine months and craniotomy; and the fifth at seven months with craniotomy. The anterior superior iliac spine measured nine and three-quarter inches, the crest 10½ inches, and the external conjugate six and five-eighths inches. Examination per vaginam made during convalescence showed a high degree of antero-posterior contraction. The urine when examined on Oct. 5th had a specific gravity of 1020, was acid, and contained no albumin or sugar. Cæsarean section was commenced under ether on Oct. 6th at 10.30 A.M. and completed at 11.30 A.M. without waiting for the onset of labour pains. The membranes were punctured before operation. An abdominal incision was made as usual, as also was a uterine incision. The indiarubber loop was thrown round the cervix and tightened on the removal of the child. The placenta lay in the fundus uteri and posteriorly. The child when removed breathed immediately. The uterus was sutured with silk and catgut—about 10 of each. In the abdomen silk and silkworm-gut sutures were used. The silk sutures of the uterus were passed to the margin of the endometrium and drawn very tight. With superficial catgut there was no attempt at sero-serous apposition. The wound, after oozing had ceased and the uterus had been kneaded, was rubbed with iodoform. No drainage was needed. The patient loss a considerable amount of blood per vaginam during the next hour and some clots during the afternoon. Ether pneumonia developed in two or three days. Digitalin was administered hypodermically at the end of a week. Aromatic spirits of ammonia and stimulants were given for the pneumonia. After the operation the patient was very restless. There was considerable hæmorrhage. One-fiftieth of a grain of ergotin was injected two hours after operation. Morphia was also given hypodermically and a rectal injection of 20 ounces of saline solution and two ounces of brandy was administered. The hæmorrhage still continued; pressure over the pubes and an icebag were applied. In three hours one-hundredth of a grain of ergotin and one-sixth of a grain of morphia were again injected. The hæmorrhage became less, but did not entirely stop. During the first 48 hours a bloodclot came away at intervals. The hæmorrhage then almost ceased, there still being some blood-stained discharge. Boric douches were given at intervals daily. On the evening of the day of operation bronchial symptoms set in. The patient did not complain of very severe pain after the first two or three hours, and the vomiting was slight. The temperature immediately after the operation was very low—96·8° F. It gradually rose and eight hours after the operation (10 P.M.) it was 101·2° and the pulse was 146. The temperature gradually fell to 98·2° by the following morning, but began to rise again, and in 48 hours after the operation it was 101·6°. It remained high (from 100° to 103·6°) for 18 days, and on the nineteenth day (Oct. 26th, 21 days after the operation) it fell to normal and remained steady. The pulse was rapid (from 146 to 104) from the time of the operation to Oct. 26th, when it fell to below 100. The temperature and pulse rose and fell together during the acute stage of the illness. The respirations were quick and laboured, varying from 28 to 44. In 24 hours after the operation they were 44. There was no pain in the chest. The expectoration was slightly "rusty" on the fourth day after the operation (Oct. 9th). The sputum was only "rusty" once; at other times it was "frothy." The patient did not expectorate freely. There was a slight cough. The wound was dressed for the first time seven days after the operation, when one deep suture was removed. There was some slight suppuration along the suture track. The wound was again dressed in two days, when there was very slight suppuration, which soon cleared away, and the wound healed quickly. The abdomen became distended, but there was no tension or tenderness on touch at any time. Flatus was passed 48 hours after the operation after the administration of five grains of calomel in one-grain doses at intervals of one hour, followed by a turpentine enema. In four hours the bowels were well moved and much flatus was passed. There was no further trouble with the bowels. The bladder was catheterised for 24 hours. There was no sugar in the urine. The patient had no abdominal symptoms. Suitable treatment for the broncho-pneumonia was adopted.

Note.—This patient was examined on Nov. 3rd. The abdominal cicatrix measured five and a quarter inches and the fundus uteri at the lower end of the wound was adherent, anteverted, as after ventrofixation, but otherwise normal; there was no perceptible exudation. The patient was discharged on Nov. 27th looking very well and the child was healthy.

General Remarks.

In addition to the points to which attention has been called in the special note under each individual case there are innumerable details with regard to surgical technique, after-treatment, &c., some "organic details," some less important, that it would be desirable to touch upon if time

permitted. It will be observed by the critical reader when this paper is printed that the nursing notes are given sometimes in considerable detail. This is done in the expectation of drawing criticism as to whether the after-treatment has been what Dr. Radford called "judicious"; of eliciting suggestions from the experienced in the operation with the object, not only of enabling the patient to escape with her life, but of producing favourable post-operation and convalescent stages and diminishing, as far as possible, the dangers and discomforts of the future.

The selection of the time of operation is a matter on which a good deal of difference of opinion appears to exist. In the majority of cases there can be little doubt that in the future, as at present and as in the past, we shall have no choice but to do the best we can with a patient already in labour for a longer or a shorter time. With regard to the time of operation there is a remarkable contrast between the practice of the present time and that of 50 years ago. The Cæsarean section was looked upon then as the last resort and a dire necessity. Then the operation was performed upon a uterus which had become completely exhausted by days and nights of labour; now when the operation is performed it is usually done without delay and the condition of the patient and of the parts to be operated upon are comparatively favourable. It might have been noticed that in two at least of the cases in this series arrangements were made for the operation to be done on a certain day and at a certain hour, just as if they had been cases of abdominal section for tumour. It has been objected that when this is done there may be danger from atony of the uterus. It is astonishing that such an objection should be raised in the face of our experience of induction of premature labour and emptying the uterus for what we believe to be sufficient reason at any stage of pregnancy whatsoever. Another objection, that the os will not be found sufficiently dilated, I believe to be also groundless, whether the patient be primipara or otherwise. The fewer manipulations of the uterus, especially per vaginam, the better, and I have seen no reason to suppose that dilatation of the cervix or the introduction of a cervical drainage-tube in a woman operated on before the onset of labour was at all necessary or even could be otherwise than injurious.

Whether it has been expressly stated or not in the notes, the incision of the uterus has invariably been postponed until the uterus could be drawn forward out of the abdominal wound, and an elastic tube has been always put round so as to be ready to compress the uterine vessels in case of emergency. The uterus has been kept warm by being wrapped in cloths wrung out of sterilised hot water and the bowels have been protected by a suitable packing of sponges. It may be objected that this requires a larger abdominal incision than necessary. When the membranes have ruptured the uterine mass is not so large as one might expect, but there is something in the objection when the membranes are not ruptured. In the last case when the operation was performed before the onset of labour the membranes were ruptured and the waters were drained off by means of a special instrument just before the abdominal incision was made. On the other hand, when the uterus is drawn forwards the operation can be completed with a cleanness and precision hardly attainable otherwise. When the incision of the uterine muscle is rapidly made it is wonderful how little blood is lost even when you come down upon the placenta. In the later cases the elastic tube has been drawn tight, if at all, only after the extraction of the child and the removal of the placenta and membranes. The objection that the use of the elastic ligature causes atony of the uterus is, in my opinion, frivolous. If the deep sutures are inserted as quickly as possible and tied pretty tightly it will usually be found that on relaxing the tube the hæmorrhage is inconsiderable. When the tube is being relaxed the uterus, which has been darkly congested, gradually assumes its natural red or pink colour. If by the time all the sutures are inserted and tied the uterus looks bulky it can usually be made to contract by manipulating it, not with the fingers directly in contact, but acting upon it through a suitable cloth.

As to the size of the wound in the uterus, it should be large enough to permit of the rapid extraction of the fœtus without laceration of the wall of the uterus. I have read and heard that the wound need not be more than four inches in length. As the true conjugate of the pelvis is more than that it may be inferred that a four-inch incision is an estimate, not a measurement as applied to the uterus in Cæsarean section. An added half-inch or more of a clean incision is a small matter compared with laceration of the uterus or asphyxia of the fœtus.

In recent years there has been a good deal of discussion, especially in Germany, on the position at which the incision into the uterus ought to be made, and many cases have been operated upon according to Fritsch's method—that is to say, with a transverse incision through the fundus of the uterus. I must say that to the best of my judgment there is little or nothing to be said in favour of this modification. The drawbacks with regard to the removal of the placenta and membranes are obvious enough, but there are much more important objections. The transverse "Fundusschnitt nach Fritsch" leaves the sutures that have closed the incision into the fundus uteri in such a position that the wound and the suture knots must come in contact with the bowels and omentum; such contact must result in adhesions with possible complications. But there is a worse objection than that; there is a danger that the fundus uteri will adhere to the parietal peritoneum before it has sufficiently undergone involution and cause discomfort by dragging upon the area of adhesion situated high in the abdominal cavity. Further, if the patient has not been subjected to operative proceedings in order to cause sterility the consequences of a future pregnancy must be deplorable. I am decidedly of opinion from experience of ventrofixation that wherever the incision is made the fundus uteri should be left free. When the uterine incision is made in the most obvious position, the middle third in front and in the median line, as involution goes on the uterine wound sinks down and comes in contact with and adheres to the abdominal wound. We then ultimately find the uterus—on examination a month or six weeks, or later, after the operation—just exactly in the position where it remains after a successful ventrofixation operation. If pregnancy occurs the fundus is free to rise and develop just as after ventrofixation in which the fundus is not bound down to the abdominal wall, and so normal pregnancy and parturition remain possible. With a line of firm adhesion between uterus and parietes a subsequent Cæsarean section must be a comparatively easy and safe operation. With increasing experience and confidence it was thought advantageous to abandon drainage.

I do not propose to discuss in full the indications for Cæsarean section and the alternative proceedings, but I should just like, among important points, to call attention to the fact that without having been explicitly condemned by any weighty expression of opinion the operation of symphyseotomy is dying out. Six years ago at the International Congress of Rome it appeared to be the most important and exciting subject under discussion in the Section of Obstetrics. Four years ago at Geneva one heard a good deal about it from Frenchmen and Italians; but now, apart from a few enthusiasts in Paris and in Italy nobody appears to practise it. It is an operation, if justifiable at all, only fit for a carefully arranged operation-room of a lying-in hospital. In this connexion permit me to call attention to a paper recently published in the *Monatsschrift für Geburtshülfe und Gynäkologie*,[3] entitled "Contribution to Symphyseotomy, relating to a Case of Induction of Premature Labour; Symphyseotomy; Perforation," by Dr. Oskar Gross in Breslau. The title is almost a sufficient summary of the case. The mother did not die. Dr. Gross, however, refers to three other cases, not his own, in which perforation had to be resorted to after symphyseotomy. Two of the mothers died and the third was 74 days in the hospital. The results, both as regards mothers and children, immediate and remote, are too problematic for the operation ever to gain a footing in private practice, and if this be true it should be banished from our hospitals. It has undergone several resurrections, which is a pity. I think it was von Winckel who suggested that the sooner it is finally laid in the grave alongside of gastro-elytrotomy the better for humanity.

Concerning the induction of premature labour, it has long appeared to me that the medical profession is dominated by hazy traditional views with regard to its indications and results. Few children are genuinely viable in the case of induction for the higher grades of contraction of the pelvis, although they may be born living. The mortality is appalling even when the best possible care is given to the newly-born infant. Is it evil tradition, or a want of imagination, or a talent for self-deception that makes such obstetrical histories

[3] Band xii., Heft 5, November, 1900.

as that of the patient in Case 10 possible at the end of the nineteenth century? In most cases it would be just as well to frankly resort to craniotomy as to bring on premature labour at 28 or 30 weeks, when the pelvis is so contracted that a genuinely viable child could not pass. From such experience as I have had myself, and from the information obtained by reading numerous statistics and case-contributions from many lands, I believe that it requires very exceptional conditions to make it a justifiable thing to bring on premature labour earlier than in 34 weeks. If you look at the indications for Cæsarean section and compare them with those for the induction of premature labour you cannot fail to be impressed with the shrinking of one and the expansion of the other.

On this subject of premature children Pinard presumes a fuller knowledge than the world possesses when he says: "Nous savons à la fin du XIXe siècle la signification du mot *prématuré*. Nous connaissons l'abîme qui sépare le prématuré de l'enfant à terme, et la différence d'avenir qui est réservée a chacun d'eux." Pinard has done much to add to our knowledge, as distinguished from our impressions, of the fate of premature infants. He refers to the portion of the Paris Maternité where premature infants are taken care of as "établissement modèle où rien n'a été épargné, ni la science, ni le dévouement, ni l'argent"; and what is the result? In 1897, out of 391 infants admitted 292 died within the average time of one month, that is, 70·4 per cent.; and in 1898, out of 482 admitted 343 died within the same average of time, that is, 71 per cent. The relative indications for Cæsarean section and craniotomy on the living mature fœtus would lead me too far afield. The subject is vastly too large for mere *obiter dicta*. One can only ask in half-despair, How long into the twentieth century will the obstetric art continue to act as procuress to invincible ignorance and brutish self-indulgence? Look once more at Case 10: craniotomy on a mature fœtus, craniotomy on twins, craniotomy after induction of premature labour at seven months—that sort of work throws into the shade the practice of an Egyptian midwife.

Manchester.

AN ACCOUNT OF THE EPIDEMIC OUTBREAK OF ARSENICAL POISONING OCCURRING IN BEER-DRINKERS IN THE NORTH OF ENGLAND AND THE MIDLAND COUNTIES IN 1900.[1]

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FOR the last 12 months I noticed, both in the medical wards of the Manchester Workhouse Infirmary and in the out-patient department of the Manchester Royal Infirmary, a considerable number of cases presenting unusual skin eruptions of a more or less indefinite character, such as erythema, keratosis, and pigmentation, the last being particularly common among the pauper patients. Some of the pigmented cases were diagnosed as Addison's disease by my assistants, but I could never satisfy myself that this diagnosis was correct. In June, 1900, about six patients presented themselves in one week who were suffering from the typical erythromelalgia or painful red neuralgia of Weir Mitchell, not only the feet but in some cases the hands also being affected; so marked were these cases that in June I gave a clinical lecture on the condition to the students of the Manchester Royal Infirmary. During the last seven months I noticed a remarkable increase in the number of cases of herpes zoster, which appeared to be in epidemic form and during this period I saw probably more cases than I had seen altogether in the past two years.

At the beginning of August quite an extraordinary number of cases of so-called "alcoholic paralysis" were admitted into the workhouse hospital, principally among women. So-called alcoholic peripheral neuritis is a fairly common disease in the Manchester district, very much more common, as I understand, than in London and the south, and perhaps I may be excused for saying that we are specially well acquainted with the affection, for it was principally owing to the work of our physicians, Dr. J. Dreschfeld and the late Dr. J. Ross, that such excellent descriptions were given to the medical world. By it we understand a peripheral neuritis associated with paræsthesiæ and numbness in the hands and feet, paralysis of the arms and legs, cramps of the muscles, and especially great pain on pressure of the muscular masses of the limbs; in addition, there is frequently a dilated left heart with cardiac muscle failure and marked œdema of the trunk and legs and often albuminuria; very rarely, indeed almost never, is there any affection of the cranial nerves. In some cases there is an almost characteristic mental condition with loss of memory for time and place. It may be at once mentioned that the only forms of peripheral neuritis associated with great muscular pressure and pain are the alcoholic, the arsenical, and that form found in beri-beri. By "alcohol paralysis" or neuritis in this paper I mean *so-called* alcoholic paralysis or neuritis.

This great increase in the number of cases of alcoholic neuritis was noted by many observers, some of whom thought that it was due to increased drinking owing to the war fever or to a wrongful expenditure of the money given by the charitable towards the war funds. There was at the beginning of November no longer any doubt that a serious epidemic existed not only in Manchester and Salford but also in neighbouring towns. Now, rightly or wrongly, and this is a matter far too large and important to discuss in this paper, I have for many years doubted whether ethylic alcohol *per se* does cause peripheral neuritis at all, and I have personally felt more confirmed in this opinion each succeeding year. I was therefore in the present epidemic not content with the alcoholic theory but was at once on the look-out for some other possible cause of the neuritis. I could not at first find a satisfactory explanation, but at any rate I confirmed a previous opinion[2] that in this district alcoholic neuritis only occurred among beer-drinkers, not amongst pure spirit-drinkers. Then we noticed at the workhouse that the peculiar skin lesions already mentioned in passing were very often found in the patients who were suffering from neuritis; secondly, a few cases of beautiful herpes zoster were found in the neuritic cases. Thereupon I remembered that arsenic was the only known drug which produced herpes, and so if there was any known drug acting as a poison in the beer it was almost certainly arsenic.

Improbable as this hypothesis at first seemed, yet it was a valid hypothesis, for it was not known to be untrue; it explained all the facts and it was easily capable of proof or disproof. This hypothesis I imagined on Nov. 15th, 1900. On Nov. 17th I obtained some of the beer most commonly partaken of by the sufferers and on Nov. 18th by Reinsch's test I easily obtained a deposit on the copper foil and driving this off in a combustion tube I got well-marked crystals of arsenious oxide, and thus the hypothesis became a fact.

Source of the arsenic.—On speaking to Dr. H. A. G. Brooke about the skin lesions he told me that he was treating a young London hop merchant for similar eruptions, and by his kindness I saw the patient with him and we found that he had undoubtedly got slight arsenical poisoning, although he took very little beer; but he frequently chewed hops, and we concluded that the sulphur with which the hops were treated would be found to be the source of the arsenic. This was soon found, however, not to be the cause of the present epidemic, especially as so little hops are used in making cheap beers. I have, however, been informed that the sulphur is often contaminated with arsenic, and in this way hops on the market often yield a reaction, showing the presence of traces of arsenic, thus accounting for the symptoms in a gentleman constantly tasting them. I communicated my discovery of the arsenic to Professor Dixon Mann on Nov. 19th and on Nov. 20th he examined a different sample of beer and also found arsenic. He informed Professor S. Delépine, who was, unknown to me, also investigating the epidemic at the request of Mr. C. H. Tattersall, the medical officer of health of Salford, and he on Nov. 22nd traced the arsenic to certain sugars used in brewing. These were invert sugar, made by the action of sulphuric acid on cane sugar, and glucose, made by the action of sulphuric acid on various forms of starch. It was easy to see that the sulphuric acid was the common source of the arsenic, and

[1] A paper read before the Royal Medical and Chirurgical Society on Jan. 8th, 1901. An abstract was published in THE LANCET of Jan. 12th.

[2] See Medical Chronicle, June, 1890, p. 189.

on being examined large quantities were found, the original source being the Spanish pyrites from which the sulphuric acid is made and which often contains a very large percentage of arsenic. As it happened the brewing sugars from one firm only were found to be thus contaminated, but as this firm supplies no less than 200 breweries in the north of England and midland counties it will be seen how widespread the epidemic was likely to be.

Quantitative analyses.—By the kindness of Professor Delépine I am able to give some interesting quantitative determinations, the arsenic being estimated as arsenious oxide. Various beers were found to contain from two to over four parts per 1,000,000—that is, from 0·14 to 0·3 grain per gallon. The invert sugar contained 0·25 part per 1000, the glucose 0·8 part per 1000, and the sulphuric acid no less than 1·4 per cent., or four ounces per gallon.

Other sources of arsenic.—From a legal and commercial point of view these results are of the highest importance, but from a scientific point of view it is equally important to know that traces of arsenic may get into beer from other sources. I have already mentioned that it is contained in sulphured hops; it is also found in many samples of malt, getting there either from sulphur or from anthracite coal; it has been found by Dr John Brown of Bacup in the vulcanite tubing used for conveying the beer to the pumps. Again, calcium bi-sulphate and sulphuric acid are used in "fining" the beer, and also, I believe, for cleansing the barrels. Another point worth recording is that many artificial manures are contaminated with arsenic. A possible explanation of the manner in which arsenic may be retained in beer during the various processes and may be of peculiar virulence is that according to the researches of Selmi, Hamberg, Sanger, Saccardo, and others,[3] certain micro-organisms, especially aspergillum glaucum, mucor mucedo, and penicillium brevicaule, seem to have a special tendency to seize hold of any arsenic in their vicinity and to manufacture specially poisonous arsenical products. This has so far been worked out more particularly in connexion with arsenical wall-papers, but, as Dr. R. T. Williamson[4] points out, it is very desirable that further researches on these arsenio-bacteria should be made.

Extent of the epidemic.—Although the epidemic seems to have fallen most heavily on Manchester and Salford and the vicinity, yet many more distant towns in the north of England and the Midlands have been affected—wherever, indeed, the contaminated brewing sugars were used. Thus we hear of outbreaks in Liverpool, Chester (where the cases were associated with so much heart failure and so little pigmentation that they were diagnosed as beri-beri), Warrington, Heywood, Bacup, Preston, Lancaster, Penrith, Ilkley, Leicester, Stourbridge, Lichfield, and Darleston.

Although very many thousands of people have probably been affected, yet it is impossible to say how many and equally impossible to give the number of deaths. For the epidemic had been in existence for nearly six months before anything except alcohol was suspected as the cause; many cases were treated as rheumatism, others as gastritis or diarrhœa, large numbers simply for the skin eruptions, and many merely as cases of chronic alcoholism. Some patients only had slight symptoms and did not have medical attention, while in others the cardiac and hepatic symptoms were the important features. But some idea may be obtained from certain statistics obtained by Dr. J. Niven, medical officer of health of Manchester, and Mr. Tattersall, medical officer of health of Salford. The former in response to a circular received information from 90 practitioners and came to the conclusion that there had been up to the end of November in Manchester only at least 2000 cases. Investigating his death tables, and including deaths certified as due to neuritis, alcoholism, or cirrhosis of the liver for the first 10 months of the years 1897, 1898, 1899, and 1900, he found them to amount to 172, 141, 188, and 253 respectively. In Salford Mr. Tattersall found that in the four months from the end of July to the end of November, 1900, there were 41 cases of death certified as due to neuritis and 25 as due to alcoholism; this total of 66 contrasted with 22 in the first seven months of the year, 39 in the whole of 1899, 31 in 1898, and 27 in 1897.

SYMPTOMATOLOGY.

1. *Complaint of patient.*—In answer to the usual question "What is the matter with you?" the patients have complained of one or more of the following symptoms: pains in the feet, hands, and limbs, burning in the soles of the feet, tingling and "pins and needles" in the fingers and toes, shooting neuralgic pains in the trunk and limbs, difficulty of walking, weakness in the hands and legs, rashes on the body, frontal headache, running of the eyes and nose (cold in the head), bronchitis and hoarseness, a "tired-out" feeling, shortness of breath, swelling of the feet, vomiting, and diarrhœa.

2. *Aspect.*—The aspect of most of the patients is so typical that their cases can generally be diagnosed at sight, not only as they come into the out-patients' room, or lie in bed, but as they walk about the streets of the city. The face is puffy, especially about the eyelids. The eyes are suffused and watery and sometimes running with tears, in some cases the conjunctivæ being œdematous and the vessels so congested that at first sight there appear to be sub-conjunctival hæmorrhages. The colour of the face varies from crimson to a dusky red or even a copper colour. The voice is often "husky," sometimes intensely so, and the walk is that of a patient with very sore feet, so that they seem afraid to put the foot to the ground, or it is somewhat unsteady, or else there is the "high stepping" gait from paralysis of the dorsal flexors of the ankle; in many cases the gait can be diagnosed merely by the noise of the footfall on the ground, the "double-rap" step, as I call it, the heel coming down first, quickly followed by a sudden (not gradual, as in health) descent of the anterior part of the foot and so making the second rap. The patients very frequently are found to be rubbing the fingers together because of the numbness and tingling.

3. *The skin lesions.*—These are very numerous, and almost invariably present in some form or other in greater or less degree. (*a*) Erythromelalgia. This condition, described as "painful red neuralgia of the extremities" by Weir Mitchell, or "acrodynia" by older observers, was one of the commonest lesions. The soles of the feet are crimson, as if stained with red ink, sometimes the whole surface, but more generally only where the surface touches the ground, so that there is left a normal appearance on the inner side at the hollow of the foot and also a transverse line just beyond the distal extremities of the metatarsal bones. The sole, and often the whole foot, is bathed in perspiration which may be stinking (but this is rare). The skin is also puffy even if no true dropsy is present. On the palm the redness may again be uniform but again more frequently it is most marked on the thenar and hypothenar eminences and on the palmar surfaces of the terminal phalanges, the centre of the palm being normal in colour; the whole palm is wet and may be actually pouring with sweat. Both soles and palms are tingling and burning hot and painful, and these signs are greatly intensified by heat, so that the patients cannot sleep unless the feet are exposed to the air outside the bedclothes.[5] The pressure of the bedclothes cannot be borne and the surfaces are exquisitely painful on pressure, so that, as I have said, the gait is affected, and the patients cannot use the hands even if no paralysis is present. This erythema does not become pigmented, but passes on to keratosis. (*b*) Keratosis. This condition seems to be a somewhat late manifestation and is at any rate very frequently secondary to the erythema and hyperidrosis of the palms and of the soles. I have watched it develop on the hands and feet and can thus speak with some certainty. It may take several forms, it may be in a few isolated scaly masses, either thin or very heaped up in marked prominences, and in this way previous corns on the feet or patches of tylosis on the soles or palms become extraordinarily prominent. In some cases the keratomatous patches appear on the dorsum of the hand between the webs of the fingers and on the knuckles. In more marked cases either the whole palm or sole is thickly covered with large white or dirty grey scales which are constantly being shed into the bedclothes; or the centre of the palm and inner side of the sole may be merely erythematous and dry but not covered by scales. Sometimes the keratosis extends up to the ankles and on to the wrists, but the scales are now not thick but more like a branny desquamation. The palms and soles may both be affected, but the soles are almost always the worst, and sometimes are affected alone. Moreover, in cases where

[3] Allbutt's System of Medicine, vol. ii., p. 989.
[4] Brit. Med. Jour., Dec. 1st, 1900.

[5] Rarely the patient says his feet are very cold, but on examination they are found to be hot.

there is no pigmentation keratosis may be present and forms a most valuable aid in the diagnosis of a case which might otherwise appear to be merely one of alcoholic paralysis. The process is very slow (many weeks) in its development and seems to be if untreated extremely chronic. (*c*) Erythemata. These are very varied in character and are often accompanied by great irritation. There is sometimes a scarlatiniform eruption on the upper part of the chest spreading to the neck and face, sometimes on the forearms and rest of the body. At other times, and perhaps most frequently, it is a morbilliform rash on the trunk and limbs running into scarlatiniform patches; often it is a more distinctly papular erythema and not infrequently there is an acute urticaria. In some the change is so intense that there is a vesicular eruption in which the lesions may vary in size from that of a pin's head to large bullæ several inches in diameter; those which I have seen have been almost always on the limbs. In one or two cases the appearance has been that of a true pemphigus, and when the contents have been shed circular marks have remained, like very superficial scars. These vesicular eruptions are probably a late form of rash, even coming on six weeks after the last glass of beer has been taken. The erythematous papules sometimes become larger, run together, and are covered with scabs in patches, so that there may be after many weeks an appearance somewhat like lupus or even of superficial syphilitic ulcerations. (*d*) Pigmentation. This is generally not present in light-complexioned patients or merely amounts to a darkening of pre-existing freckles. In darker people it is practically always present in greater or less degree, but in many is so diffuse that it may entirely escape notice. In most of the cases it follows (after many weeks) the erythematous blush, which gradually turns from red to copper-colour, then to bronze, and in severe cases almost to black, so that many of the patients resemble mulattoes. Even if it is thus almost universal it does not affect the palms and soles nor, as a rule, does it touch old scars in which the deeper layers of the skin have been destroyed, but round the edge of the scar it is much intensified, the scar thus seeming to be of an especially white character. Round the neck, in the armpits, round the nipples, on the abdomen, round the genitals, and on the buttocks, where there has been pressure, as round the waist or under the garters, it is much deeper in tint and, indeed, resembles the pigmentation of Addison's disease; but I have not seen any pigmentation of the mucous membrane of the mouth. Although well seen on the face of many patients yet on the whole it is more marked on the trunk. Frequently the pigmentation shows well-marked lighter spots like "rain-drops." In other cases the pigmentation is seen on close examination to be punctiform. In others it is in isolated spots varying in size from a pinhead to patches equal in size to the palm of the hand, clear light-coloured skin intervening, and often these isolated patches run together to form a continuous pigmentation. Not only is the colour like that of a mulatto but the texture of the skin takes on the same beautifully soft velvety feel to the touch, quite different from that of normal English skin. In many cases after many weeks a branny desquamation of the pigmented skin takes place, so that by friction one can rub off the pigmentation as it were and leave healthy skin underneath. Having watched numbers of these cases for weeks I am convinced that there is a distinct sequence of events — namely, an erythema followed by pigmentation and then a desquamation—so that the pigment is really a part of the general altered nutrition of the skin and is not due to a deposit of metallic arsenic in the skin as was once thought; this view does not necessarily exclude the idea that the drug may be partly eliminated by the skin. (*e*) Herpes zoster. This was the tell-tale eruption which, as I have said, gave me the key to the puzzle. When it occurred without any other very definite symptoms, then I considered that I was dealing with epidemic specific herpes, but when I found other signs of arsenic poisoning present there could be no doubt that it was also arsenical in origin. Since the discovery of the arsenic practically every case of herpes zoster has been found to have other unmistakeable signs of arsenic poisoning in greater or less degree. I have seen rarely herpes of the fifth cranial nerve, a few cases of the ascending branches of the cervical plexus, several of the other cervical nerves, many of the dorsal nerves, and one of the first lumbar nerve. In no case has the herpes been bilateral and generally only one nerve-root was affected, but in two cases I have seen two succeeding nerve-roots affected; I have seen no herpes below the elbow or below the knee. From the great number of cases seen in this district there is to my mind no longer any doubt that arsenic causes herpes by a direct action on the posterior spinal ganglion, just as much as it acts directly on the motor and sensory nerve fibres; this seems to me to be a much more probable view than that put forward by Dr. H. Head that arsenic is only a remote cause of herpes, inasmuch as it renders a person more liable to attack by specific herpes. In fact, how many of the epidemics of so-called specific herpes (such as that described by Dr. Head as occurring in 1897 during the long drought that lasted from July to November) have not really been due to arsenical poisoning? From actual therapeutical observation I have seen a few cases of herpes develop when I have been giving small doses of arsenic in which the only other sign of arsenical poisoning was lacrymation and a silvery tongue. I am indeed convinced that it may come on with quite small doses. The herpetic eruptions have always been preceded and accompanied by very severe neuralgic pains along the course of the nerve or nerves affected. And I may here state that I have had many cases with severe neuralgic pains in the arms or round one side of the trunk which I expected would be followed by herpes, but none appeared. (*f*) Nails. In many cases the nails are affected. After the patients have stopped taking the beer for some weeks the best appearances are seen, for then there is a transverse white ridge across the nail; proximal to this the nail is normal, but distal to it the nail is whiter, cracked, thin, and towards the tip almost papery and much flattened. In some cases there have been a series of parallel transverse ridges on the nails almost suggesting a series of week-end "drinking bouts." These deformed nails of course break easily. (*g*) Loss of hair. One or two women have told me that they have lost the hair during the attack, but this has certainly not been a marked feature.

4. *Nervous system.*—(*a*) Sensory affections have been present in practically all the cases. In the mildest they have merely consisted of paræsthesia and tinglings and burning and pricking sensations in the fingers and toes; in others these conditions have been combined with numbness of the hands and feet and sometimes of the legs below the knees. I have not seen a case of *total* loss of sensation, although the numbness has been very pronounced. Part of the apparent loss of power in the hands and feet has been due to this partial loss of sensation. In one case there was very marked, but not total, anæsthesia of the whole left fifth cranial nerve, but its motor fibres were unaffected. This is the only instance in which I have seen any affection, either sensory or motor, of the cranial nerves. Neuralgia of the arms or trunk, either followed or not by herpes, I have already alluded to. Finally, and of the greatest diagnostic importance, there was in a large number of the cases (but only if there was some loss of power) tenderness on pressure of the muscular masses of the legs and arms; sometimes deep pressure was required, but in other cases light pressure produced most exquisite pain and caused the patients to scream out and to exhibit a very typical facial expression of terror or in less marked cases merely a screwing up of the facial muscles in a "grin of pain." (*b*) Motor. These symptoms were similar to those ordinarily found in so-called alcoholic neuritis. They were present in greater or less degree in about 70 per cent. of the cases. In the slighter cases there was only slight loss of grip and slight affection of the gait, and there was then no appreciable atrophy of the muscles. In more marked cases there was a total paralysis of the affected muscles with very marked atrophy. The small muscles of the hands, especially the interossei, the muscles of the forearms, especially the extensors, and in severe cases all the muscles of the arm, were involved. If the muscles of the upper arm were not affected then also the supinator longus escaped to a large extent, as in lead-poisoning. In the early stages in the feet there was loss of power with some slight irritation of the extensors of the toes, so that the great toe was well extended and "cocked-up." In this stage the knee-jerk was always either present or exaggerated, but there was never any ankle clonus. But soon the muscles became paralysed and atrophied, first the interossei and the anterior tibial and peroneal groups, so that the toes were flexed and the whole foot dropped at the ankle into a position of talipes equino-varus. The calf muscles were next affected and at about the

same time those of the thigh, accompanied, of course, with rapid wasting and loss of the knee-jerks. The superficial reflexes were normal or exaggerated. Even in this stage the muscles on the front of the trunk were weak, so that the patients could not raise themselves in bed, and in some advanced cases there was well-marked diaphragmatic paralysis, with laboured breathing and a markedly ineffective power to cough. In one case with comparatively slight loss of power in the limbs the diaphragm was entirely paralysed. It goes without saying that in the most advanced cases the patients lay in bed totally helpless. There was no paralysis of the sphincters except in the most marked cases, in which some of the incontinence was possibly due to the mental condition, and the intercostal muscles were never paralysed. I never saw any paralysis of the cranial nerves in any case. The walk I have already described as a "stepping" gait, but many of the patients were distinctly incoördinate in their movements, and swayed slightly on standing with the eyes closed, but to my mind there was never any real resemblance to the ataxic walk of a case of tabes. (*c*) Mental. In many of the cases of advanced paralysis there was the peculiar mental condition commonly found in alcoholic paralysis. This has been called "confusional insanity," but it is more accurately described as a total loss of memory of time and then of place. There is a loss of initiation of ideas, but any suggestion, however absurd, is at once accepted. Thus a totally paralysed patient who has been in bed for weeks when asked if he has not been for a walk this morning will say that he has and will tell you with much circumstance where he has been; and when asked about yesterday will perhaps say with a little prompting that he has been to the seaside. If asked when he came into hospital, he will always turn towards the nurse at the other side of the bed and say: "Let me see, I think it was yesterday [or some other near date], wasn't it, nurse?" But, taking only the paralysed cases, I am inclined to think that the amount of mental confusion has been distinctly less than I should have expected from as many cases of ordinary alcoholic paralysis, which rather leads me to think that arsenic has not much effect on the cerebral cortex.

5. *Circulatory system.*—In the majority of the patients there has been some heart failure. In the milder cases this has been limited to dyspnœa on slight exertion, palpitations, post-sternal or epigastric pain, and a low tension pulse. In more marked cases the heart muscle has shown great failure and the left side of the heart has been dilated, the apex-beat has been in or outside the nipple line, and the left border not infrequently outside the nipple line; the beat was sometimes diffuse. On auscultation the heart sounds have approached the fœtal "tic-tac" type, the second sound being accentuated and the diastole shortened to the length of the systole; in some cases there was a soft systolic mitral murmur. Exertion has increased the pulse-rate considerably and there has sometimes been a rapid heart without accompanying fever. So great has been the cardiac muscle failure that several patients have fainted on getting up for the first time, and undoubtedly the principal cause of death has been cardiac failure; this has been noticed as the chief cause of death in arsenical poisoning by Brouardel in the Havre epidemic in 1888 (homicidal poisoning). Œdema affecting merely the feet only or almost the whole body has been observed in 25 per cent. of the cases. On the trunk it may manifest itself by the skin taking and retaining the impression of the stethescope over the heart. There is often a well-marked pad of œdema over the sacrum, and the genitals are sometimes enormously œdematous. The legs may have such a tense, hard œdema that it is difficult to make an impression on them with the finger. There has been a fair amount of ascites, but no great amount of pericardial or pleuritic effusion, certainly not so much as is said to occur in beri-beri. In the Chester cases there seems to have been an unusual amount of heart failure and œdema. Both from the cases which I have seen and from those reported in other epidemics I have no doubt that arsenic will seriously affect the heart muscle quite independently of alcohol.

6. *Respiration.*—Just as the skin is irritated by the arsenic so the respiratory mucous membrane seems to be in its whole course. There are in the early stage running from the eyes and nose, congestion of the fauces, a very marked congestion and thickening of the vocal cords producing the typical hoarse or husky voice (not due to any paralysis, as I have proved by laryngoscopic examination), and very pronounced bronchitis. Not infrequently there has been hæmoptysis in patients who were certainly not suffering from phthisis. Not a few of my cases have shown signs of phthisis with fairly rapid breaking down of the lung tissue. And it is interesting to note at the present time, when arsenic is being largely recommended for the treatment of phthisis, that some of our patients with signs of rapid phthisis give a history of apparently previous phthisis which has seemed to be in abeyance but has been lighted up in a virulent form by drinking the arsenicated beer.

7. *Digestive system.*—In many of the cases digestive troubles were the first signs; although loss of appetite was present in severe gastric cases, on the contrary in mild cases the appetite seems to have been definitely increased. There was, of course, no blue line on the gums in any case, but in a few the gums were red and softened. The tongue in the early stage had a typical thin white silvery coat, as if if it had been brushed over with lunar caustic. In later severe stages it was brown, but as a rule it was moist. Vomiting, quite sudden and very copious, was a marked feature, sometimes occurring immediately after each pint of beer taken or immediately after a meal. Many patients came to the hospital suffering from sensory disturbances and said that they were spirit-drinkers only, but on inquiry I found that they had been beer-drinkers a few weeks previously, but had voluntarily stopped the beer because it was not "agreeing" with them, as they were so sick, and this occurred before it was known that arsenic was present in the beer. Some patients complained of diarrhœa, and as these cases occurred in October and November I was quite at a loss to explain the cause, especially as they had not as yet shown other signs of arsenical poisoning, although they were obviously alcoholics. In a few cases there has been passing of blood by the stool, but whether this was secondary to congestion of the liver or to ulceration of the intestine I cannot say. At the work house hospital during the last six months we have had quite an unusual number of cases of cirrhosis of the liver (this organ being much enlarged, hard, and tender), with great ascites. Dr. A. C. Sturrock, the resident medical officer at the Manchester Royal Infirmary, has noticed the same increase there.[6] Brouardel has also mentioned cirrhosis of the liver in pure cases of arsenical poisoning, and I cannot doubt but that arsenic will set up an interstitial hepatitis.

8. *Urine.*—In a considerable number of cases there has been a trace of albumin in the urine, but quite possibly this has been secondary to the cardiac failure. In many cases this disappears later, so that I have no evidence to prove that there has been renal cirrhosis. We have not found any sugar in the urine. But a more interesting and important fact is the presence of arsenic in the urine of those patients who had been drinking quite recently. Professor Dixon Mann on Nov. 26th obtained the arsenical reactions quite easily from only six ounces of urine passed by a woman who had been recently drinking, and its presence in the urine has also been detected by Dr. J. H. Abram and Dr. Nathan Raw[7] and others. There is no doubt also that the arsenic is excreted by the milk, as I was informed by a mother who was affected that her suckling child vomited after each meal (which had never been the case with any of her previous children). Mr. G. S. Taylor of Salford[8] reports also a clear case of the suckling infant being affected.

9. *Temperature.*—In the early stages in several cases the temperature has been raised, varying from 101° or 102° F. in the morning to 102° or 103° in the evening, the other signs of early arsenical poisoning being fairly acute. In some cases this pyrexia has disappeared after a week or 10 days in bed; in other cases it has lasted two or three weeks, and in a few it has continued until death. Thus in the early stages in previous epidemics there has been some excuse for the cases having been diagnosed as influenza or even as typhoid fever.

Summary of symptoms and order of sequence.—From the above account it is clear that arsenic is almost certainly a cumulative poison although some authors say that it is not so. Moreover, it is a poison which affects both the skin and the respiratory and digestive mucous membranes, the nerve trunks, both sensory and motor, and the muscles (including the heart muscle), and the liver. As regards the sequence of the symptoms Brouardel[9] has clearly laid them down and I can confirm his statements. The sequence is: (1)

[6] Brit. Med. Jour., Dec. 22nd, 1900, p. 1815.
[7] Ibid., Dec. 8th, p. 1683.
[8] Medical Press and Circular, Dec. 5th, 1900, p. 585.
[9] Annales d'Hygiène, 1889, p. 479.

digestive symptoms; (2) laryngeal catarrh, bronchitis, and acute skin symptoms; (3) disturbances of sensibility; and (4) motor paralysis (and pigmentation and keratosis). Widal in the Hyères epidemic gives the following actual dates in one of his cases: Feb. 8th, gastric disturbance and diarrhœa; March 4th, acute cutaneous eruptions, spasmodic cough, running of the eyes and nose; March 31st, sensory disturbances in the limbs, then some days later paresis of the upper and lower limbs. Health was only restored after one year.

The course of the disease is a slow one. The gastric, coryzal, and laryngo-bronchial symptoms pass off first, then the acute skin lesions, which pass on to the chronic skin lesions, which, I think, will be found to last many months. The erythromelalgia and sensory symptoms are still almost as marked as ever in patients whom we have had under observation for four or five months, and judging from analogy of so-called alcoholic paralysis the motor disturbances will last for from 18 months to two years before they entirely disappear.

Mode of death.—In most of the cases this seems to be from cardiac failure, either quite suddenly or gradually. Some patients have died from paralysis of the diaphragm with secondary broncho-pneumonia, and in one case at least phthisis contributed to the fatal issue.

Classification of cases.—The cases may be roughly divided into groups: (1) those with all symptoms fairly well marked; (2) those with skin lesions principally; (3) those with cardiac and hepatic lesions principally; and (4) those with paralytic lesions principally. A careful examination into the history and present state of any case will, however, reveal some concurrent symptoms quite characteristic of arsenical poisoning. Thus in a fair-complexioned woman who had no apparent symptoms but paralysis, which could not be diagnosed from so-called alcoholic paralysis, there was in addition keratosis of the soles of the feet.

Diagnosis.—Once the possibility of arsenic poisoning is recognised there is no difficulty whatever in diagnosis. There is no other disease which will produce the same grouping of symptoms. In the early stages it is possible to mistake the condition for measles or scarlet fever and in the later for Addison's disease, and in some cases it will be difficult in the present state of our knowledge to say that certain cases cannot be entirely explained by chronic alcoholism. Only a thorough consideration of the history and full examination of the patient will prevent mistakes being made. In beri-beri there are said to be but few skin lesions.

Treatment.—I shall say little on this point, for having entirely stopped the intake of the poison, the treatment becomes merely a matter of dealing with symptoms. One point, however, is of great importance; on account of the alarming heart symptoms from muscle failure no depressing drugs should be given. We must thus avoid potassium iodide, sodium salicylate, antipyrin, exalgin, phenacetin, &c. Small doses of digitalis, with some other diuretic, tonic doses of strychnine, gastric sedatives, carbonate of ammonia, and senega, will probably be required. For the pains we must have recourse to small doses of morphia. The burning sensation in the hands and feet is much relieved by spirit lotion. The other skin lesions must be dealt with *secundum artem*, but this is a subject which I would rather leave to the dermatologists. The treatment of the neuritis does not differ from that which is already well known.

Previous epidemics.—Space will not allow me to do more than mention some previous epidemics of arsenic poisoning. Graves[10] mentions that he had witnessed part of the curious "*épidémie de Paris*" which occurred in 1828, in which there were peripheral neuritis, acrodynia, and many other of the symptoms which I have above described. There can be little doubt that this was an epidemic of arsenic poisoning. I have been unable to find Chomel's original paper, but Barthélemy[11] says, also, that it appears to have been due to arsenic and that in four or five months it caused the deaths of 40,000 persons on the western bank of the Seine near Paris. Brouardel and Pouchet[12] call attention to an epidemic affecting nearly 500 persons at Hyères in 1888 and reported by Widal, in which white arsenic had by mistake been put into wine instead of gypsum; also an epidemic at Havre in 1888 in which 15 persons were affected from arsenic put intentionally into food. Brouardel also alludes in passing to an epidemic, which he had investigated, from arsenic in bread,[13] and I have seen a statement made, but cannot confirm it, that in 1884 in the Département du Midi (France) some wine sold was found to contain a considerable quantity of arsenic which was derived from the sulphuric acid with which the old wine barrels had been repeatedly washed, whereas the same wine which had been stored in new barrels was quite free from the poison.

Pathological anatomy.—This subject I do not intend to allude to, as it is being investigated by others. In the few cases in which I have been present at the post-mortem examinations the only prominent signs were the interstitial hepatitis and the dilated flabby heart.

Personal statistics.—During the three months—October, November, and December, 1900—I had charge at the Manchester Workhouse Infirmary of 343 patients suffering from arsenical poisoning, 192 being men and 151 women. During November and December at the Manchester Royal Infirmary (out-patient department) I treated 157 patients similarly affected, 99 being men and 58 women. This gives a total of 500 cases, 291 being men and 209 women. This preponderance of men over women is contrary to what I supposed at first was the case, but the symptoms were on the whole more pronounced in women. The deaths were 13, five of men and eight of women. The ages varied from 26 years to 70 years and either beer or porter was invariably taken as a beverage, alone or together with spirits. The amount taken has varied from as small a quantity as two pints (possibly only one and a half pints) to 16 pints a day. The herpes was more common in men, for out of a total of 21 cases seen in three months 16 were in men. The heart symptoms with anasarca and the liver enlargement and cirrhosis with ascites were also more common in men. But the gastro-intestinal, the coryzal, and the sensory and motor disturbances were more common in women and as a rule were shown in a much more marked degree. In 80 cases in which specially careful notes were taken seven women out of 37 had marked loss of memory of time and place, but only one man out of 43 was thus affected. Also of these 37 women 27 were suffering from loss of power, 10 of them to such a degree that movement of the much atrophied limbs was practically impossible. Of the 43 men 17 had loss of power, the loss being of a total character (in the limbs) in six cases. In all the cases of paralysis the legs were more affected than were the arms.

Manchester.

[10] Clinical Lecture, New Sydenham Society's Transactions, vol. i., 1884, p. 578.

[11] Nielson's article in New Sydenham Society's Transactions, vol. clxx., p. 237.

[12] Annales d'Hygiène, 1889, vol. xxii.

[13] At St. Denis, where 280 were affected.

CASES OF ARSENICAL PERIPHERAL NEURITIS.

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FOR the past four months I have been interested in the number of persons presenting themselves at the out-patient rooms of the Stanley Hospital on my days of attendance who exhibited symptoms of neuritis in various ways. In two cases, both those of women, there were large outbreaks of herpes zoster of the intercostal variety and in another case, that of a man, there was herpes zoster distributed from the buttock down the posterior surface of the thigh; in the cases of the females the skin of the abdomen and back was of a pale umber colour. Other patients complained particularly of peculiar pains in the hands and feet and on examination their cases were diagnosed as cases of peripheral neuritis probably due to alcohol. In the case of two patients particularly who confessed to having taken small quantities of beer, and that only at meal times, the possibility of lead as a cause was considered, but there were no special diagnostic symptoms to support it, and yet it was difficult to understand how the alcohol alone could have been the sole cause of, and could have produced, such marked symptoms, for none confessed to spirit-drinking. There is no doubt now, however, that these cases were the outcome of arsenic in the beer and I thought it would be of interest to describe briefly some of the more characteristic features noted.

CASE 1.—A married woman, aged 42 years, came complaining of pains and numbness in the hands and feet with

difficulty of walking. She stated that she never had any previous illness. For some months she had noticed a difficulty in going upstairs. Since about the middle of August she had suffered from intermittent attacks of coryza and gradually increasing numbness in the fingers which interfered with her work as a cigarette-maker. She had suffered more or less with diarrhœa for two years, but since August she had had attacks of vomiting and griping pains with six or eight loose motions daily. Pain in the soles of the feet preceded by cramps in the calves and thighs came on at about the same time that the fingers were affected; the legs, feet, and hands were swollen and the finger left an impression on the swollen legs; the face also was œdematous. The patient's senses of taste and smell were almost completely lost. Her complexion had gradually become "pasty and sallow" and her skin very dry and "mealy." Her condition on examination was as follows. The face was pale and sallow and was rather puffy, with a mask-like appearance; the cheeks were pigmented, with clear spots as if the bronze colour had been washed off; and the eyelids were very dark. There was bronzing, extending down the neck and becoming darker near the axillæ; the nipples were very dark and the abdomen had the same umber colour; and the skin was desquamating like fine bran. The skin of the hands was peeling and dry on the palms, with the palmar lines looking like streaks of flour, and the nails were brittle, while the tissues around them were swollen and shiny. The patient stated that her hands felt tense and that her skin felt like a tightly-fitting glove. The fingers were anæsthetic, which was most marked in the thumb and gradually lessened to the little finger, which was very slightly affected—the anæsthesia had travelled from the thumb to the index and middle fingers in sequence, then after a short interval to the ring finger—and there was fine tremor of the hands. The anæsthesia did not extend over the wrists nor were the arms tender on pressure. On holding a cup, if she exercised sufficient pressure to retain it, it caused pain in the fingers. There was marked loss of contour of the legs and slight œdema; the skin was dry and scaly, but there was no pigmentation. The feet dropped and the arches were almost obliterated as in flat-foot; the skin was blue and shiny, there was acute tenderness of the soles and, on pressure, over the nerves of the leg, with general hyperæsthesia. The knee reflexes and the plantar reflexes were absent. There was not much wasting and paresis was not very marked. She could raise herself on her toes and flex the ankle against slight resistance. There were no ataxia and no headache and the memory was good. The tongue was white, flabby, and silvery in appearance. There was no pain after food and the appetite was good. She was suffering from diarrhœa with straining and soreness, which she stated was as if she had "piles." The motions were fluid and frothy; they contained no blood but considerable quantities of mucus. There was occasional vomiting. The urine did not contain albumin or sugar. The pulse was 102, small and irregular. The heart-sounds were weak, with the first sound reduplicated occasionally and like the second in character. She stated that she had taken only three glasses of beer per diem and that it was always procured from the same public-house. Two weeks later (on Dec. 2nd, 1900), when she had given up taking the beer, all diarrhœa, vomiting, and coryza had ceased and the œdema had almost disappeared. On the 4th the urine was examined for arsenic but with a negative result. Only a small quantity, however, was obtainable for the purpose.

CASE 2.—The patient was the husband of the woman in Case 1. He had had similar gastro-intestinal symptoms with coryza while taking the beer, and had become pigmented, but exhibited no symptoms of neuritis. These symptoms disappeared on his discontinuing the beer.

CASE 3.—The patient was a female, aged 63 years. The symptoms commenced early in August, 1900, but for a month previous the woman had noticed weakness of the legs on going upstairs. She had had attacks of vomiting and diarrhœa with colic—six motions during the day and four during the night; the motions were jelly-like but contained no blood. There was marked watery discharge from the eyes and nose but no sore-throat. The skin became dry and scaly and for six weeks she had had pains in the feet with increasing difficulty in walking and some staggering, and two weeks later the pains came on in the hands. The pains were always worse at night while in bed. While attending as an out-patient for three weeks her symptoms increased, and on Nov. 15th she was admitted into the hospital, her condition on admission being briefly as follows. The patient was a fairly well-nourished woman. Her hair was turning grey; her skin was dry, scaly, and very pigmented, especially over the abdomen, the chest, and the back, in parts subjected to pressure, and in the axillæ and inner sides of the thighs, fading towards the legs, the arms, and the face. Pigmented patches were present on the temples and at the roots of the hair on the forehead. The skin was desquamating freely all over, especially on the back and on the sides, also on the calves. On the dorsum of the hands and feet the skin was glossy and bluish, while on the palms and soles it was dry and peeling; the nails were brittle. The heart sounds were weak and "fœtal" in character, the first and second sounds being of similar character. The pulse was 108, small, and collapsing. The nervous symptoms consisted of pain in the intercostal regions with a marked girdle pain at the lower part of the thorax. There was acute tenderness over the nerves of the legs on pressing the calves, causing her to scream; and the same tenderness was present in the soles of the feet; it was not present in the arms but was marked in the fingers. There were anæsthesia and excessive sweating of the fingers, which followed upon shooting pains. She was unable to feed herself, there being great loss of power in the hands, and she was prevented from standing by loss of power in the legs. There was well-marked hyperæsthesia of the skin of the feet. The knee plantar reflexes were absent and there were flail ankles. The abdominal reflexes were absent. The pupils reacted to accommodation and light. The wasting of the arms and the legs was considerable. The patient slept badly and her memory was slightly impaired for recent events, but there was no delirium or incoherence of speech. The appetite was poor; there was no pain after food, but the patient had diarrhœa. The tongue was shiny and white. The urine did not contain albumin or sugar. The patient confessed to drinking only two glasses of beer daily but no spirits. She had obtained her beer from the same public-house for seven months, previously to which she had not experienced any symptoms.

CASE 4.—The patient was a female, aged 60 years. She came to the hospital complaining of weakness of the legs and the hands for the previous three months. Six months before she had had sneezing and watery discharge from the eyes and nose which lasted for six weeks, and there had since been intermittent attacks. There was no vomiting or diarrhœa. Pains in the soles of the feet and in the ankles had developed and increased during three months. There were suffusion and redness of the conjunctivæ, and the skin of the face was darkly pigmented, the pigmentation increasing over the neck, the chest, the back, the armpits, the shoulders, the buttocks, the thighs, and the abdomen, fading towards the arms, the hands, the legs, and the feet; in places it appeared as if it were splashed with rain. In the most pigmented parts the skin was almost like that of a negress. Exfoliation was very marked, the exfoliated epidermis appearing white in contrast to the general bronzing. The finger nails were brittle and the nails of the great toes were loose. The hair had fallen off very considerably. Pains with numbness and anæsthesia were noted in the fingers. The patient had severe pain in the feet; she stated that she could not bear the weight of the bed-clothes upon them. The soles were exquisitely tender, also the nerves of the leg, pressure eliciting screams. The skin of the feet was hyperæsthetic up to the ankles. The knee and plantar reflexes were absent; there were no ataxic symptoms. The digestive system had not been affected. The tongue was smooth and silvery looking. The heart sounds were altered so that the first sound was short and sharp but feeble. The pulse was 102 and almost imperceptible. The woman acknowledged having taken only "two gills" (= three glasses) of beer daily, and she had always obtained it from the same place.

CASE 5.—The patient was a female who complained of hoarseness and cough which had been coming on for three months, also the rapid enlargement of a previously small goitre, with pain and numbness of the hands and feet. She first noticed that a short walk made her tired and that her legs felt "heavy." The hoarseness and bronchitis had gradually developed, with a constant sense of irritation in the throat. For a month she had a discharge from the eyes and the nose like clear water. Her skin had become very brown, but it was clearing; it had "come off," she said, "like oatmeal and in flakes," especially from the hands and feet. When the patient was seen by me on Dec. 7th the

pigmentation was very marked and the face was dusky, the general distribution of the pigmentation being as in Case 4. On the back was a patch of erythema about eight by ten inches, sharply defined, and exhibiting dermographia on friction. When her initials were scratched upon it they stood up as wheals in bold relief. The pigmentation faded towards the hands and feet. The tongue was silvery and exfoliating. The patient had suffered from purging with tenesmus and smarting, but had passed no blood by the bowel. She attributed this to the beer she had taken, which always gave her a burning feeling in the chest and stomach. There was great tenderness on pressure over the nerves of the legs and also on the soles of the feet, with hyperæsthesia. The knee and plantar reflexes were absent; there was no ataxia, no wasting, and no marked paresis. Examination of the chest revealed general bronchitis. The heart sounds were rather feeble, but there were no murmurs. Exertion caused dyspnœa. The pulse was 96, small, soft, and regular. Menstruation had increased, and the last period had been excessive. The thyroid gland was much enlarged, more on the right side than on the left. There was no pulsation or murmur, the increase in size having been recent. The gland had never caused her any trouble before but had become a source of much discomfort. The patient took "sixpenny" beer with her meals, three glasses per diem.

CASE 6.—A man, aged 47 years, complained that his right hand felt "asleep," with a feeling of "pins and needles." For a week his legs had become weak and numb and as if he were "standing on ice." He could not work owing to the weakness of the legs. He had had coryza for two weeks and he had also had looseness of the bowels for the same time. The skin was dry and scaly and the nipples were very brown. There was a pigmented macular eruption on both sides of the body, the buttocks, and the thighs; on the latter it was in long streaks following scratching. There was a separate patch on the right buttock two and a half inches square, and one on the abdomen. The face was dusky and expressionless. The man had difficulty in picking up pins with his right hand as he could not feel them. There was a feeling of "pins and needles" in both legs, with slight superficial anæsthesia, but great pain on pressure over the calves and the soles of his feet. The knee and plantar reflexes were absent, but the paresis was not pronounced. There was slight ataxic gait on walking with the eyes shut. There were no mental symptoms. The pulse was 86. The heart sounds were normal. The tongue was pale and silvery, but there was no gastric disturbance. The patient confessed to taking two glasses of beer at night but no stout, and he said that he always got his beer from the same public-house.

CASE 7.—A man was admitted into the hospital complaining of loss of sensation in the arms and legs; he said that on standing or walking he felt as if a round ball were under the sole of each foot. He had been in the habit of drinking beer but not to excess, and he very seldom drank spirits. His illness commenced in October, 1900, with "cold in the head"; he had also vomiting and diarrhœa. On walking he experienced pain in the calf muscles; weakness of the legs below the knees developed, and later the hands and arms became affected. He had gradually lost weight. The pigmentation of the skin was not very deep in colour with the exception of the axillæ, the groins, and the nipples. The skin was dry and desquamating in fine powdery scales; the skin of the hands and feet was shiny and bluish. The finger-nails had each a well-marked transverse ridge, indicating in period of growth the approximate date of the initial trophic disturbance. There were no special symptoms in the alimentary system. The pulse was 72 and of low tension. The heart sounds were feeble and distant but there was no bruit. There was slight general bronchitis with cough. The patient slept fairly well; there were no headache and no mental disturbance. He walked with difficulty and with a "stepping" gait. There was marked hyperæsthesia of the hands and the forearms, also of the feet and the legs. Pressure over the nerves in the calves caused great pain. The soles of the feet were very tender on pressure. There was marked wasting of the muscles of the arms and legs, with loss of contour in the limbs, loss of power, and "drop foot." The patellar reflexes were absent and the plantar reflexes were diminished. There was no œdema. The specific gravity of the urine was 1005; it was acid but there was no albumin or sugar.

The above series of cases exhibited a characteristic train of symptoms; other cases, however, in which there was sufficient reason to attribute the symptoms to the same cause were less typical and varied in severity. The following may be taken as examples.

CASE 8.—A woman, after three years' abstinence from liquor, took it in excess for two weeks. Violent vomiting, diarrhœa, and depression ensued. The tongue was furred and the mouth and gums were ulcerated and painful. The pulse was 120 and was very feeble. The heart sounds were "fœtal" in character. There were pains in the hands and calves, with great tenderness on pressure. The knee and plantar reflexes were exaggerated.

CASE 9.—The patient was a man who had always been in the habit of drinking from four to five pints of beer daily but who had never experienced any ill effects until the end of November, 1900, when he suffered from severe gastro-intestinal symptoms and coldness and feelings of numbness in the hands and legs. When seen in the out-patients' room he was extremely depressed, with pronounced tremor, and was continually hawking up mucus from the throat. There was great pain on pressing over the nerves of the legs. The face was puffy and the skin was dry. There was no pigmentation. The patellar reflexes were exaggerated and the plantar reflexes were diminished. The pulse was 160, very small. The heart sounds were "fœtal" in character. The face was puffy.

CASE 10.—The patient, a man, suffered from œdema of the legs with pain on pressure over the nerves. The knee-reflexes were diminished. There was also anæmia. There was no pigmentation. Slight gastro-intestinal symptoms were present. The pulse was irregular, small, and frequent. The heart sounds were feeble.

CASE 11.—The patient was a man, showing pigmentation and fine desquamation round the waist, in the armpits, in the groins, and in the nipples. There were hoarseness and bronchitis but no gastro-intestinal disturbance. Pain and tenderness of the sole of the right foot were also present. The right knee reflex was absent and the left knee reflex was normal.

CASES 12 and 13.—These cases were those of two females who showed herpes zoster of the right side of the trunk with intercostal neuralgic pain. They had also pains in the hands and in the feet, with pigmentation of the trunk.

CASE 14.—This was the case of a man who had herpes zoster of the right buttock extending down the thigh to the ham.

CASE 15.—This was the case of a man who suffered severe urticaria, with pains in the arms and the legs. The urticaria disappeared with the discontinuance of the beer. Several days later on taking beer a fresh outbreak was precipitated.

CASE 16.—The patient was a female who had had coryza for two weeks. There were four loose motions daily. She suffered from great thirst. There were numbness in the hands and occasionally in the legs and pigmentation of the sides of the trunk. The skin was dry and desquamating particularly over a large area on the left side of the trunk. The tongue was clean, fissured, and glistening. The pulse was 80, regular and small. There was a systolic mitral murmur.

In the majority of instances I was able to locate the establishments at which the patients had procured their beer and I felt justified in notifying without delay the names and addresses of the patients and the establishments to the medical officer of health of the city.

Liverpool.

THE ROENTGEN RAYS AND THE DIAGNOSIS OF URINARY CALCULI.

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WITHIN the last few weeks I have had under my care a series of cases which illustrate in an unusual degree the value of the Roentgen rays in the diagnosis of renal, ureteral, and vesical calculi. Thanks to the improvements in technique which have been effected in the course of the last two years the results obtained by Roentgen photographs may, so far as calculi are concerned, be regarded as final and conclusive for all ordinary cases. Unless there is some unusual difficulty, such as an abnormally stout abdomen

or, as in one of my cases, an extreme lumbo-dorsal curvature, displacing and burying the kidney, the Roentgen rays can be relied upon to give definite and accurate information not only as to the existence of a calculus but as to its size, its exact position, and, what is even more important, whether there are other calculi present either in the same or in some other part of the urinary tract. There need, therefore, be no fear lest, as has happened before now, an operation should be performed by some mischance upon the wrong organ or on the wrong side. The best results, of course, are obtained with calculi composed of oxalate of lime, as these absorb the rays to a much greater extent than others, but even concretions of phosphate of lime can be made to throw a distinct shadow, unless they are so minute as to be of no practical importance, and a negative result can be relied upon as much as a positive one. If no calculus is shown after a second examination, repeated under varying conditions, it may be taken as certain that there is no calculus there. Out of eight cases radiographed by Lennard of Philadelphia in which the result was negative on subsequent examination nothing was found in seven cases. In the eighth case it was known at the time that the technique was faulty and that no reliance could be placed upon the result.

In many instances Roentgen photography is the only method by which the presence of a fixed calculus can be ascertained. I have published elsewhere[1] a case in which I removed a small cortical calculus from the right kidney of a patient who had had his appendix removed nine months before by another surgeon without deriving the least relief. As usual in the case of a cortical calculus there were none of the characteristic symptoms of stone in the kidney. The stone was fixed and never came into contact with the orifice of the ureter, so that there was no renal colic, or hæmaturia, or retraction of the testis, but merely constant aching pain referred to the right iliac fossa and made worse by every attempt at exertion and attended by a feeling of sickness. A single exposure revealed the cause, and with the removal of the calculus the pain ceased entirely.

Even when there is no doubt as to the existence of a calculus the assistance derived from this method of investigation is scarcely less valuable, especially in the case of renal calculi. In another patient of mine, who was under the care of Dr. J. G. Ogle of Reigate, the clinical symptoms were so definite that the diagnosis of stone in the kidney was practically certain; but nothing could be ascertained about the size of the calculus, or its position in the kidney, or whether there might not be more than one, hidden away, perhaps, in one of the calices. A single examination with the Roentgen rays proved beyond all question that there was only one stone and that it was fixed in the cortex and at the lower end of a particularly low-placed kidney. In consequence of this I was able to extract it through the smallest possible incision and with a minimum amount of manipulation. Had it not been for the skiagram it would have been necessary to have exposed the whole kidney, and to have palpated it thoroughly, perhaps even to have dragged it out of the wound on to the loin, first to find the stone, and then to make sure that there was no second stone present.

When the stone has left the kidney and is passing down the ureter the condition of the patient, as a rule, is such that quiet examination is not possible. In one case, however, in which the course of the stone was temporarily arrested just below the brim of the pelvis, I obtained definite information both as to its presence and its exact locality. Fortunately, under active purgation, it soon began to move on again, and it was ultimately passed without any operative measures being required. Had it remained fixed where it was the information would have been of the utmost value in determining the exact situation for the incision. In two cases of suspected ureteral calculus under my care, in which the evidence given by the Roentgen rays was negative, the subsequent course of events proved that it was perfectly correct. In one case it was thought that there might be a calculus impacted in the lower end of the ureter, as, in addition to other symptoms, there was a peculiar prominence of the mucous membrane of the bladder just behind the orifice of the ureter and visible through the cystoscope, but on examination nothing was found. In the other case the patient, who had suffered from repeated attacks of colic down the left side of the abdomen for some months before and in whom the left kidney was unusually sensitive to pressure, died suddenly from acute intestinal strangulation a fortnight after the skiagram had been taken, and the kidney and ureter were found at the post-mortem examination to be perfectly free.

Under ordinary circumstances the Roentgen rays are not required in cases of vesical calculus. The diagnosis is easily made with a sound, aided, especially in children, by the introduction of the finger into the rectum; but there are many cases of enlargement of the prostate in which this method fails completely. Stone in the bladder is much more common in association with enlargement of the prostate than is usually believed, and is very often overlooked. Sometimes the stone lies in a definite sacculus and sometimes it is merely caught behind the prostate and held by it against the trigone. In either case, however, it never comes into contact with the neck of the bladder, it never gives rise to the characteristic symptoms, and it is exceedingly easy to miss with a sound. There may be pain, it is true, but it is not the characteristic sharp cutting pain of stone in the bladder, felt at the end of the penis, and coming on as the last few drops of urine are expelled. Micturition may be unduly frequent, but the frequency is either more marked during the night than during the day or else is so extreme that such exercise as the patient can take makes little or no difference. Blood is often present in the urine, but more often than not it precedes or accompanies the flow instead of following it; and though the stream of urine often stops before the bladder is emptied, it is not arrested with that abruptness and sudden pain which characterise the dropping of a calculus into the neck of the bladder and the sudden spasmodic contraction of all the muscles around it. It often happens in these cases that the only indication of the presence of a calculus is the obstinate persistence of cystitis which resists all ordinary measures; and I am strongly of opinion, from the frequency with which I have found calculi present, that whenever this persistence is a prominent feature in association with enlargement of the prostate a special examination for calculus should be made without further delay. The severity of an attack of cystitis depends upon the kind and number of the septic organisms that get in and upon the conditions which favour their growth. Persistence in the face of treatment thoroughly carried out points to some lasting cause which is much more often a calculus than is usually imagined.

Now in many of these cases the prostate is so large, partly from over-growth and partly from long-continued congestion, that the ordinary methods of examination are useless. A sound, if it can be introduced and rotated in the bladder, cannot be made to explore the post-prostatic pouch or any sacculi that have been formed without an amount of manipulation that is often most injurious. A cystoscope frequently cannot be introduced at all, and owing to the length of the prostatic urethra the finger in the rectum cannot lend the least assistance. Hence it is that under these circumstances even large calculi may be overlooked. But with the Roentgen rays there is no difficulty. Without putting the patient under an anæsthetic, without passing anything up the urethra, without causing pain or even inconvenience, without the least risk of hæmaturia, or septic cystitis, or shock, an examination with the Roentgen rays will prove within the course of a few minutes whether a calculus is present or not, no matter what may be the size or shape of the prostate or how distorted the bladder. Not only can the presence of a calculus be shown, but very valuable information can be obtained as to the size, number, locality, and sometimes even composition. The shadow of the calculus is projected on to the plate with that of the coccyx. (The patient must lie upon his back, as the prone position is only suitable for moveable calculi.) Making allowance for the fact that the coccyx is somewhat nearer to the plate a fairly approximate idea can be obtained as to the size of two of the diameters of the calculus. No direct information, of course, can be obtained as to that of the third. The stone may be disc-shaped and not thicker than a penny—not an unusual shape in cases of this kind—or it may be spherical. In either case the area of the shadow would be the same. If, however, the shadow on the negative is distinctly lighter than that of the coccyx, in spite of the latter being nearer the plate, it can only mean either that the stone is of considerable thickness, or that it is composed of oxalate of lime, or both. The actual size, however, and the hardness of the calculus are not so material under these conditions as is its position. The material point is that a calculus is present, either behind the prostate or in a sacculus, that it cannot be reached by a sound, and that therefore it is no use trying

[1] Archives of the Roentgen Ray, November, 1899.

to crush it by means of a lithotrite introduced through the urethra.

There is no need for any exceptional apparatus. It is usually recommended that the tube should be one of low vacuum, as the object is to obtain differentiation rather than penetration. In order to ensure shortness of exposure under these conditions the wattage of the secondary circuit must be high and the amount of the discharge sufficiently large. For this reason a coil giving a 10-inch or 12 inch spark answers better than a static machine. But I have known excellent results to be obtained, even in the case of the kidney, by very short exposure with a decidedly hard tube—and where the patient is very stout the tube must be hard. What is important, is not to obscure the differentiation obtained in the first few minutes' exposure by allowing too much penetration subsequently. The bowels must be cleared out thoroughly. All clothing containing foreign bodies likely to cast a shadow must be removed from the area to be examined. As a rule the patient should be placed in the recumbent position, with the plate, supported by a stout board beneath him, and an aluminium screen between the body and the tube. If it is wished to take a skiagram of the whole urinary tract at once the plate must be large enough to reach from the last dorsal vertebra to the lower part of the pelvis, but it is often better, when there is any doubt, to take two exposures, one of the kidneys and the upper part of the ureter, and the other of the lower part and the bladder.

One of the chief difficulties is the patient's breathing. The kidneys move up and down during even tranquil respiration to a much greater extent than is usually believed. They are not by any means immoveable organs, as anyone who has ever exposed a kidney during life must know. The patient cannot hold his breath for a sufficient length of time. The plan recommended by Mr. Mackenzie Davidson of making him hold his breath with the thorax fixed in a certain predetermined position, for short periods, at frequent intervals, and only allowing the exposure to take place at those periods, answers fairly well but requires a very careful patient. A more satisfactory plan is either to direct the patient to take very shallow breaths, or, better still, to put a firm bandage around the abdomen. This fixes it in a position of expiration and has the additional advantage of slightly raising up the opaque mass of the liver. The respiratory movement is less when the patient is sitting upright, but this advantage is more than compensated for by the way in which the abdominal viscera descend and conceal the kidneys. In the case of a very prominent abdomen the prone position, with the plate beneath, has been recommended instead of the supine position, with the idea that the abdomen would be flattened out to the sides and the kidneys brought nearer to the plate. I have had no experience of this, or of distending the stomach with carbonic acid gas—a plan which has been suggested as possibly of service in the case of the left kidney, under the impression that the more opaque viscera would be to some extent lifted from off it in front. Distension of the bladder with air in the case of a fixed vesical calculus is certainly of use, and provided the air is sterilised first, and due regard is paid to the sensations of the patient, it may be practised with no more danger or unpleasantness than that which attends the process of washing out the bladder.

The negative must be allowed to dry before any conclusion is drawn; and, if there is any doubtful spot, should be intensified with corrosive sublimate. Unless everything is certain a second examination should be made after a few days' interval, and if there is any doubt then a separate exposure should be taken of the area in question, a leaden plate with a circular opening exactly opposite the anode being interposed between the tube and the patient, so as to cut off as far as possible all extraneous rays and obtain a better defined shadow. I prefer plates in all cases to flexible films, as the latter are very liable to stretch when handled and give misleading results; but in such a case as that which I mentioned above in which there was an extreme lumbo-dorsal curvature they may be the more suitable in spite of this disadvantage.

Wimpole-street, W.

BRISTOL MEDICAL CHARITIES.—The employés of Messrs. W. D. and H. O. Wills of Bedminster, Ashton Gate, and Redcliff-street, have during the past 12 months voluntarily collected the sum of £389 18*s.* 11*d.*, which has been distributed amongst the Bristol hospitals and medical charities.

UROTROPINE AS A URINARY ANTISEPTIC.

BY P. J. CAMMIDGE, M.R.C.S. ENG., L.R.C.P. LOND.,
ASSISTANT DEMONSTRATOR OF PATHOLOGY, YORKSHIRE COLLEGE, LEEDS; LATE TREASURER'S RESEARCH STUDENT IN PATHOLOGY, ST. BARTHOLOMEW'S HOSPITAL, E.C.

EARLY in the year 1899 my attention was drawn to the effect produced by urotropine on the urine of a patient under the care of Dr. S. J. Gee in St. Bartholomew's Hospital. In the course of an attack of enteric fever he had developed cystitis, and his urine, which was markedly turbid from the presence of numerous typhoid bacilli and pus, had become quite sterile and clear after some six or seven doses of the drug. Subsequent observation showed that although many cases of cystitis arising from causes other than the typhoid bacillus were also markedly benefited by treatment with urotropine it was not invariably so. This led me to investigate the action of the drug on various micro-organisms and to attempt to determine the form in which it was excreted and the manner of its action in the urine.

Although urotropine or hexamethylene-tetramine ($C_6H_{12}N_4$) has long been known to chemists as a white crystalline body produced by the action of ammonia on formaldehyde it had not been employed therapeutically until Professor Nicolaier of Göttingen introduced it in 1894 as a diuretic and solvent of uric acid. He further claimed that it would prevent the development of bacteria in the urine.[1] On attacking the subject experimentally I first endeavoured to discover what effect urotropine had on the urine of a normal individual. For this purpose a healthy adult male was selected and the daily output of urine collected and measured for three weeks. Each day it was quantitatively examined for urea, uric acid, chlorides, phosphates, and sulphates. The specific gravity, reaction, and number of acts of micturition were also noted. The results obtained in the first and third weeks were only used as a standard with which to compare those of the second week, in which 10 grains of urotropine dissolved in an ounce of water were taken three times a day. During the whole course of the experiment the conditions as to food and exercise were kept as nearly as possible constant. It was found that the drug had not any diuretic action nor was any appreciable change in the excretion of the chemical constituents of the urine observed. Urotropine was found in the urine 10 minutes after the first dose was taken and it still continued to be excreted in small quantities 26 hours after the administration had been discontinued. One curious effect produced by the drug was a sensation of formication, which appeared on the fourth day and was most intense at night and in parts pressed on by clothing, &c. It became more intense each day and on the sixth day a diffuse red rash, somewhat like that of measles, appeared. Both rash and irritation quickly subsided after the urotropine was stopped. Usually urotropine is well borne, although Nicolaier speaks of 90 grains a day causing blood and epithelial cells to occur in the urine and a burning sensation to be complained of in the bladder. The urine passed during the first and third weeks on standing was found to quickly decompose, but that of the second week, which contained urotropine, remained clear and free from smell for more than four times as long.

All investigators are agreed that much of the urotropine taken by the mouth is passed unchanged, but there is considerable divergence of opinion as to whether the antiseptic properties of the urine are due to the drug itself or to some decomposition product arising from it. It is natural to suppose that if the latter is the case it is the formaldehyde which is set free to exert its well-known bactericidal powers. Löbisch, Casper, and A. Citron have stated that formaldehyde can be obtained from the urine, at any rate in most cases, but the last-named suggests that the active body is not free formaldehyde but a soda compound of it.[2] Free formaldehyde added to urine precipitates the urea and has been suggested as a means of estimating it. Further, the

[1] Nicolaier: Centralblatt für die Medicinischen Wissenschaften, 1894, and Deutsche Medicinische Wochenschrift, 1895.

[2] Löbisch: Wiener Klinische Wochenschrift, 1897, No. 12. Casper: Deutsche Medicinische Wochenschrift, 1897, No. 45. Citron: Monatsberichte über die Gesammtleistungen auf dem Gebiete der Krankheiten der Harn- und Sexual-apparate, Band iii., No. 2, 1898; and Therapist, May 14th, 1898.

characteristic smell of formaldehyde can never be detected in the urine of persons who are taking urotropine.

In working at the effects of urotropine on micro-organisms the bacillus typhosus, the bacillus coli communis, and the staphylococcus pyogenes aureus were employed. Active broth cultures of each of these organisms were prepared and one cubic centimetre added to nine cubic centimetres of a urotropine solution made up with sterile water and contained in a sterilised test-tube. Six strengths of urotropine were used—viz., 10 per cent., 7·5 per cent., 5 per cent., 2·5 per cent., 1·25 per cent., and 0·63 per cent. The 18 preparations thus obtained, together with three control tubes of one cubic centimetre broth and nine cubic centimetres water, were all incubated at 37° C. for 24 hours. At the end of that time they were searched in a good light for signs of growth and a specimen of each examined under the microscope. Sub-cultures of all the tubes into sterile broth were then made, and these, together with the original cultures, returned to the incubator. After a further period of 24 hours the examination of the original cultures was repeated and a similar process gone through with the sub-cultures. This proceeding was continued for 10 days. Cultures were also made containing the acid urine of a patient who was taking 10 grains of urotropine three times a day. Of this one, two, three, five, seven, nine, and 14 cubic centimetres were mixed with one cubic centimetre of active broth culture and the tubes in the first five cases made up to 10 cubic centimetres with sterile water. A third set of cultures containing formaldehyde 1·0 per cent., 0·5 per cent., 0·1 per cent., 0·08 per cent., and 0·04 per cent. were also made. These, as well as the preparations containing urine, were treated and examined in the way described above. The results are shown in the following table :—

		Control broth.	Formaldehyde.					Urotropine.						Urotropine urine, 30 grains a day.						
			1·0 per cent.	0·5 per cent.	0·1 per cent.	0·08 per cent.	0·04 per cent.	10·0 per cent.	7·5 per cent.	5·0 per cent.	2·5 per cent.	1·25 per cent.	0·63 per cent.	14 c.c.	9 c.c.	7 c.c.	5 c.c.	3 c.c.	2 c.c.	1 c.c.
		Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.
Bacillus typhosus.	Culture	24	—	—	—	—	—	—	—	—	48	24	24	—	—	—	—	24	24	24
	Subculture ...	24	—	—	—	—	—	—	—	48	24	24	24	—	—	72	48	24	24	24
Bacillus coli communis.	Culture	24	—	—	—	—	—	—	—	24	24	24	24	24	24	24	24	24	24	24
	Subculture ...	24	—	—	—	—	—	—	24	24	24	24	24	24	24	24	24	24	24	24
Staphylococcus pyogenes aureus.	Culture	24	—	—	—	—	24	—	—	48	24	24	24	24	24	24	24	24	24	24
	Subculture ...	24	—	—	—	—	24	—	48	24	24	24	24	24	24	24	24	24	24	24

NOTE.—In the above table the times 24 hours and 48 hours, &c., refer to the interval which elapsed between the preparation of the cultures and the first appearance of turbidity due to the growth of the micro-organisms.

Taking first the results produced by the urine, it will be seen that both bacillus coli and the staphylococcus pyogenes aureus grew well in the 14 cubic centimetre mixture, but that the typhoid bacillus was killed by 9 parts in 10. More dilute solutions, seven cubic centimetres and five cubic centimetres, were sufficient to prevent growth in the original culture, but that the bacillus was not dead, only inhibited, was shown by the slow growth which occurred in sub-culture. The series of experiments made with a simple urotropine solution showed that 7·5 per cent. killed the typhoid bacillus completely. The same strength prevented the growth of the bacillus coli communis in the original culture, but a perceptible growth had occurred in a sub-culture in 24 hours. A similar result was obtained with staphylococcus pyogenes, only the growth in subculture was delayed 48 hours. In a 5 per cent. solution no growth of the staphylococcus was seen until 48 hours had elapsed, and a similar result was obtained with a 2·5 per cent. solution in the case of the typhoid bacillus. Urotropine alone therefore in strong solutions appears to kill micro-organisms, but weak solutions only inhibit their growth—i.e., are kolyseptic. These experiments also bring out the varying susceptibility of different bacteria to the action of urotropine. The typhoid bacillus is much more susceptible than the bacillus coli and the staphylococcus pyogenes aureus. This is borne out by clinical experience. A few doses of urotropine will clear typhoid bacilli from the urine with ease and certainty, but the bacillus coli requires a longer and more vigorous course of treatment. The inhibitory action shown by urotropine is more markedly possessed, at least in the case of bacillus typhosus, by the urine passed by a person who is taking urotropine by the mouth. Formaldehyde in a 0·04 per cent. solution was found to be sufficient to kill both bacillus typhosus and the bacillus coli communis. A 0·08 per cent. solution was, however, required to destroy the vitality of the staphylococcus pyogenes aureus. None of the inhibiting action shown by urotropine and urotropine urine was observed in the case of formaldehyde. From these experiments it seems probable that the effects produced clinically in cystitis by urotropine are not due to free formaldehyde, but either to the urotropine itself or to some body closely allied to it.

It now remained to be seen whether formaldehyde could be obtained from the urine of patients taking urotropine; and secondly, to determine the condition under which it was liberated. In carrying out these experiments the following tests for formaldehyde were employed; (1) the pink colouration produced in a solution of resorcin in sodium hydrate; (2) Schiff's reaction (a pink or violet colour produced in a solution of rosaniline hydro-chloride decolourised by sulphurous acid); and (3) Fehling's solution.

Taking first a 12½ per cent. solution of urotropine in distilled water it was found that on heating it on the water bath with a strong acid (e.g., sulphuric) formaldehyde was liberated after from two to three minutes' boiling; with phosphoric acid the same result was obtained but more slowly; and with a 10 per cent. solution of caustic soda a faint reaction was given after half an hour. It was noticed, however, that boiling the urotropine solution itself for about half an hour also caused some decomposition with the liberation of traces of formaldehyde. In order to reproduce more nearly the conditions which obtain in the body, solutions of urotropine, urotropine with dilute sulphuric acid, urotropine with phosphoric acid, and a solution of urotropine to which dilute sodium hydrate had been added, were placed in small corked test tubes provided with a delivery tube which dipped below the surface of the test solution placed in a shallow dish. These, together with a control preparation of the indicating solution, were put into the incubator and left for 24 hours at 37° C. At the end of that time the test solutions connected with the tubes containing urotropine alone and urotropine with sodium hydrate were unchanged, the acid solutions had produced some change, which was, however, but slightly marked in the case of phosphoric acid. The test-tubes were now boiled on the water bath. With the acid solutions a marked intensification of the colour was quickly noticed, but with the urotropine and alkaline solution of urotropine only a feeble change was observed after about half an hour. The same methods of procedure were adopted with a normal acid urine to which urotropine and

the substances mentioned above had been added. On boiling it was found that the solutions to which acids and alkalies had been added gave off formaldehyde in about the same time as the corresponding watery solution, but that the mixture of urotropine and urine reacted more quickly than urotropine alone. In the incubator similar results to those of the first set of experiments were obtained and on subsequent boiling the only difference was the rapidity with which the acid urine decomposed the urotropine mixed with it. The acid urine of a patient who was taking 30 grains of urotropine a day was submitted to the same tests. By boiling the urine a formaldehyde reaction was obtained in about 20 minutes, dilute alkalies delayed the result for half an hour, but with acid it was well marked in from two to three minutes. On incubation no colouration of the test solution was found to have occurred except with the acid solutions. By boiling this colour was soon much more marked, but it was 20 minutes before the urine alone produced any change and about half an hour before the alkaline mixture gave evidence of the liberation of formaldehyde. Fehling's solution is readily reduced by formaldehyde, even in very dilute solutions, but is not affected by urotropine if the boiling is not too prolonged. A patient whose urine was known to be free from sugar was placed on urotropine 10 grains three times a day and the drug shown to be present in his urine by the abundant orange precipitate produced with bromine-water. On boiling a sample of this urine with Fehling's solution no reduction took place, showing that it did not contain free formaldehyde. By distilling an acid urine to which urotropine had been added formaldehyde was liberated and passed over in the distillate, as was shown by various tests. Ammonia was at the same time set free and "fumed" with strong hydrochloric acid held near the mouth of the condenser. A watery solution of urotropine and the urine of a patient on urotropine behaved similarly.

The results of these chemical experiments may be summarised as follows:—1. Urotropine alone may, by prolonged heating, be made to yield formaldehyde, but that this decomposition does not take place at body temperature. 2. An alkaline solution of urotropine may be similarly decomposed, but that the body temperature is not sufficient to cause the change. 3. Dilute acids quickly decompose urotropine on boiling with the evolution of free formaldehyde and that this change occurs to a less degree at 37° C. 4. Acid salts—e.g., of the urine—liberate formaldehyde from urotropine on boiling, but not at 37° C. 5. The acid urine of a person taking 30 grains of urotropine a day does not contain free formaldehyde.

Although the exact chemical nature of the antiseptic body occurring in the urine has not been definitely settled it seems clear, both from the bacteriological and chemical evidence, that it is not free formaldehyde. The readiness with which urotropine is decomposed by acids, and to a less extent by acid salts, together with the more marked inhibitory power over the growth of micro-organism shown by the acid urine over simple urotropine solution or an alkaline urine, would suggest that it is not the urotropine itself which is the most important factor in producing this kolyseptic action. It seems probable that acid urines produce in the kidney a partial decomposition of the urotropine by which some body is liberated, or a fresh compound formed which has very marked inhibitory powers over the growth of bacteria. If this hypothesis is correct an important point in securing the full effect of urotropine in bacterial infections of the urine would be that the urine should be acid in reaction as it leaves the kidney. That this is so is borne out by clinical experience. One condition in which it is preeminently useful I have already mentioned at the commencement of this article—namely, typhoid cystitis. Here the urine is generally acid and the administration of urotropine quickly causes the bacilli to disappear. It has also been found useful in cystitis accompanying enlarged prostate and stricture of the urethra. Here, too, the urine is usually acid as it leaves the kidney, and only becomes alkaline from the ammoniacal decomposition which takes place in the bladder. In suppurative pyelitis and in cystitis caused by calculus in the kidney or bladder a similar condition of the urine obtains, and good effects follow treatment by urotropine. The administration of urotropine as a means of insuring an antiseptic urine and an aseptic condition of the genito-urinary tract in operations on those regions has been highly recommended by Casper. Other conditions, such as bacteriuria and the nocturnal enuresis of children, the latter being said to be frequently caused by infection with the bacillus coli communis, would probably be found to be benefited by treatment with urotropine, since the urine is acid in reaction. Experience has shown that gonorrhœa and tuberculous cystitis are not appreciably benefited, but the conditions of the infection in these two diseases are different to those previously mentioned—the micro-organisms are not in the urine but lie chiefly in the tissues.

As a urinary antiseptic urotropine appears to be much superior to those usually employed (e.g, salol, ammonium benzoate, boric acid, guaiacol, naphthalin, and resorcin), especially when the acidity of the urine is insured by suitable means. It is not, however, only a curative agent in the ordinary forms of urinary infection that the advantages of the drug are so apparent, but in typhoid fever it may be employed from the third or fourth week onward to the advantage both of the patient and the community at large.[3] Recent researches have shown that typhoid bacilli occur much more frequently in the urine than has been generally supposed and that they may persist for very long periods after convalescence (five years).[4] By the systematic use of urotropine in all cases the very real danger from this source which is so frequently overlooked may be entirely avoided.

I take this opportunity of expressing my thanks to Sir Trevor Lawrence, treasurer of St. Bartholomew's Hospital, through whose kindness I have been able to conduct these experiments, and also to Dr. F. W. Andrewes for much kind advice and assistance as the work proceeded.

INFECTIVE PAROTITIS AFTER ABDOMINAL SECTION.

BY WILLIAM ELDER, M.D., F.R.C.P. EDIN.

IN THE LANCET of Dec. 29th, 1900 (p. 1873), Dr. B. Addenbrooke records a case of double parotitis after abdominal section from which apparently two other cases of parotitis originated. The following facts in connexion with a case at present under my care are interesting when considered along with Dr. Addenbrooke's cases.

A young man, aged about 20 years, was suddenly seized with pain in the right iliac region on Dec. 19th, 1900. On seeing him I diagnosed appendicitis, and on the 23rd he was operated on by Mr. H. J. Stiles of Edinburgh, who evacuated pus from the region of the appendix. The patient did well, the temperature continuing normal till the morning of the 26th, when it began to rise and he complained of stiffness and swelling in the region of the right parotid with intense pain. The swelling rapidly increased for about ten hours when the pain subsided. At this time the whole parotid region and upper part of the neck were enormously swollen, the swelling coming forward over the cheek and involving the eyelids, especially the under one. 36 hours afterwards (on the evening of the 27th) the left parotid began to swell in the same way, whilst the right parotid began slowly to subside. The left parotid attained to almost exactly the same size as the right and the temperature reached 103° F. The swellings were very painful to pressure, but there was no indication of suppuration in either of them. The second parotid reached its maximum in about 12 hours after it showed symptoms of enlarging. Both parotids gradually subsided and the swelling has now almost entirely disappeared. The wound in the abdomen is healing splendidly and the patient is doing well.

This was a case of parotitis following an abdominal operation. These cases are known to occur occasionally, but in the case here recorded there was a complicating circumstance. On Nov. 7th, 49 days before the onset of the first symptoms of parotitis in this case, I attended the patient's brother in the same house with mumps (double parotitis). The source of infection in this case I was unable to trace. The two brothers had been living in the same house from that date till the onset of the appendicitis, but they had occupied the same room for the first time on Dec. 17th, two days before the appendicitis commenced and nine days before the first

[3] Richardson Journal of Experimental Medicine, January, 1899. Horton Smith: Goulstonian Lectures, 1900.
[4] Dr. H. Cushing's case reported by Richardson, loc. cit.

parotid became inflamed. The seven weeks that elapsed between the commencement of the symptoms of parotitis in the two cases is certainly a greater length of time than usual, but I think one can hardly exclude infection from the first case as a cause of the second case. When considered with Dr. Addenbrooke's cases these cases are interesting, as in them the opposite condition from that found in those of Dr. Addenbrooke obtained—viz., there was a case of infective parotitis in the same house seven weeks before the onset of double parotitis following an abdominal wound, whilst in Dr. Addenbrooke's cases a double parotitis followed an abdominal section, and after coming in contact with the patient inflammation was set up in the second person's parotids. This second person again apparently infected a third person. As it is, I think, doubtful whether my second case was a case of true mumps or parotitis following an abdominal wound, so I think it must also be doubtful whether Dr. Addenbrooke's first case was one of parotitis caused by the abdominal wound or a case of true mumps due to infection the source of which he was unable to trace; just as in my first case of mumps I was unable to trace the source of the infection.

Leith, N.B.

A CASE OF GANGRENE OF THE PENIS.

BY GEORGE A. CLARKSON, F.R.C.S. ENG.

GANGRENE of the penis occurring as a complication of any illness is necessarily of extreme rarity and has only been known to occur in conditions of great vital depression. It is mentioned as occurring occasionally in cases of typhus fever and it has been known to follow paraplegia. However, very few cases have been described and most surgical works do not even refer to it. In the present instance a feeble and dilated heart, extensive atheroma of the arteries, possibly inoculation of some part of the urethra with infective organisms, were the determining factors.

The patient, aged 51 years, employed in an iron foundry, had suffered severely from chronic bronchitis every winter for 15 years. For some years he had only been able to work in the summer months and latterly had so lost ground that he had been obliged to give up work even then. He emaciated considerably; his aspect became yellow and cadaverous, cough and expectoration were constant, and there was more or less complete loss of appetite and also some œdema of the legs. Examination of the chest revealed much emphysema, exceedingly feeble and distant heart sounds, and a slight impulse outside the nipple line; no murmur was audible. The temporal and radial arteries were very tortuous and rigid and the pulse was feeble and intermittent. In this condition he remained till Sept. 28th, 1899, when he suddenly became very faint and collapsed. He was put to bed and wrapped in blankets. When seen he was barely conscious, the extremities were cold, the heart sounds were inaudible, and the pulse was hardly perceptible. With cardiac and general stimulants he rallied and seemed to be better for some days. The tongue, however, remained coated and dry, there was some muttering delirium at night, and the urine, which had been ammoniacal and offensive, became more so now that he was confined to bed. On Oct. 11th he complained of considerable pain in the penis, which was much swollen all over. There was no phimosis or sore under the prepuce. On the 13th several gangrenous patches appeared and during the next day or two the whole organ became involved. Five incisions were made deep into the tissues with the view of relieving any possible tension, but there did not appear to be any; the deeper parts of the organ seemed to be equally affected and only a small quantity of dark fluid was discharged into the dressings. The whole organ appeared to be in a condition of ordinary moist gangrene. Owing to his general condition no further operative measures were deemed advisable. Continuous hot boric fomentations were applied and immersion was given in a hot boric bath; opium, carbonate of ammonia, and digitalis were given internally. The patient died on Oct. 16th, the whole organ being completely gangrenous.

It seems hardly credible that an organ with the anatomical peculiarities of the penis could be the subject of dry gangrene, yet such has occurred. In the case of a patient under the care of the late Mr. Partridge at King's College Hospital[1] gangrene attacked the penis and the organ became black and charred-looking. A line of demarcation formed, urine issued at this point, the penis dropped off, and the patient made a good recovery. His age was only 40 years.

Leicester.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quam plurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De sed. et Caus. Morb.*, lib. iv. Procemium.

ST. THOMAS'S HOSPITAL

TWO CASES OF SARCOMA OF THE BREAST.

(Under the care of Mr. W. H. BATTLE.)

TRAUMATISM as an etiological factor in the appearance of sarcoma is now generally accepted, although it is not possible to offer any very satisfactory explanation of the manner in which an injury gives rise to the new growth. In many cases the sarcoma appears before the swelling caused by hæmorrhage or inflammation has completely subsided, and it is possible that these effused products form a suitable nidus for the development of the neoplasm. True sarcomata of the breast are certainly not common, and the two interesting cases recorded below are in many ways noteworthy; especially remarkable is the age of the patient in the second case—namely, 13 years.

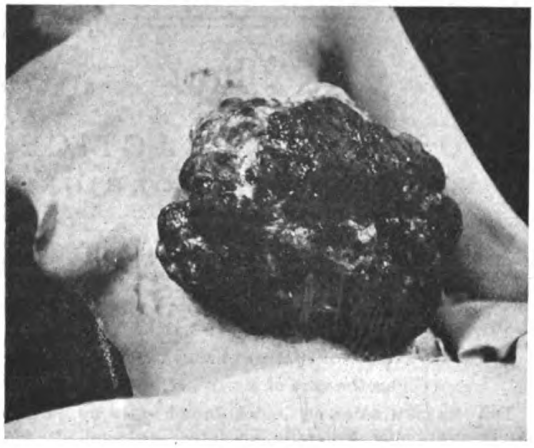
CASE 1.—A woman, aged 36 years, was admitted into St. Thomas's Hospital on June 8th, 1900, complaining of a tumour of the breast. About 14 months before admission she had received a blow on the left breast, which became tender and was much bruised. Soon after this she suffered from a sharp pain in that breast, worse in damp weather, and she also noticed that a swelling was present. She therefore consulted a medical man who prescribed some medicine. The swelling in the breast grew steadily larger and she took to her bed. About ten days before admission the patient got up and had a severe hæmorrhage from the breast and therefore had to take to her bed again. After this she was so weak that she fainted whenever she sat up. A week before admission the breast began to fungate and then grew rapidly. The only point in her family history of any importance was the statement that an aunt on the mother's side had had "cancer of the breast" for a year and was still alive.

On admission the patient was very thin and anæmic and had an anxious expression. The left breast was the seat of a large mushroom-like fungating tumour with an offensive, thin, bloody discharge (see figure). The tumour was flattened, with a margin which was much everted. The breast itself was not much enlarged and formed a kind of pedicle for the expanded part; this pedicle was narrower from within outwards than from above downwards. The surface of the tumour was nodular and blackened. In the left axilla one enlarged gland could be felt. The other organs were quite normal.

On June 11th Mr. Battle operated. The narrowness of the attached portion of the breast already mentioned was utilised; it was clamped like a pedicle with two long-bladed forceps passed from above and from below in the line of the pectoralis major. The growth was cut away close to the forceps and the breast was then excised. The axillary gland was not touched, as its enlargement was supposed to be due to septic absorption from the surface of the tumour. Very little blood was lost during the operation and this was so thin and pale that it produced merely yellow staining of the aseptic cloths which surrounded the operation area. There was apparently no tendency to infiltrate the breast substance—in fact, the breast itself appeared to be quite small and really not much larger than the opposite one.

[1] Medical Times and Gazette, vol. xx.

On June 12th the patient felt quite well and had had a good night; on the 13th the wound was dressed—it looked very healthy. Later there was a slight discharge from the wound and a small abscess formed at the upper part of the incision, but by July 3rd the wound had almost healed and



she left the hospital the next day. She was seen on August 27th and it was found that her general condition had much improved. The gland in the axilla was no longer noticeable. The report of the microscopic examination of the growth stated that it was a round-celled sarcoma.

CASE 2.—A girl, aged 13 years, was admitted into St. Thomas's Hospital on July 5th, 1900, complaining of a swelling of the right breast. Two months before admission the patient received a blow on the right breast, and soon afterwards she noticed a small lump in that breast, which, after a short time, went away spontaneously, but a week or so later she noticed a swelling "as large as a nut" in the same place. This gave her occasional pain and gradually increased in size. The case had at first been treated as a mastitis There was nothing of any importance in either the personal or family history.

On admission the right breast was found to contain a prominent, somewhat bossy swelling; it was of about the size of a Tangerine orange and was freely moveable on the deeper structures. It was surmounted by the nipple, where it was also most painful, though at times it gave her no pain at all. On palpation a slight amount of fluctuation could be felt just above the nipple. The skin was nowhere bound down to the swelling except immediately below the nipple. The most striking feature about the breast was the bold manner in which the tumour stood out from the chest-wall, in marked contrast to the ill-developed breast on the other side. Nowhere in the breast was there any sign of inflammation. In the axilla a few glands might be felt, although they had not attained any considerable size. The urine on examination was found to contain a trace of albumin and blood and a doubtful trace of sugar.

On July 13th Mr. Battle operated. He made an oblique incision about six inches in length from the anterior axillary fold downwards and inwards, passing about an inch below the nipple The two ends of this incision were connected by another which passed about an inch above the nipple. The tumour was then dissected out with the whole of the breast and much of the surrounding fatty tissue. The fascia covering the pectoralis major was also removed. The two edges of the skin were then united by salmon-gut sutures and the wound was dressed with dry cyanide gauze. The patient bore the operation well and no rise of temperature occurred at any time and the wound was not dressed until the 19th, when it was found to have healed almost throughout its length. She was discharged from the hospital on July 21st. The report from the clinical laboratory stated that it was an adeno-sarcoma.

Remarks by Mr. BATTLE.—The report from the Clinical Laboratory on the first case describes the growth as a round-celled sarcoma. This may be correct but there are one or two points which suggest the possibility of it being a simple fungating growth from within a cyst. These are (1) the small involvement of breast tissue; (2) the absence of glandular disease; (3) the absence of any other growths; and (4) the fact that the history was rather long for a round-celled sarcoma. On the other hand, the history of injury and the report of the microscopical examination are in favour of the growth being a sarcoma.

The second case was traumatic in origin and is one of the youngest of the kind on record. The way in which the tumour stood out from the surface was very striking and quite unlike the appearance presented by mastitis. The absence of œdema was also noteworthy. Sheild[1] describes one case of myxo-sarcoma at the age of six months, the specimen being in the Royal College of Surgeons of England. He also recorded a case for the late Sir George Humphry, the patient being 14 years of age; this was a spindle-celled growth.

GOVERNMENT CIVIL HOSPITAL, HONG-KONG.

TWO CASES OF RUPTURED SPLEEN; ABDOMINAL SECTION; ONE RECOVERY AND ONE DEATH.

(Under the care of Mr. J. BELL, Acting Principal Civil Medical Officer.)

EXCISION of the spleen for disease is an operation with an extremely high mortality and it is doubtful if recovery has ever followed when the operation has been done for leucocythæmia. For injury, however, excision of this organ is an extremely satisfactory operation, and even in pre-antiseptic days cases occurred in which a spleen extruded through a wound of the abdominal wall was removed after its pedicle had been tied.

CASE 1.—A Chinese male adult was admitted into the Government Civil Hospital, Hong-Hong, on Sept. 6th, 1900, at 12.45 P.M., having been assaulted in the early morning. He was much collapsed and in great pain, chiefly referred to the epigastrium. There was well-marked dulness in both flanks and he had a quick small pulse. Assisted by Captain Wall, I.M.S., the abdomen was rapidly opened in the middle line under strict antiseptic precautions, the spleen was removed, and the peritoneal cavity was thoroughly cleared out with warm sponges. During the operation Dr. Thomson of the Royal Army Medical Corps and Lieutenant J. W. F. Rait, I.M.S., kept up transfusion, which proceeding very materially contributed to the successful result. The spleen weighed 16 ounces and was torn right across. At 9 P.M. the patient had rallied from the shock and was very comfortable. On the third day, owing to great distension, the wound gaped, so the patient was again put under an anæsthetic and several more stitches were inserted. Free purging soon removed the distension. The patient recovered slowly, the wound healing well. On Oct. 20th he was well enough to attend at the police-court and on the 27th he left the hospital.

CASE 2.—A Chinese male, aged 27 years, was admitted to hospital at 10 A.M. on Sept. 19, 1900, having been mixed up in a free fight. He had been kicked and struck on the abdomen and head. The patient was not much collapsed but complained of great pain over the abdomen. He slowly got worse all day, and at 8 P.M. there were well-marked signs of internal hæmorrhage. Owing to the delay of taking his dying depositions it was not possible to interfere till midnight. Assisted by Dr. G. P. Jordan, who before the operation began transfused two pints of saline fluid into the cellular tissue of the axilla, the abdomen was opened in the middle line, the spleen was removed, and blood-clots were cleared out. The organ weighed 18 ounces and the rupture had occurred beneath the capsule which was completely raised from the surface and had ruptured close to the hilum. 24 hours later the patient had completely recovered from the shock. His pulse had improved under strychnine and camphor and he expressed himself as feeling quite comfortable. On the following day, however, cerebral symptoms set in. with gradually increasing coma, great restlessness, and a rising temperature, till 8 P.M., when he died, the temperature being 106° F. and the pulse 148.

Necropsy.—At the post-mortem examination the abdomen was found to be clean and the ligature was quite fast on the stump. There was much extravasation in the muscles behind the right ear. Exactly opposite on the left side there was a fracture running through the petrous portion of the

[1] Diseases of the Breast.

temporal bone to the base of the skull. There was a large clot pressing on the medulla.

Remarks by Mr. BELL.—These cases will serve, I hope, as an encouragement to others to operate even after a long interval has elapsed since the accident. Transfusion early undoubtedly helped greatly to the successful result.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

The Value of Skiagraphy in the Diagnosis of Chest Disease.

A MEETING of this society was held on Jan. 14th, Mr. JOHN H. MORGAN, the President, being in the chair.

Dr. HUGH WALSHAM and Dr. E. CLIFFORD BEALE communicated a paper on the Value of Skiagraphy in the Diagnosis of Chest Disease, illustrated by skiagrams of various morbid conditions within the thoracic cavity. In order to obtain a satisfactory shadow either upon the fluorescent screen or the sensitive plate it was absolutely necessary to employ a powerful coil capable of yielding a 12 or 14 inch spark. The patient should lie on a couch face downwards, the sensitive plate, duly protected from light and injury, being placed under the chest and the tube from two to three feet above it, great care being taken that the anti-cathode in the tube should be placed exactly vertical to the part of the chest to be examined. Stereoscopic views could be obtained by means of Mr. Mackenzie Davidson's apparatus. An exposure of two minutes was, as a rule, sufficient in the case of the chest, but the greater the distance of the tube from the object the longer should be the exposure. In observations with the fluorescent screen the tube must of necessity be closer to the chest-wall, and allowance had then to be made in interpreting shadows for the apparent enlargement of the tissues lying nearest to the tube owing to the divergence of the rays. It was always advisable to examine with the screen at the back as well as at the front, and useful information could often be obtained by diagonal observations. No danger need be apprehended where the rays were only passed for a few minutes at a time. Cases of dermatitis had from time to time been reported, but in such instances the exposures had been excessive—viz., from half an hour to two hours. In order to interpret morbid shadows it was necessary to study those thrown by the normal thoracic structures. Several skiagrams of healthy chests were then thrown upon the screen, in all of which the shadows of the heart, diaphragm, and mediastinal tissues were clearly seen, but in addition to them certain faint streaks by the left side of the heart and both sides of the mediastinal shadow. These had been shown by Dr. Walsham's and Dr. Beale's observations to be due to the pericardium and visceral pleura. The shadow of the scapulæ, the anterior axillary fold, and in some cases of the nipple might be recognised as normal, but they were easily identified by moving the arms. Healthy lungs were shown to be translucent. It had long been recognised that advanced tuberculous changes showed definite shadows, but the very earliest deposits of tubercle did not yield any appreciable shadow. Cases were quoted and exhibited proving that tuberculous shadows could be detected before the presence of tubercle was indicated by any abnormal physical signs, and that in suspected early cases where no shadow appeared there was no subsequent evidence that the disease was actually present. In cases that had been presumed to be unilateral disease a shadow was sometimes to be found at the other apex also and in many such instances the extent as well as the presence of the disease could be clearly defined. The more advanced the disease the darker the shadow, especially where caseation was in progress. Cavities were indicated by light areas in the midst of dense shadows. Fibroid changes and adhesions only gave rise to a shadow after they attained to a definite density and the shadows differed considerably from those thrown by tubercle. Emphysema was indicated by exceptional translucency of the affected parts of the lung. In early dry pleuritis only a very faint shadow could be detected. Serous effusion caused faint blurring of the rib shadows but did not obliterate them; the upper margin of the fluid frequently showed a clear line of demarcation. Purulent effusion, on the other hand, caused very dark shadows. A tube of pus removed from the pleural cavity gave a shadow almost as dark as that of a bone of equal calibre, very much darker than the shadow of a similar amount of fluid blood or of serum. Abscesses, like caseating nodules, threw dark shadows, and caseous tuberculous nodules were clearly discernible even through thick tissues such as the kidney. In heart diseases the rays were of less diagnostic value, but much more observation was necessary on this point. By far the most important use of skiagraphy in chest disease was for the detection of morbid growths and aneurysms. Many examples of the latter were shown where the evidence afforded by the rays was far more precise and definite than that obtained by the ordinary methods. By means of the skiascope the movements of the heart and diaphragm could be watched, and the condition of aneurysms, whether full of dark clot or semi-translucent fluid blood, with the extent and position of their maximum pulsation, could be determined with considerable accuracy. Much more work remained to be done on the subject and the paper was put forward only as a preliminary statement of the observations already made.

The PRESIDENT remarked that the art of radiography was still in its infancy and a contribution like that before the society was highly welcome. He hoped that it would elicit further information from the members present.

Dr. H. LEWIS JONES congratulated Dr. Walsham and Dr. Beale upon their paper. He had seen a great deal of Dr. Walsham's work and he was a most painstaking observer. He had no doubt about the value of radiography. If he were doubtful about a case of early pulmonary tuberculosis he would rather have a skiagram than the opinion of the best auscultator on the case. It was no doubt necessary to have some experience and knowledge to be able to read the different shadows in skiagrams, but a little practice rendered a person skilful in this respect. No doubt by-and-by an apparatus of this kind would become a necessary part of a physician's means of observation and they should by-and-by be able to set aside the stethoscope. As to aneurysm, the disease had within his experience been revealed both in unsuspected cases and in cases which were only suspicious.

Dr. A. E. SANSOM was entirely in favour of the use of radiography. He had used it very often and attached great value to it, but he could not agree with the suggestion of doing away with the stethoscope. Auscultation, palpation, and percussion would always remain valuable means of physical diagnosis and the x rays were a valuable supplementary method but could not replace the others. He remembered, however, one case in which the x rays clearly showed a bulging aorta in which the physical signs and other symptoms were absolutely negative.

Dr. J. KINGSTON FOWLER wished to emphasise the necessity of using the very best apparatus procurable. Short sparks were no use. He quoted cases of pulmonary tuberculosis in which the x rays had been of considerable use, but he was afraid that on some occasions the first rib came in the way of diagnosing disease at the apex. Radiography was a valuable means of diagnosis but he did not think exaggerated claims should be made for any one method.

Dr. BEALE, in reply, said that Dr. Walsham had done the practical work in connexion with the paper and it had required great perseverance to accomplish. He personally did not advocate the replacement of the older methods. He regarded radiography as simply an adjunct to them. He hoped that in spite of the expense the apparatus would soon become a necessary and routine means of investigation. He spoke very highly of Mr. Mackenzie Davidson's spectroscopic apparatus and he concluded by demonstrating the diagonal method of examining the chest. This was, he said, a novel and valuable means of examining certain cases. It had been employed at Nice and Vienna but had not hitherto been employed in England.

PATHOLOGICAL SOCIETY OF LONDON.

Cirrhosis Maligna.—Primary Cancer in a Cirrhotic Liver with Metastasis in the Lungs.—Primary Carcinoma of the Liver associated with Cirrhosis.—Cirrhotic Liver the seat of Secondary Carcinoma.—Chronic Cholangitis in a Child.—Localisation of the Bacilli of Leprosy.—Adenomatous Papilloma of the Sigmoid.—Chondro-sarcoma of the Tibia associated with Pendulous Bodies.—Malignant Disease of the Suprarenal Body.

A MEETING of this society was held on Jan. 15th, Mr. W. WATSON CHEYNE, the President, being in the chair.

Dr. H. D. ROLLESTON read a paper on a case of Primary Carcinoma in a Cirrhotic Liver (Cirrhosis Maligna or Cirrhosis Carcinomatosus). The patient was a man, aged 44 years, who during life had hæmatemesis, pain in the hepatic region, and ascites which required tapping on four occasions. At the necropsy the liver was the only organ showing any new growth; it was universally cirrhosed, weighing 52 ounces, and in addition presented a white gelatinous growth projecting from the right lobe which by invading the liver substance had grown directly into the bifurcation of the portal vein; the growth had travelled along the portal vein and given rise to secondary carcinomatous nodules in the liver. Microscopically the tumour was formed of deeply staining cells arranged in the form of twisting tubules with obliterated lumina; the tubules were separated from each other by capillaries, had an irregular arrangement, and corresponded to the form of carcinoma described by Hanot and Gilbert as "Épithéliome trabéculaire." These writers regarded the growth as synchronous with, and due to the same cause, as the cirrhosis. Sabourin, with whom Dr. Rolleston agreed, regarded the cirrhosis as the earlier change. It seemed possible that the growth was a further development of the so-called new bile-ducts which in reality might be considered in the light of a compensatory hyperplasia of the liver-cells. The growth might, therefore, like chronic endarteritis, be regarded in the light of a hyperplasia that failed. Possibly this malignant change was due to infection with the—as yet undiscovered—parasite of cancer. Sections of the portal vein showed its lumen to be filled with the same growth, and on this the diagnosis of malignancy and the distinction from cirrhosis complicated by adenoma depended.

Dr. WILLIAM HUNTER made a communication on two cases of Primary Cancer in a Cirrhotic Liver with Metastasis in the Lungs. The first was that of a man, aged 60 years, who was admitted for dropsy and ascites after an illness of only six weeks' duration. The second case was a man, aged 55 years, who was admitted for jaundice with ascites after an illness of three months duration. Both the patients were tapped, but a fatal issue resulted. In both cases the liver was the seat of (1) coarse multilobular cirrhosis, (2) islets of apparently healthy liver cells, (3) deposits of cancer cells in some of these islets, and (4) thrombosis of the branches of the portal vein. In both cases there were metastatic deposits in the lungs of the same neoplasm which presented a markedly tubular character. Dr. William Hunter expressed the view that the neoplasm originated from the liver cells by the direct transformation of the latter. Many of the cells were multinuclear and presented evidence of extreme activity. The growths in the lungs resembled in a very remarkable way the new growths in the liver.

Dr. CAMPBELL THOMSON showed a specimen of Primary Carcinoma of the Liver associated with Cirrhosis which occurred in a man, aged 40 years. The liver was much enlarged and weighed 85 ounces. The right lobe was almost entirely infiltrated with new growth, which formed, also, a large central raised mass from which nodules of various sizes radiated. There was extensive thrombosis of the portal veins. The liver was cirrhotic and showed typical projections on its surface and on section. There were numerous secondary growths in both lungs and in the lymphatic glands. During the past two years Dr. Thomson had made 170 post-mortem examinations upon cases of malignant disease at the Middlesex Hospital, and out of these had found only three cases of primary carcinoma of the liver of which only this one had been associated with cirrhosis. He thought, from the appearance of the growth, that the simultaneous occurrence of the carcinoma and the cirrhosis in this specimen was probably a coincidence.

Dr. H. MORLEY FLETCHER exhibited a Cirrhotic Liver the seat of Secondary Carcinoma taken from a man, aged 54 years, who had been admitted for cirrhosis with ascites. In this case the carcinomatous deposit was a secondary growth and in that way differed from the cases of the previous speakers. The liver also showed a remarkable malformation of the gall-bladder, which was attached to the upper surface of the right lobe of the liver.—The PRESIDENT asked Dr. Hunter whether he actually saw the continued development of cancer cells from the liver cells or whether he only inferred that the change took place.—Dr. A. G. AULD remarked that the statement by Dr. Hunter that the liver cells were directly transformed into carcinomatous cells was open to grave doubt. It had been held by some pathologists that the liver cells themselves were derived from the mesoblast and transformation of hepatic cells into connective tissue had been described by Hamilton and others. He thought there was much probability in this. Some years ago he had met with a case which had first given him the impression that cancer cells had been developed from liver cells, but further investigation showed such hypothesis to be fallacious.—Mr. S. G. SHATTOCK had met with cases of this class. He had never seen any difficulty in recognising the fact that carcinoma could arise from liver cells. He had always been under the impression that the liver was a structure of hypoblastic origin. There were, in point of fact, two classes of hepatic carcinoma—one which arose from the ducts and another, the spheroidal-celled class, which was derived directly from the liver cells.—Mr. C. A. BALLANCE asked what was the exact difference between a normal cell and a cancer cell in the liver.—Dr. HUNTER, in reply, said that he did not mean to imply that there was a total transformation of a mass of liver-cells into cancer, but in certain islets there could be seen an extension from cell to cell of the carcinomatous characters. The difference between a normal liver-cell and a cancer-cell was very striking. The former underwent enlargement and presented differences of staining, especially in the nuclei.

Dr. H. MORLEY FLETCHER also exhibited specimens taken from a case of Chronic Cholangitis. The patient was a child, aged three and a half years, who was admitted to St. Bartholomew's Hospital, under the care of Sir William Church, suffering from severe dyspnœa. The illness had begun two weeks previously with cough and on admission the respirations were from 80 to 90 a minute. The liver was enlarged, but there was no jaundice or any other symptoms pointing to disease of that organ. The child died four days later. The lungs were in a condition of acute bronchiectasis, similar to that shown to the society by Dr. H. H. Tooth some years ago. The liver contained pale areas of fibrous tissue surrounding the bile ducts, with numerous cystic spaces filled with bile-stained débris. There was evidence of a pericholangitis, of long-standing, as shown by the development of well-formed fibrous tissue with formation of new bile ducts therein. In places an acute cholangitis had occurred with destruction of the bile ducts and formation of a cyst containing bile-stained material. The origin of the lesions was obscure. No evidence of syphilis could be obtained.—Dr. HUNTER asked if there had not been any jaundice? He had recently seen a case somewhat resembling this one of infective cholangitis occurring in a man. This case had been less chronic in character.—Dr. ROLLESTON recalled a case which he had seen three years before of a man, aged 48 years. The liver had not presented white lumps softening in the centre, but there was evidence that two changes had taken place in the liver: (1) a cholangitic and (2) a streptococcal infection of the lymphatics, by which means the portal veins had become infected and the seat of thrombosis. He thought that the lymphatics played a prominent part in the pericholangitic changes.—Dr. FLETCHER, in reply, said he did not place any special importance on the fact that his patient was a child. He thought Dr. Hunter's suggestion a very good one and that the lymphatic system played a very great part in the process.

Mr. GEORGE PERNET read a paper entitled "The Bacilli of Leprosy: Are they Extra- or Intra-cellular?" Most observers and writers were of opinion that the colonies observed in sections of tissues were situated within the cells. Mr. Pernet opposed this view and on this point agreed with Unna, Leloir, and others who contended that the masses were extra-cellular. The so-called lepra cells were not cells at all, but glœal masses of bacilli. He (Mr. Pernet) had examined many microscopical preparations of leprous tissues and his conclusion was that the great majority of the bacilli were in the intercellular and lymphatic spaces; that was to say, were extra-cellular. As to the meaning of the glœal masses, he expressed the belief that they were a stage in the life-history of the bacillus lepræ, just as a similar stage had been demonstrated, for instance, in connexion with cladothrix dichotoma (of Billet). It was probably a resting stage, during which the parasite prepared for further proliferation. This agreed with the clinical experience of leprosy, in the course of which fresh eruptions and exacerbations were frequently observed. The paper was illustrated by microscopical preparations.—Dr. F. W. ANDREWES remarked that three years ago the

late Professor Kanthack brought before the Pathological Society of London a series of sections to demonstrate that many of the so-called leprous cells were in reality only lymphatic spaces stuffed with clumps of bacilli. He had specimens in his possession which showed that at any rate in the spleen certain of the true splenic cells contained bacilli. Some were distributed outside but certainly some were within the cells.—Mr. S. G. SHATTOCK confirmed the last speaker and said that in the lymphatic glands he had found the same intracellular distribution. It was a fact beyond dispute that some of the cells contained bacilli and some of these were undergoing vacuolation.—Mr. PERNET, in reply, said that he quite admitted the fact that the bacilli might be both extra- and intra-cellular, but the point he wished to establish was that in the majority of instances they were extra-cellular. He also wished to emphasise the fact that these so-called leprous cells were masses of bacilli and not true cells.

Mr. PHILIP DE SANTI read notes of a case (and exhibited the specimen) of Papillary Adenoma of the Sigmoid Flexure. The patient, who was 51 years of age, had been under the care of Dr. R. G. Hebb for some months as an out-patient and had suffered from constipation and diarrhœa, pains in the abdomen, occasional vomiting, and passage of blood and "slime" per rectum. In 15 months he had lost two and a half stone in weight. In the left iliac fossa could be felt a fairly distinct hard lump, evidently intra-abdominal and connected with the sigmoid flexure. Malignant disease was suspected, and in September, 1900, Mr. de Santi opened the abdomen and the sigmoid flexure, exposing a small tumour which turned out to be a simple pedunculated papillary adenoma. The tumour was removed, the gut was closed with Lembert's sutures, and the patient made an uninterrupted recovery. The points of interest in the case were, first the train of symptoms which, together with the feel of the tumour were strongly suspicious of malignant disease; and secondly, the rarity of a tumour of this sort as a solitary growth of the sigmoid flexure.

Mr. S. G. SHATTOCK exhibited the Knee-joint of a woman operated upon by Mr. C. Stonham for a Tumour of the Head of the Tibia. On the bone being sawn through after amputation, there was found a large tumour in the head of the tibia and others of smaller size in the lower end of that bone and the lower end of the femur. The tumours were of the calcifying chondro sarcomatous kind. The interest of the specimen, however, related to the presence of pendulous bodies which projected from the synovial membrane of the knee-joint; these presented precisely the same structure as the growth in the head of the tibia. The same doubt as to the explanation of such association existed now as when Virchow discussed the subject of multiple chondromata in his lectures. Mr. Shattock held that both the possible views were correct in different cases. According to one view all the lesser growths in the present case would be metastatic to the chief tumour in the head of the tibia. The other view was that a sarcomatous metaplasia had affected several dormant foci of cartilage independently. The cartilage cells present normally in the synovial fringes of joints were as much fœtal, or developmental, relics as the foci that might remain in the ends of the long bones, since they dated from the liquefaction of tissue whereby the articular cavities were formed between the cartilaginous bases of the bones. The pendulous bodies in the present specimen contained areas of such well-developed cartilage that what had happened was probably a sarcomatous transformation like that which had occurred in the head of the tibia, and in a considerable area of the centre of the tumour, which consisted of pure hyaline cartilage and represented an intra-osseous chondroma. The same doubt obtained in the condition which had been named by Garré "secondary malignant neuroma." In some of these cases the sarcomata of the nerves appeared to be metastatic upon a sarcomatous transformation in a nerve-fibroma; in others they appeared to arise independently in pre-existing fibromata of the nerves. In the second class of case the sarcomatous transformation occurred in tumours so widely separated (the disease being still confined to the nervous system) that a metastatic infection was hardly credible; in the first class of case the recurrences involved a series of nerves centripetally, and here the passage of infecting cells by the lymph channels of the nerves themselves would serve to explain why the metastasis was for a long while limited to the nervous system though visceral disease might ultimately ensue.—The PRESIDENT wished to understand whether these tumours were malignant or not. It did not necessarily follow that because a structure showed sarcomatous growth a tumour was malignant.—Dr. W. S. LAZARUS-BARLOW remarked that there was a second deposit at the lower end of the tibia. This with the secondary growths in the pendulous bodies showed the case to be malignant, but it was limited to the lower segment of the lower limb.

Dr. O. K. WILLIAMSON exhibited the Right Suprarenal Body from a woman, aged 51 years, which was completely involved in a mass of new growth, the primary deposit having occurred in the mediastinum.

CLINICAL SOCIETY OF LONDON.

Fatal Pancreatic Cyst of Enormous Size simulating Ascites —Subacute Combined Degeneration of the Spinal Cord in Association with Pernicious Anæmia.—Syphilitic Disease of the Aortic Valve.—Rheumatic Periostitis with Subcutaneous Nodules.

A MEETING of this society was held on Jan. 11th, Sir R. DOUGLAS POWELL, Bart., the President, being in the chair.

Dr. SIDNEY PHILLIPS read the notes of a case of Fatal Pancreatic Cyst of Enormous Size simulating Ascites. The patient, a man, aged 22 years, received a kick in the abdomen from a horse causing intense pain which confined him to bed for a time. After this he was subject to occasional acute attacks of abdominal pain, and five months later he was admitted into St. Mary's Hospital, very emaciated, without pyrexia, but with an enormously tense distended abdomen, dull on percussion everywhere except in the area of the stomach. There was a fluid thrill and eversion of the umbilicus; the percussion dulness did not alter quite so freely with altered positions of the patient, as was usual in ascites, but it seemed probable that it was a case of ascites with peritoneal adhesions. The patient became gradually worse, and after 145 ounces of fluid had been drained off by Southey's tubes there was no improvement. A few days later, therefore, an incision in the abdominal wall below the umbilicus was made and a large quantity of fluid like that of ascites was let out; the wound healed up but the patient continued to get worse and died a few days later. The necropsy showed that the fluid had been contained in a huge cyst of the pancreas occupying nearly the whole of the abdominal cavity and coming forward close to the abdominal wall. The stomach was above the cyst and the margins of the two structures were closely adherent; downwards the cyst extended to the pelvic brim. The cyst had originated in a communication one-sixth of an inch in diameter in the head of the pancreas. Dr. Phillips commented on the enormous size of this cyst, which virtually filled the whole of the abdominal cavity, and was indistinguishable during life, and without careful dissection after death, from ascites. The contained fluid had a specific gravity of 1002; it was clear and slightly yellow in colour, was exactly like that in ordinary ascites, and was different from that generally contained in pancreatic cysts. Neither tapping nor laparotomy could have been expected to effect a cure in such a case even if its nature had been known.—Mr. NEWTON PITT remarked that an interesting feature of the case was the enormous size of the cyst, such cysts, he added, sometimes presenting above and sometimes below the transverse colon. He asked in which position it appeared in Dr. Phillips's case. The nature of the fluid was to him the most noteworthy feature in the case. In all recorded cases of pancreatic cyst the fluid had been turbid with much débris, and it was very striking that in this case the fluid should have been clean, with a specific gravity of 1002, exactly resembling ascitic fluid. He thought the circumstance needed explanation. Referring to the digestive action of the fluid on the tissues with which it came into contacts he remarked that this made the case under consideration even more unusual.—Dr. J P ZUM BUSCH mentioned a somewhat similar case which he had seen nine years ago. On admission the case was thought to be one of cirrhosis of the liver, and upwards of five litres of clear fluid were withdrawn which turned starch into sugar. He remarked that it was highly dangerous to tap in these cases. In the case to which he referred the patient subsequently died from septic peritonitis and at the

necropsy it was found to be a case of pancreatic cyst.—Mr. A. E. J. BARKER asked what was the exact relation of the tumour to the stomach; sometimes these cysts presented above and sometimes below that organ. Rupture of such cysts generally proved fatal and they certainly ought not to be treated by puncture but by incision.—The PRESIDENT referred to a case in which puncture was resorted to under the impression that there was ascitic fluid. In another case a very large pancreatic cyst was taken to be hydatid and was incised; then a correct diagnosis was made and the patient recovered. He subsequently developed glycosuria and died from diabetes.—Dr. PHILLIPS in reply, said he had brought the case forward as one in which the diagnosis had not been made and consequently not as guide to treatment. He regretted that no chemical examination of the fluid had been made during life, and at the necropsy it was not possible to procure any of the cyst contents.

Dr F. E. BATTEN read notes of a case of Subacute Combined Degeneration of the Cord in association with Pernicious Anæmia. The case was that of a man, aged 45 years, who some five or six years previously—i.e., in 1894—noticed that he was becoming pale. In 1897 he was admitted to the North-West London Hospital, under the care of Dr. Harry Campbell, with pernicious anæmia. He improved under treatment and was discharged. In November, 1899, he was admitted to Regent's Park Hospital, under the care of Dr. L. G. Guthrie, suffering with spastic paraplegia, which had developed gradually two months before admission. He remained in that hospital till February, 1900. He was admitted to "Friedenheim" under the care of Dr. P. J. F. Lush in April of the same year. He had then the aspect of a man with pernicious anæmia; the legs were rigid and there was still slight voluntary power, the knee-jerks were exaggerated, and ankle clonus was present. The examination of the blood showed extreme diminution in the number of red cells, nucleated red corpuscles, macrocytes, microcytes, and poikilocytosis. There was loss of sensation over the feet and legs below the knees. There was complete loss of control over the sphincters and a bed-sore formed over the sacrum. The patient died at the end of April. The microscopical examination of the cord showed degeneration of the posterior columns, degeneration in the region of the crossed pyramidal and direct cerebellar tracts, and also in the region of the direct pyramidal tracts. The liver gave the free cross reaction but not to a marked degree. The pathology of the condition was next dealt with and it was suggested that the cord changes and the anæmia were probably due to one and the same poison. The occurrence of spinal cord changes in association with profound anæmia was well recognised, but only a small proportion of these cases showed changes in the blood characteristic of pernicious anæmia. Dana had stated that proportion to be 10 per cent. The paper was illustrated by lantern slides and microscopical specimens.—Dr. J. A. ORMEROD mentioned the case of a man with symptoms of pernicious anæmia who subsequently developed symptoms pointing to spinal disease—numbness, loss of knee-jerk, &c.—who rapidly sank and died, when changes were found characteristic of this form of disease.—Dr. PERCY KIDD asked what were the precise clinical symptoms in these cases, adding that he had had several cases of pernicious anæmia associated with numbness, and he referred to the case of a man in whom, in addition to numbness and tingling, the knee-jerk was absent. He asked whether this was usual.—Dr. NEWTON PITT asked Dr. Batten whether he had met with cases of the kind in which the changes were limited to the posterior columns. In a similar case under his own observation nothing during life pointed to spinal disease, and he raised the question whether the cases in which the predominant symptoms were those of pernicious anæmia were those in which the mischief was limited to the posterior columns.—The PRESIDENT asked whether any changes had been noticed in other parts of the nervous system.—Dr. BATTEN, in reply, said that the brain was perfectly healthy as far down as the middle region of the pons, where a few degenerated fibres were found in the pyramidal tracts. He regretted that the colour index of the hæmoglobin had not been noted. In regard to the clinical symptoms the loss of knee-jerk was very characteristic. The disease had three stages, one in which there were ataxia with slight spasticity and slight subjective signs, numbness, and tingling in the hands and feet; a second period when the spasticity was marked and the knee-jerk was active; and a third characterised by absolute flaccidity, often coming on suddenly with a rise of temperature, total absence of reflexes, ultimately involving the trunk. It was worthy of note that in spite of the absence of knee-jerk and clonus the Babinski extensor sign could be obtained. In reply to Dr. Pitt he observed that if the pernicious anæmia proved fatal before the disease had advanced very far the changes might be limited to the posterior columns, and he asked whether the case referred to by Dr. Pitt had been examined by the Marchi method, which showed changes of recent supervention. Many cases published by continental observers had apparently had no spinal symptoms and had shown the degeneration limited to the posterior columns.

Dr. CHARLES W. CHAPMAN read a paper on a case of Aortic Regurgitation probably due to Syphilis. The patient was a married woman, aged 40 years, who had been under his care at the National Hospital for Diseases of the Heart. The family history was exceptionally good and the personal history was equally so up to the patient's first confinement at 22 years of age. Out of eight children born at term two died at two years from diphtheria, another had snuffles and died from bronchitis a few weeks after birth. There were four miscarriages from the eighth to the twelfth week. The patient was very feeble and had a wan appearance. On examination the heart's action was found to be unequal; the apex was just under the sixth rib and just outside the nipple line. The cardiac dulness was but little increased. A faint but distinct double murmur was heard in the aortic area. The other organs were healthy. The pulse was feeble. Syphilitic disease of the aortic valve was diagnosed and the treatment consisted of a course of mercury followed by iodide of sodium. Eleven months after treatment the heart sounds were found to be quite normal and had remained so. Thirteen months after the patient had been under treatment an exceptionally healthy child was born who had remained strong up to the present time. He justified his diagnosis by the history of the case and the success of the treatment. He quoted from the writings of Sir William Broadbent, Dr. Clifford Allbutt, and Professor Dieulafoy in support of his contention, and emphasised the importance of recognising syphilitic affections of the viscera by a reference to Wilks' and Moxon's lectures.—The PRESIDENT asked whether there was any notable change in the left ventricle.—Dr. PHILLIPS said it was generally recognised that aortic regurgitation was often the result of syphilis and referred to the case of a young man, an outpatient at St. Mary's Hospital, who had an aortic diastolic murmur and very severe attacks of angina pectoris. He had had syphilis and rheumatism and he improved under iodide of potassium, which, he observed, relieved not only syphilitic but also other cases of angina Some time later the man died, having commissioned his mother to communicate with him (Dr. Phillips) and to ask that his body might be examined. Post mortem they found attached to the aorta a round gumma almost as large as a cobnut. There was hardly any degeneration of the aorta.—Dr. CHAPMAN, in reply to the PRESIDENT, said that the left ventricle was enlarged downwards but not upwards.

Dr. HUGH THURSFIELD read notes of a case of Rheumatic Periostitis with Subcutaneous Nodules. The patient, a boy, aged nine years, was brought to the Hospital for Sick Children in November, 1900, with a marked periosteal thickening of the inner aspect of the shaft of the right tibia and covered from head to feet with subcutaneous nodules. There was no evidence of congenital or acquired syphilis and there were several minor manifestations of rheumatic infection, stiffness, and pain in the hamstring muscles, and a small effusion into the knee-joint. The heart was very slightly dilated, but there was at no time any endocardial murmur. Rheumatic periostitis of the ulna had been recorded in 1889 by Dr. Archibald Garrod and Dr. J. A. Coutts, but was apparently a very rare condition. The appearance of nodules in any number without endocarditis or pericarditis was very rare; in fact, Dr. W. B. Cheadle regarded nodules in any number as certain evidence of severe cardiac lesions. Dr. W. B. Hadden had, however, reported one case to the Clinical Society in 1889, and there could be no doubt that they did sometimes occur, but as a general statement Dr. Cheadle's rule held good.—Dr. A. F. VOELCKER quite agreed that cases in which nodules existed were those in which grave cardiac mischief occurred. In the case of Dr. Hadden's to which Dr. Thursfield had alluded the boy had subsequently been re-admitted with a fresh attack of rheumatism and definite endocarditis.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

Paracentesis Thoracis.—Complication of Nerve Diseases.—Friedreich's Ataxia.—Calcium Chloride.

A MEETING of this section was held on Dec. 14th, Sir C. J. NIXON, the President, being in the chair.

Dr. JOSEPH O'CARROLL exhibited a man, aged 65 years, admitted into hospital on May 25th, 1900, for dyspnœa, epigastric pain thirst, frequent micturition, and want of sleep due to dyspnœa. There was a soft systolic murmur at the cardiac apex; the urine showed a faint trace of albumin and some sugar, both by Fehling's test and fermentation. The man went to bed for about three hours in the evening, but could not lie down; he got up about midnight and spent the rest of the night dozing in his chair. A month after admission the right pleura was tapped; in a few days the left, and so turn about. His thorax had been tapped 18 times and a total of 67 pints of serous fluid had been withdrawn. He had not been tapped since Oct. 30th. He had now no dyspnœa, slept well on either side, and could take a little exercise in the hospital garden. The sugar in the urine was never higher than 5 per cent. and it had frequently disappeared altogether. The quantity of urine had averaged about 30 ounces, so that the case was hardly one of diabetes mellitus. Dr. O'Carroll thought the best diagnosis to be mitral disease with subacute dilatation of the heart, which had been cured or relieved by rest.

Dr. JOSEPH O'CARROLL also exhibited a man, aged 50 years, who fell head downwards over a balustrade whilst drunk. In a couple of days he was able to resume his occupation as a greengrocer. Three months later he came under treatment for weakness in his legs and arms. He presented increased knee-jerks, ankle clonus, and Babinski's toe phenomena; simple anæsthesia to touch over the legs and the trunk below the level of the nipples; a soft glossy-skinned aspect of the hands, with some simple anæsthesia and a slightly marked "clawing"; he was also markedly ataxic. The symptoms suggested a transverse myelitis at or about the level of the sixth and seventh cervical roots, but there had been no interference whatsoever with the rectal or vesical functions and at no time had there been any acute paraplegic symptoms.

Dr. TRAVERS SMITH exhibited an unmarried female, aged 24 years, suffering from Friedreich's Ataxia. As far as she could trace her family she knew of no other instance of the disease. She was healthy up to the age of 14 years. She then began to suffer from "nervousness," "trembling," and "staggering," and these symptoms became worse till at the age of 22 years she became unable to walk without a person on each side to support her.

Dr. NINIAN FALKINER said that calcium chloride was of great use in many cases of gastric ulcer, particularly in the relief of pain, and described the increased excretion of calcium compounds in the urine of a person who was taking six grammes of calcium chloride daily.—Dr. WALTER SMITH said that of the total calcium ingesta about 5 or 6 per cent. was excreted by the urine, leaving the rest to other channels, principally the bowel.

BOMBAY MEDICAL AND PHYSICAL SOCIETY.

Sunstroke.—Gangrene of the Tongue.—Suprapubic Lithotomy.—Ovariotomy.

A MEETING of this society was held at the University on Nov. 30th, 1900, Lieutenant-Colonel W. K. HATCH, I.M.S., Vice-President, being in the chair.

Captain J. B. SMITH, I.M.S., described a case of Sunstroke occurring as a complication in convalescence from pneumonia. The case was reported, not from any peculiarity in the pneumonia or in the sunstroke, but because sunstroke must be a very rare complication of pneumonia. The patient was a Mussulman police-constable, aged 19 years, who was admitted to the Civil Hospital, Shikarpur, on June 17th, 1894, with lobar pneumonia of the right lower lobe. The pneumonia was not severe and was unattended with rusty sputa. On June 26th, when he had been convalescent for several days, he went out and exposed himself to the sun, going to the privy, he said. At 4 P.M. he was noticed by his comrades to be "sleeping heavily," and the hospital assistant found that he was unconscious. On Captain Smith's arrival his temperature was 108·8° F. in the armpit, his skin was dry and pungent, and his eyes were congested. There was no new development of the pneumonia, Captain Smith therefore concluded that it was heat-stroke and had him rolled up in a wet sheet, which was constantly wetted and fanned by relays of men. An ice-bag was put to his head, to the back of his neck, and a lump of ice into his rectum. The temperature soon fell to normal, but it rose again when the wet sheet was discontinued. The sheet was therefore re-applied and kept on all night and next day until consciousness returned. Consciousness returned gradually and was not fully restored until 1 P.M. on June 27th—namely, about 21 hours after his illness was noticed. His temperature was slightly raised for several days afterwards. On August 1st he was discharged without the least trace of any ill-effect.

Lieutenant-Colonel HATCH reported a case of Gangrene of the Tongue. The patient was a woman, 45 years of age, who was admitted into the Jamsetjee Jejeebhoy Hospital on Nov 12th. Three months previously a swelling appeared on the dorsum of the tongue and gradually increased in size; for the last month there had been a serous and purulent discharge. The woman was very emaciated and quite unable to walk without assistance. Her mouth was slightly open and emitted a most fœtid odour; the surface of the tongue was of a dirty-brown colour and quite soft, so that a probe could be pushed deeply into its substance without causing pain. The gangrenous portion was removed and the surface was rubbed with nitric acid freely, but the patient gradually sank.

Lieutenant-Colonel HATCH also reported an operation for Vesical Calculus. The patient, a man aged 50 years, from Sholapur, had felt symptoms for two years. The original intention was to crush the stone, but it was found impossible to introduce a lithotrite owing to extreme rigidity about the neck of the bladder. Suprapubic lithotomy was therefore performed and the bladder was sutured, a drainage-tube being passed into it by the perineum. The calculi weighed 17·5 ounces.

Captain A. HOOTON, I.M.S., reported Four Ovariotomies performed on Hindu patients in the Sassoon Hospital, Poona, from December, 1898, to March, 1900. All made good recoveries. Chloroform was the anæsthetic employed. Silk sutures and ligatures were used, as silkworm gut or sufficiently thick silver wire was not obtainable at the time. In one case a buried continuous silk suture caused suppuration with considerable burrowing of pus.—Major W. H. BURKE said that he had known buried silk to give trouble as late as a year after insertion.

HUNTERIAN SOCIETY.—An ordinary meeting of this society was held on Dec. 12th, 1900, Dr. Newton Pitt being in the chair.—Dr. Hingston Fox read a paper on Recovery from Acute Disease: Notes on Prognosis. Diseases were divided into two classes, benign and malignant, according to their natural terminations. In benign diseases recovery depended on keeping the patient alive long enough, and this in the last resort upon the power of assimilating food. Some disorders were malignant because of the bad reaction of the subject—e.g., catarrhal pneumonia in a feeble person. Others were essentially malignant, like acute generalised tuberculosis. An outline was given of cases of fatal progressive pyrexial disease of ill-defined nature in which pneumonia or neuritis or dermatitis were developed. The chief clinical features of a case of acute disorder were then reviewed in the light of prognosis. Inheritance, the common habits of a family, had its influence. The patient's history might show alcoholism or other weakening causes. Sir Andrew Clark laid down that no healthy adult under 40 years of age ought to die from acute specific disease. Stoutness was an adverse factor. So was fear, especially in heart disease, whilst hope and an easy mind were much in favour of recovery. An entirely hopeless prognosis should scarcely ever be given. Illustration was offered of the force of will-power in recovery and the value of sleep. The presence of hysteria or of catamenial disturbance in women was of favourable augury. Blood conditions received some notice, especially the lividity that heralded convulsions; also the bearing of slow and quick heart-rate. Cheyne-Stokes respiration was not necessarily a fatal sign. Appetite and digestive power were important, but patients sometimes died with a clean

tongue. Free action by the primæ viæ and by the skin and kidneys was of good import; a dry skin was evil. Old practitioners acquired an intuitive prognosis apart from reasoning; the younger men were apt to think too much of the physical signs and too little of the patient. As Dr. H. G. Sutton used to say, they must "trust the human body."—Dr. F. J. Smith congratulated Dr. Fox on his paper. He agreed with him as to the gravity of a gradually increasing pulse-rate. He believed that frequent feeding in acute disease was bad and that prognosis was favourable when the patient desired food and had a clean tongue.—Dr. Fortescue Fox referred to cases of obscure pyrexial attacks to elderly people ending fatally. He agreed that the value of feeding acute cases according to the desires of the patient was often great.—Mr. Hope Grant said that there were cases in which the tongue could not become furred because of the absence of filiform papillæ.—Dr. Milligan referred to a child who suffered from chronic hyperpyrexia after an acute catarrhal pneumonia which lasted four weeks. The child eventually got quite well.—Dr. Newton Pitt pointed out that the appearance of a child was a very valuable item in prognosis and that the value of the pulse-rate varied with sex and age.—Dr. Fox replied.

BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.—The annual general meeting of this society was held at the rooms of the Medical Society, 11, Chandos-street, W., on Jan. 11th.—Mr. Lennox Browne and Dr. Kelson showed cases of Exostosis of the External Meatus; Dr. Abercrombie showed a case of Hyperostosis; and the President showed a case of Exostosis of the Tympanic Cavity.—In the discussion which followed operation was deprecated unless the growth were such as to lead to the accumulation of cerumen, &c., incapable of removal.—Dr. Banks, Dr. Dundas Grant, Dr. P. Jakins, Dr. Vinrace, Dr. Scatliffe, and Dr. V. H. W. Wingrave spoke.—Dr. Wingrave and Dr. F. J. Tresilian showed cases of Facial Palsy due to Middle-ear Disease.—Dr. Culver James showed a case of Middle-ear Disease with Complications.—The President showed a case of Epithelioma of the Maxillary Antrum and Excision of the Upper Jaw. Both specimen and patient were shown. The growth had been completely removed. There was no difficulty in swallowing and no sign of recurrence.—Dr. Banks, Dr. Wingrave, and Dr. Grant discussed the case.—Dr. Grant showed a case of Cyst of the Epiglottis.—Dr. Banks, Dr. Kelson, and the President related similar cases and discussed the treatment.—Mr. W. J. C. Nourse showed a case of Tertiary Syphilis with a Sequestrum in the Naso-pharynx.—Dr. Grant and the President discussed the case.—The President showed a case of Aphonia in a soldier, aged 23 years. The patient, who was in South Africa, took part in a long march, was said to have become unconscious and to have remained so for three days, and had been completely aphonic now for some months.—Dr. Tresilian showed a case of Osteo-sarcoma of the Maxillary Antrum.—The postponed discussion on Dr. Lennox Browne's cases of Epilepsy in relation to Adenoid Growths followed.—The President, Dr. Grant, and Dr. Banks related cases in which improvement had taken place after the removal of adenoids.

CARDIFF MEDICAL SOCIETY.—The ordinary monthly meeting of this society was held at the society's rooms on Jan 11th, Dr. R. Prichard being in the chair.—Dr. Barnardo showed a case of Polypoid Disease of the Right Antrum of Highmore. The patient was a woman, aged 35 years, who had suffered from dry throat and periodical headaches, and pus was seen to be running down the posterior nares. Since the operation of draining the antrum through the canine fossa and nose the symptoms had been much alleviated, but the shadow test showed continued opacity of the antrum.—Dr. Prichard, Mr. J. J. E. Biggs, and Mr. Lynn Thomas commented upon the case and Dr. Barnardo replied.—Dr. Owen Rhys showed (for Dr. C. T. Vachell) an advanced case of Pseudo-hypertrophic Muscular Paralysis in a boy, aged 12 years.—Mr. William Sheen read a paper on the Immediate Investigation and Treatment of Bullet- and Shell-Wounds. The paper was based on six months' experience as surgeon to the Yeomanry Field Hospital. A description of the Mauser wound immediately after infliction was given and the points to be investigated were indicated. The various types of shell-wound were described; and finally the results of certain rarer forms of injuries, such as those caused by expanding bullets and exploding cartridges, were detailed.—A discussion followed in which Mr. Lynn Thomas and Dr. Rhys Griffiths took part, and Mr. Sheen replied.—The President proposed and Dr. D. R. Paterson seconded the following motion:—

That this society congratulates its honorary secretaries, Mr. Lynn Thomas and Mr. William Sheen, on the eminent services they have rendered to their country during the war and rejoices at their safe return home.

The resolution was carried unanimously and the secretaries suitably replied.

LIVERPOOL MEDICAL INSTITUTION.—At the annual meeting of this institution, held on Jan. 10th, the following list of office-bearers and members of council was adopted:—President: Mr. Edgar A. Browne. Vice-Presidents: Dr. T. R. Bradshaw, Mr. W. Thelwall Thomas, Dr. Edward Adam, and Dr. J. M. Hunt. Honorary treasurer: Mr. Henry Briggs. Honorary general secretary: Dr. J. R. Logan. Honorary secretary to ordinary meetings: Dr. John E. Gemmell. Honorary librarian: Dr. H. Leslie Roberts. Council: Dr. James Armstrong, Dr. W. Macfie Campbell, Mr. W. T. Clegg, Dr. J. C. M. Given, Dr. A. M. Paterson, Mr. Andrew Stewart, Dr. James Barr, Dr. R. J. M. Buchanan, Dr. A. Craigmile, Dr. William Macvie, Mr. Edward Nicholson, and Dr. J. Lloyd Roberts. Pathological and Microscopical Committee: Dr. J. H. Abram, Dr. F. H. Barendt, Dr. Rubert Boyce, Mr. R. A. Bickersteth, Dr. R. J. M. Buchanan, Dr. A. W. Campbell, Dr. C. Macalister, Mr. G. P. Newbolt, Dr. C. S. Sherrington, and Dr. W. B. Warrington. Journal Committee: Dr. F. H. Barendt, Mr. F. C. Larkin, Mr. G. P. Newbolt, Dr. A. M. Paterson, Dr. W. Permewan, Mr. W. Thelwall Thomas, Dr. Arthur Wallace, and the honorary secretaries to the ordinary meetings and pathological section.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.—A meeting of this society was held on Jan. 14th, Dr. Alexander Robertson, in the absence of the President, being in the chair.—Dr. Alexander Napier showed (1) three patients, a sister and two brothers, the subjects of Hypertrophic Cirrhosis of the Liver accompanied by splenic enlargement; and (2) a girl, aged six years, who had recovered from Jacksonian Epilepsy under the use of iodide of potassium.—Dr. Finlayson gave a bibliographical demonstration on Physiognomy with special reference to the physiognomy of disease.—Dr. A. Ernest Maylard showed (1) a specimen of Prolapse of the Rectum removed from a woman, aged 54 years, by the method of Mickulicz; and (2) a portion of Jejunum resected from a man, aged 25 years, who had been crushed between two lorries. The bowel was the seat of a circular rupture and the patient had succumbed to peritonitis which had commenced prior to operation.—Dr. E. Arthur Gibson showed (1) Interstitial and (2) Subcutaneous Myomata of the Uterus removed by hysterectomy.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.—The fourth meeting of the session of this society was held in the Medical Library of University College on Jan. 9th, Dr. D. S. Davies being in the chair.—Dr. Patrick Manson, C.M.G., F.R.S., gave a most interesting demonstration of the Life-history of the Malaria Parasite and illustrated it by numerous microscopic preparations, lantern slides, diagrams, and blackboard drawings.—Upwards of 120 members and visitors were present.—At the close of the meeting a hearty vote of thanks to Dr. Manson was carried with applause.

THE LATE MR. A. W. SHEPERD.—Mr. Albert Wilberforce Sheperd died at his residence, Cowbridge, Glamorganshire, on Jan. 4th, after a short illness. The deceased received his medical education at the Carmichael College, Dublin, and took the qualifications of L.R.C.P., L.R.C.S., and L.M. Irel., in 1883. After holding a resident appointment at the City of Dublin Hospital, he was appointed district medical officer at Moriani, Assam, India. On his return to England about 10 years ago he practised at Cowbridge, where he was medical officer of health of the Cowbridge Urban District. The deceased took a great interest in the volunteer movement and was surgeon-captain to the 2nd Volunteer Battalion of the Royal Welsh Regiment. Mr. Sheperd was highly esteemed and very popular in Cowbridge, and much sympathy is felt there for his widow and two young children.

Reviews and Notices of Books.

La Vie de Pasteur. RENÉ VALLERY-RADOT. Paris: Libraire Hachette et Cie. 1900. Pp. 692.

"L'ŒUVRE de Pasteur est admirable, elle montre son génie, mais il faut avoir vécu dans son intimité pour connaître toute la bonté de son cœur." These words were written by Dr. Roux, Pasteur's colleague and friend. They are quoted on the title-page of "La Vie de Pasteur" and give very suggestively an idea of the spirit in which the book has been written by M. René Vallery-Radot, the son-in-law of the subject of the biography.

The first impression received on reading the book is a hope that it will soon be translated into English so that it may be more readily accessible to the English people, but on reflection it becomes evident that a good translation would be almost impossible. A mere transliteration, a turning of French words into English equivalents more or less exact, would give no just idea of the work and might easily prove absurd; it would necessarily destroy much of the charm of the book, which consists largely in the brief and touching sketches it contains of the domestic life of Pasteur and of his most intimate personal friends. Here and there glimpses are given of that happy and united family life which is probably not uncommon amongst French people, but the details of which are so carefully guarded that they are rarely seen by foreigners, and very rarely by Englishmen, who, proud of "home," often profess to pity a people who have no such word and do not appreciate the significance of the association which a Frenchman has with "famille." The associations of family ran like a golden thread all through the life of Pasteur. One other thing also greatly affected him, as it did all his thoughtful fellow countrymen—the great national catastrophe of 1870. The pitiable condition of France under the foreign invader made the iron to enter into his soul. He became for a time unable to continue his scientific researches and cast about for a solution to the problem as to why France had not found in her hour of need men fit to cope with her difficulties. In the pamphlet which he wrote on this question he ascribed the lack of really great men to the neglect that the country had shown to those who devoted themselves to scientific work. At the end of the eighteenth century, he argued, the country in her time of stress had been saved by her men of science. They had taught how the saltpetre necessary for the manufacture of gunpowder could be obtained by methods hitherto unknown, and by what new processes cannon could be quickly manufactured and how offensive arms could be rapidly provided. Napoleon himself felt the power and the use of applied science and after the battle of Waterloo proposed to go to America to devote himself to such work. Napoleon III., on the contrary, had neglected science, and on one occasion Pasteur wrote with extreme warmth on the action of the Government in this respect, a point to which reference will be made later. The strong impression produced on Pasteur by the disaster of 1870 was shown by the way in which he returned to the University of Bonn a degree which had been conferred on him. It was shown by the fact that towards the end of his life he declined to entertain the idea of receiving a German Order. It was shown by the depth of his gratitude and the greatness of his surprise at the reception which he met with in England as the foremost representative of France at the International Medical Congress of 1881, when at the opening meeting held in St. James's Hall he was greeted with the warmest enthusiasm. On this visit he met the German Crown Prince, and he appreciated the graceful tact of Sir James Paget in not asking him to be presented to the prince, and also the way in which that noble-minded gentleman introduced himself to Pasteur and addressed to him the few words of friendliness and peace which he recorded in a home letter written at the time and which he ever afterwards remembered. Patriotism and family affection were amongst the strongest characteristics of Pasteur, and these qualities may possibly be ascribed in part to heredity.

Jean-Joseph Pasteur, the father of the subject of this biography, was a man of strong character. Born in 1792, he became a conscript in 1811, and fought in Spain during the two following years; he returned to France in 1814, and in that year the regiment in which he served (3rd Infantry) distinguished itself at Bar-sur-Aube and Pasteur became a sergeant-major and received the Cross of the Legion of Honour. After the abdication of the Emperor in 1814 he obtained his discharge from the service and returned to Salines, where the Royalist mayor ordered the "Brigands of the Loire"—as he called the soldiers of the Empire—to give up their swords. Pasteur obeyed, but when he found his sword in the possession of a policeman he wrested it from him. Some trouble followed, but the commander of the Austrian forces, which still held the town, sympathised with Pasteur, who was not afterwards interfered with. An "old soldier" although but 25 years of age he settled down to the business of a tanner, and across the stream—miscalled la Furieuse—he soon found his fate in the form of a young gardener who worked there from early dawn. It was Jeanne Etienne Roqui. She came of a family well known in the town and could trace her descent from a vine-grower who lived in the middle of the sixteenth century. The members of her family had the reputation of being so much attached to one another that "to love like the Roqui" had become proverbial. These young people were married in 1815 and in 1822 a son, Louis Pasteur, was born. He received the early part of his education at Arbois. The Pasteur family had amongst their acquaintances several men of some culture who took an interest in the young student. Amongst these was Dumont, a retired army surgeon, on whose advice young Pasteur was sent to Paris to continue his studies. He was then only 16 years of age and the great city terrified him. He became so homesick that his father brought him back for a time; he afterwards went to Besançon, where he took the degree of *bachelier ès lettres* in the year 1840. At the examination he did not greatly distinguish himself; he pleased the examiners in Latin, in Greek, and in rhetoric, but did only moderately well in history and geography. After leaving Besançon he went to Dijon, and in the examination for *baccalauréat* in sciences and mathematics he came out fourteenth in the list of 22 candidates. He was "weak" in chemistry. In 1842 Pasteur returned to Paris, where he attended lectures at the Lycée Saint-Louis and those of Dumas, the chemist, at the Sorbonne. He worked very hard, suffered from headache, and lived with great frugality. His father gave him some very good advice, counselling him to dine well at least twice a week with his great friend Chappuis and adding that he had bottled some 1834 wine which should be kept for their return. There was, he said, more spirit in that wine than in all the books of philosophy which had ever been written, but he cautiously added that it would not help to solve mathematical formulæ.

The companionship of Chappuis was a great help to Pasteur. Left to himself he devoted all his time to study and was constantly in the library. With his friend he discussed during their walks those problems which interested him, and his ideas became clear when he examined them from different points of view. The first great problem which he wished to solve had reference to a mystery about tartaric acid and its conduct with polarised light, and from this inquiry he hoped to be enabled to get a general insight into the relation between crystalline form and the polarisation of light. It was a great work and the results which he

obtained startled Biot, the great chemist, who immediately saw the possibilities of scientific advance which Pasteur's discovery had made possible. For 30 years Biot had worked at the subject, and now at the age of 74 he found that this student of 25 had made a discovery which would revolutionise chemistry. Although incredulous at first, Biot repeated Pasteur's experiments, proved their results, and recognised their importance. He welcomed the discovery with a large-hearted sympathy and ever after he was Pasteur's most devoted friend.

In 1849 the professorship of chemistry at Strasburg was offered to Pasteur. He accepted the appointment but felt lonely. He immediately fell in love with a daughter of M. Laurent, the principal of the University, and proposed for her hand a fortnight after he first saw her. They were soon married. Fortunately his wife was willing that his work should continue to occupy most of his time and of his energy.

The family party at Strasburg was, unluckily, soon broken up. In the year 1850 the clerical party became for a time dominant in France and Romieu was appointed to visit the universities. M. Laurent fell under his dipleasure and was removed. Pasteur remained. In 1852 he undertook quite a romantic quest in search of crude specimens of tartaric acid. Never, as a contemporary writer said, was treasure, never was beauty more ardently sought. The conditions under which racemic acid had been produced were not understood and Pasteur journeyed to Leipsic, Freiburg, Vienna, and Prague to procure specimens which had been obtained under different conditions. His letters to his wife contained accounts of his journey and ultimately he was able to send a telegram to Biot to say that he had converted tartaric acid into racemic acid So at length Pasteur established the existence of the four tartaric acids: (1) which turned the plane of polarised light to the right; (2) which turned the plane of polarised light to the left; (3) the combination of the two (or racemic acid); and (4) which was inactive to light. This was a great discovery and one not obtained by accident but as the result of carefully devised experiment. In recognition of these researches Pasteur received the Ribband of the Legion of Honour. In the autumn of 1857 he was made professor of the newly-established Faculty of Sciences at Lille. This appointment marked a distinct epoch in the scientific life of Pasteur. Until then all his researches had been suggested by his own brain, the problems were those set to him by himself. From this time the problems were thrust upon him. The great town of Lille was a manufacturing centre and the production of alcohol from the fermentation of beetroot was an important industry of the place. Some of the manufacturers had been much troubled with a difficulty in the process of their operations and they were quite unable to account for it. One of them sought the advice of Pasteur, and thus he began the study of fermentation. The *savants* had hitherto considered fermentation to be a strange and obscure process. The theories of Berzelius and of Liebig were generally accepted. But they explained nothing. Fermentation was supposed by one of these philosophers to be due to the action of contact, "catalytic influence"; according to the other it was due to the presence of a "ferment," a readily decomposable organic substance. So the theories may be briefly put. Pasteur showed that the formation of alcohol from sugar was due to the vital action of living organisms, that the changes were produced by organised cells.

From 1860 to 1864 Pasteur was engaged chiefly in investigating the question of spontaneous generation, but he spent some time also in studying the diseases of wines. Biot and Dumas both thought that the inquiry as to the possibility of spontaneous generation was a barren subject—an insoluble problem and therefore not one on which time should be spent. But the question was one which it was impossible for Pasteur to neglect. The problem, he thought, must be settled. It stayed the progress of science. The *savants* were lost in a valley. Biot said there was no way out. Pasteur found it necessary to try to find one. And Pouchet of Rouen had claimed that he had proved the occurrence of spontaneous generation. This was too much for Pasteur. He began a new study—that of the microscopic organisms of the air. It was a long business and took him far afield, for he investigated the mountain air of Chamounix. It was a fierce fight between the *savants*. It is needless to go over the battle ground.

In 1864 the Mayor of Arbois asked Pasteur to investigate the cause of the trouble which the vine-growers had experienced in keeping their wines. Facilities for the investigation were offered, but Pasteur declined to accept the generosity of the town and made his own arrangements for the research. The trouble was a very real one and had far-reaching results, for the English market was becoming closed to wines which were liable to ready decomposition. Pasteur came to the conclusion that the wines were spoiled by a secondary fermentation and that this source of danger could be eliminated by raising the wine for a short time to a suitable temperature.

The next great undertaking of Pasteur was an investigation of the disease of silkworms which threatened entirely to ruin the silk industry and had already caused a loss of something like £4,000,000. Pasteur felt great diffidence in undertaking the task which was assigned to him. He had never touched a silkworm and knew nothing about their culture. The literature of the subject he found of little use to him, and on going to Alais to study the disease on the spot he found, as might be expected, that it was difficult to find any definite fact in the deluge of words which was poured into his ears. But all sorts of remedies were recommended and the word "miasm" was much to the fore. Pasteur studied the silkworms microscopically and obtained some healthy eggs from Japan that he might compare healthy worms with those which suffered from the disease. His work for a time was interrupted by the death of his father, but he soon returned to continue his investigation; and he was able to show that the disease was the result of a microscopic organism and also that eggs derived from a healthy source produced worms free from the disease.

Pasteur's next work was literary. He edited Lavoisier's works at the urgent request of Dumas. The book was much praised by Sainte-Beuve. Soon after this Pasteur spent a few days at Compiègne at the command of Napoleon III whose guest he became. This visit must have been one of great interest both to the host and to Pasteur. To Pasteur the sight of an Imperial hunt must have been quite a new sensation. But he was not satisfied to do without work. The Imperial cellar contained a few—very few—bottles of wine which had "gone wrong" and he was pleased at the opportunity afforded him of finding out how this had come about. The Empress was also greatly interested in the objects seen under the microscope and a drawing-room lecture was given at her five o'clock tea. It was a matter of wonder both to Napoleon and to the Empress that Pasteur had made no attempt to obtain a "legitimate profit" from the commercial application of his labours, but he told them that in France the *savants* did not think it seemly to act in such a way. But the researches of Pasteur in regard to the disease of silkworms is said to have been the means of saving to France an amount of money equal to that which was paid to Germany as part of the price of peace.

Pasteur was a man possessing the strongest human sympathy and the greatest kindness of heart. A remarkable instance of the display of these qualities was shown by the action he took when he heard that his old friend Claude Bernard had retired into the country overwhelmed with dyspepsia and suffering from great mental depression.

Pasteur, hoping to be able to raise his spirits, devoted himself to a renewed study of his works and wrote an article for the *Moniteur Universelle* ("Claude Bernard: Idée de l'importance de ses travaux, de son enseignement et de sa méthode"). The article had the happiest effect, Bernard's condition immediately improved; he was filled with gratitude and was soon well enough to return to his work.

At the Great Exhibition at Paris in 1867 the grand prix was awarded to Pasteur and to 62 others; the prize-giving ceremony was one of the most imposing scenes amongst those of the Second Empire. Gérôme, Meissonier, and Ferdinand de Lesseps were present and received due honour. Art and industrial progress received greater acclamation than that accorded to science. At this period the laboratories were ill-placed and unsuitable for their purpose. Situated in cellars, they were not unfitly described as the "tombs of the *savants*." Pasteur, moved by these facts, addressed a note to the Emperor pointing out the industrial value of the investigations which he himself had carried out and showing what a vast and fertile field for further research had been discovered by his researches. A full investigation of the phenomena of putrefaction and for the study of infectious diseases necessitated spacious and isolated laboratories. The pathology of gangrene and experiments in inoculation could only be studied in specially constructed places. The transport of butcher's meat had a distinctly commercial aspect. In Europe it was sold at an exorbitant price, in Buenos Ayres it was only too plentiful. It was a point worthy of experiment to see whether it was possible to invent some method for its transport. Pasteur was led to hope that laboratories would be built by the Government, but he was disappointed. Whereupon he wrote a very strong article. The article was naturally refused by the official *Moniteur*, but it appeared first in the *Revue des cours scientifiques* and afterwards in the form of a pamphlet. It had an immediate effect and the Emperor took up the question warmly. The following year Pasteur had a severe illness which was diagnosed as cerebral hæmorrhage. He was then only 46 years of age, but for a time it appeared as if his work were over, and he grieved that there was so much left for him to do. The general impression evidently was that the new laboratory, which was then in the course of construction, would not be wanted, and Pasteur, on asking his wife how the building was getting on, was grieved to hear that the work had been suspended. When the Emperor was told of this he ordered that the work should be continued at once. Later, when Pasteur was recovering from his illness, Napoleon III. placed at his disposal the Villa Vicentina, a house near Trieste which had once belonged to Elisa, sister of Napoleon I., by whom it had been left to her daughter, Princess Baccischi, from whom the Prince Imperial inherited it. At the Villa Vicentina Pasteur superintended the culture of silkworms, which had failed miserably before his advent. Just before the fall of the Empire Napoleon had placed him in the list of new senators, but the decree was never issued.

Of the effect of the war on Pasteur mention has already been made. The unnecessary injury done by the Germans to the Sèvres porcelain factory and the destruction of the manuscripts there amongst other things violently affected him. His search for his son, who was serving in Bourbaki's army, was a romance, but it is not possible to tell the story here.

The fact that Pasteur after his attack of cerebral hæmorrhage was able to do excellent work is very remarkable. Much of the work of his later years was that which attracted most the attention of foreigners. After the war he was engaged for a time in the investigation of the manufacture of beer, which had not up to that time been a favourite beverage with his countrymen. At a later period he was elected to the Académie de Médecine. Physicians and surgeons alike had learned much from his researches. Lister founded on them a new system of dressing wounds which in a few years revolutionised surgery, was the means of saving thousands of lives, and for the first time made it reasonable to undertake operations which had previously been carried out only by the most "enterprising" surgeons to the great risk of the lives of their patients. Both Lister and Tyndall gladly acclaimed the greatness of the results of the teaching of Pasteur. Some of the French physicians, it is true, rather disliked Pasteur's intrusion into their domain, but his teaching has survived any prejudice which it may have excited.

In the year 1880 Pasteur began a series of experiments in regard to chicken cholera and to the attenuation of its virus, and at a later date he undertook those investigations concerning hydrophobia which perhaps of all his work caused the greatest immediate popular sensation. The details of this work and of the origin and work of the Pasteur Institute are so familiar that it is not necessary to do more than mention them.

Pasteur continued to work till November, 1894, when the symptoms of his mortal illness manifested themselves, but he lived until the following September, when he breathed his last surrounded by his family and by his friends.

It is not possible to give in a review any adequate idea of the interest of M. René Vallery-Radot's book. The subject of the biography was one of the greatest men of the century in which he lived, and the book has been written from ample material and with loving care. It is well worthy of careful study. To the casual reader and for purposes of reference a good index would have been a great boon. A complete bibliography of the published works of Pasteur should also have been added to the book. These omissions it is to be hoped will be made good in future editions of the work.

Somnambulismus und Spiritismus. (*Somnambulism and Spiritualism.*) By L. LOEWENFELD. Wiesbaden: J. F. Bergmann. 1900. Super royal 8vo, pp. 57. With two illustrations.

THIS little book is the first of a series of pamphlets edited by Dr. Loewenfeld of Munich and Dr. Kurella of Breslau which is addressed to "the educated of all classes" and in which questions relating to the borderland between the spiritual and material existences are to be discussed. While there is a certain fascination about most borderlands, the one with which the volume before us is concerned is particularly interesting because it is here that the lands which science has already explored march with a region which has only recently begun to be investigated. We refer to the somnambulistic state, a term which in the somewhat wide sense in which the author uses it includes the hypnotic condition and certain phases of hysteria. Dr. Loewenfeld does not define somnambulism, but we gather that he regards it as a condition in which the area of mental activity is narrowed in some directions but extended in others—that is to say, a condition in which some of the senses are asleep while others are in a state of hyperæsthesia. Consciousness, apparently, may be partially or wholly in abeyance. Though the author believes that the most familiar form of somnambulism—ordinary sleep-walking—indicates a morbid state of the nervous system, he does not think it is to be regarded as an early symptom of hysteria. He demolishes the popular belief in the miraculous powers exhibited in that condition and concludes from his own observations that the sleep-walker does nothing in sleep which he could not do awake were his faculties concentrated to the same degree on the work in hand.

Of the hysterical variety Dr. Loewenfeld has little to say. It is responsible, he believes, for some of the cases of

so-called dual existence of which Azam's case of Felida X. is one of the most remarkable.

The author's principal contention is that in hypnotic somnambulism is to be found an explanation of most of the manifestations of spiritualism. To the abnormally sensitive ear of the hypnotised subject, for example, sounds are audible which cannot be detected by the bystander, such as the "involuntary whispering" by which thoughts are "read"; his brain is sensible to impressions (as in telepathy) to which it is impervious in his waking moments. In short, while we do not know all the channels by which these impressions are conveyed nor the means by which they are produced Dr. Loewenfeld feels justified in attributing to the abnormal acuteness of the somnambulist's senses much that the spiritualist ascribes to supernatural agencies. Table-turning and rappings he lightly dismisses as hocus-pocus; the phenomena which he discusses seriously are telepathy, clairvoyance, the power of seeing through opaque substances, that of talking in a language unknown to the speaker, and the transposition of senses. He does not think that the last two have been proved to have occurred; and with regard to the third, he would also declare himself an unbeliever were it not for one or two of Richet's experiments, the results of which were so striking that he is compelled to admit that they could not be due to chance. As to telepathy and clairvoyance, he unwillingly admits their existence, holding that while most so-called examples are due to deception or coincidence, there are some which cannot be thus accounted for—which are, indeed, in the present state of our knowledge inexplicable. We cannot quite understand the evident reluctance with which the author makes these admissions. It seems to arise from a fear that they may be regarded in some sort as a concession to his spiritualistic opponents against whom this work is chiefly directed. The value of the book is considerably impaired by this unscientific attitude which allows him to be more alive to the weak points in the spiritualistic arguments than to those of his own theory. These fears are quite superfluous, for while waiting for a rational explanation we are not compelled, even provisionally, to accept the one which the spiritualist proposes. The book is a very interesting introduction to an important subject.

Mosquitos and Malaria: A Summary of Knowledge on the Subject Up-to-Date; with an Account of the Natural History of Some Mosquitos. By CUTHBERT CHRISTY, M.B., C.M. Edin., Special Medical Officer on Plague Duty for the Indian Government; late Senior Medical Officer, West African Frontier Force, Nigeria. With five full-page Plates. London: Sampson Low, Marston and Company, Limited. Bombay: The *Times of India* Press. 1900. Demy 8vo, pp. xii–80. Price 6*s.* net.

THE researches of Grassi, an Italian naturalist, and the experiments of Bignami, subsequently to the publication of Ross's papers showing that special mosquitoes were needed as the hosts of the malarial parasites, succeeded in affording positive evidence of the inoculation of malaria by mosquito bites, and this result was confirmed by the experiments of Bastianelli, Grassi, and others. The Royal Society has also issued a series of reports into the origin and character of malaria, embodying information gained on both coasts of Africa—West and East—which are of considerable scientific and practical value.

The subject of the connexion between the prevalence of mosquitoes and the prevalence of malaria which is dealt with in this volume has been so frequently referred to and discussed in the pages of THE LANCET and elsewhere that we may fairly assume our readers to be acquainted with the general results, at any rate, of the numerous investigations which have been taking place. These researches make up one of the most interesting and important chapters in the history of modern scientific medicine. Nor is their interest circumscribed within the limits of medical science only, for the subject also offers an interesting field of study to the naturalist and the microscopist, and, in its practical bearings in connexion with public health, it more especially concerns the statesmen and population of the British empire. Notwithstanding that malarious diseases are so prevalent in India and in some of our possessions abroad, it is the Italian school of medicine which laboured longest and most persistently in the study of malaria—indeed, in this respect it has long held a foremost position. Since Laveran's discovery of the malarial parasite in 1880 the subject has been pursued on all sides with keen interest. This took a fresh start at the time that Major Ronald Ross, I.M.S., by a series of skilful and carefully conducted observations gave precision to the mosquito-malarial theory of causation, which had been previously and provisionally elaborated in 1893 by King in America. Since that time, as our readers are aware, there has been a rapid and progressive advance in our knowledge.

The introductory chapter on the Malarial Parasite and that on Ross's discoveries in 1897–98, followed by an account of Dr. C. W. Daniels's investigations in Calcutta in 1899 and of the work of the Italians are very clearly and succinctly written. At the stage at which Dr. Daniels undertook his inquiries and wrote his report, he was able to say that Ross's discoveries had put observers on the high road to proving that the mosquito conveyed malarial fever from man to man, although they did not prove that it was the only way in which the fever could be carried. Since Daniels wrote his report, however, much has happened. Dr. Christy deals very clearly and well with the natural history of mosquitoes in general and with all that is known about our particular enemy—the genus anopheles. Beyond the recognised four stages of development—viz., that of the egg, the larva stage, the pupa or nympha stage (all of which are passed in water) and the fourth or adult winged stage, there is much that still remains to be known about the natural history of mosquitoes. It is a more intimate knowledge of the life-history of the mosquito, and especially of the anopheles, in all the four stages that is required, and the author calls the attention of observers to some of the main points needing further elucidation. The chief aim which Dr. Christy had in view in publishing his little work was, he states, to stimulate the interest and to enlist the energies of naturalists, medical men, and others throughout the world. At pages 39 and 40 he gives a very useful table of comparison between the culex and anopheles. In the succeeding chapters he treats of the methods of destruction of mosquitoes and the etiology of malaria and its prophylaxis. The series of plates with their accompanying brief explanatory notes are excellent.

The object of the present work, its author tells us, is to supply, in the form of a small cheap handbook, a concise and convenient summary of our knowledge—the literature of which would, if it were all collected together, make up a little library in itself. The author has performed his task excellently well and if his volume does not include everything known and published up to the present moment, that is simply attributable, as we have said, to the rapid progress which is being made.

Gynæcological Operations, Exclusive of those Interfering with the Peritoneal Cavity. By SKENE KEITH, M.B., F.R.C.S. Edin. Illustrated with 44 figures. Edinburgh and London: Young J. Pentland. 1900. 8vo. Pp. 118.

THIS little book is intended as a companion to the author's "Text-book of Abdominal Surgery." It contains a good and concise description of the essential details of the gynæcological operations usually performed through the vagina. Mr. Skene Keith enters a protest against the excessive preparatory measures which at the present time are considered essential by many operators even before the most

trivial operations. No doubt in the private practice of surgeons many of the elaborate precautions usually taken may be neglected, but in hospital practice, where the operator is dependent to some extent upon others, it is essential that the minutest details should be observed, so that carelessness in slight matters may not lead to carelessness in great matters. It is, moreover, only by the jealous care that a modern surgeon takes over his antiseptic or aseptic precautions, as the case may be, that he is able to inculcate these important principles upon his students and so to endow them with the most important attribute of a good surgeon, "the antiseptic or aseptic conscience." The descriptions of the various operations abound in practical details, and are in many instances more clearly and graphically described than in most text-books. The author prefers a Sims's speculum and Sims's position, a fact that must be borne in mind by those who are more accustomed to the dorsal position, in reading the account of the operations.

The practice of drawing down the uterus to the vulva is condemned, but we must confess that although we are in the habit of drawing down the uterus in the majority of cases when operating upon it through the vagina we have yet to meet with the rise of temperature and evidence of pelvic inflammation which the author says are often the result of this manœuvre. It seems to us more likely that such unfavourable results are due to the operation performed rather than the method. Mr. Keith fails to note the greatest danger—viz., the possibility of rupturing a pyosalpinx or a small ovarian cyst if the uterus be drawn down without a careful preliminary bimanual examination in all cases. We are glad to see that the old-fashioned method of plugging the vagina with a kite tail is rightly condemned. The practice of plugging the interior of the uterus after the operation of curettage appears to be an unnecessary complication in an ordinary case, while the application of pressure forceps to the pedicle of a fibroid polypus is a superfluous precaution in our experience. We see no reason why a large Bartholin's cyst should not be cleanly dissected out as well as a small one, and what we have seen of the method recommended by the author—viz., incision of the cyst and the use of scissors—in the hands of other surgeons would not lead us to adopt the plan. Although we cannot quite agree with all the author says, yet the book is well worth reading by those interested in gynæcological surgery, and will prove of much assistance to the inexperienced in such operations.

The Great Famine and its Causes. By VAUGHAN NASH. With Eight Photographs by the Author, and a Map of India showing the famine area. London, New York and Bombay: Longmans, Green, and Co. 1900. Pp. 262. Price 6*s*.

THIS volume consists of the series of letters which originally appeared in the *Manchester Guardian* during the 11 weeks which Mr. Vaughan Nash spent in India. He must have occupied himself with untiring energy to have travelled and witnessed all that he did in that distressed country, and to have gleaned and compiled all the information which he has managed to set forth in this volume. The letters describe with a good deal of graphic force the scenes which the author witnessed as the panorama of suffering unfolded itself, together with the impressions to which they gave rise. Their perusal is necessarily a sad and painful experience. The history of India of recent years has been a terrible record—one of plague, pestilence, and famine. The native population is enormous and for the most part sunk in poverty at the best of times, and more largely dependent even than the population of other countries upon the regularity and normality of its meteorology—i.e., upon the recurrence of its seasons in due course—for its food-supplies. When, as occasionally happened in the history of the late famine, the ravages of cholera are superadded to those of famine, and starving crowds of enfeebled people have had to leave relief works and camps and seek safety in flight for fear of being stricken with a more rapid and dire disaster than that of famine, it is not easy to conjure up a more terrible picture. The author has a good deal to say about such subjects as Indian organisation, how India is fed, famine preventive measures, debt and expropriation, and the land revenue system, some of which matter is interesting. But these are affairs of State policy and government about which our readers must consult the book for themselves, for they do not readily lend themselves to any brief analysis, nor do they fall within the purview of the medical critic. But we may remark that the views of anyone founded upon a brief residence in India with a relatively cursory experience and necessarily inadequate consideration of such big subjects are mainly intended for the information and enlightenment of readers in this country. Whether they happen to be right or wrong they are not likely to carry any great weight with the Indian Government and its officials.

Consumption: its Nature and Treatment. By WILLIAM H. SPENCER, M.A., M.D. Cantab., M.R.C.P. Lond. London: Henry J. Glaisher. 1900. Pp. 83. Price 1*s*. 6*d*.

DR. SPENCER'S temperate views on the nature of consumption are explained in this little brochure. He lays it down that the bacillus plays only a secondary part in the determination of the disease. The depraved tissue habits which provide the suitable conditions for its growth operate in the same direction as the agent which finally compasses the ruin. The only certain method of destroying the bacillus within the body is to deny it the conditions which are essential to its development. And it is with the various methods of withholding these conditions that the author chiefly concerns himself in these pages. In addition to ordinary hygienic measures, curative and prophylactic, Dr. Spencer has great faith in the efficacy of the so-called antiseptic inhalations, not for the purpose of directly destroying the bacillus, but of indirectly effecting this object by rendering the animal matter on which it thrives an unsuitable nutritive medium. The reader is not, however, supplied with the details of treatment.

LIBRARY TABLE.

Messieurs Vigot Frères of Paris send us a little book by M. de Frumerie, entitled *La Pratique du Massage*. It is a collection of clinical lectures on instruction in massage given to the classes of hospital attendants, both male and female, of the Paris hospitals during 1899–1900. The book is an octavo volume of 146 pages, contains 31 figures and diagrams, and costs two francs. Commencing with a short historical synopsis of the art of massage the author passes on to give a description of the different manipulations, and continues by giving an account of the physiology of the muscles and a description of massage of the different parts of the body. There is also a chapter on massage of recent fractures. Of course no one can learn massage purely from a book, but M. de Frumerie's instructions will prove of value to anybody who is desirous of learning something about massage before he enters on his practical class.

From Messieurs G. Carré and C. Naud of Paris we have received a book by M. H. Triboulet, physician to the hospitals, and M. F. Mathieu, physician to the Bureaux de Bienfaisance. The title of the book is *L'Alcool et L'Alcoolisme*, in one volume, square octavo, with 254 pages, and the price is 5 francs. The preface states that the book does not pretend to be more than a compendium for the use of those who know of facts connected with the alcohol question. Certain phases of the question have been more dwelt upon than

others, such as the manufacture of alcoholic drinks in their relation to drunkenness, the toxicology of alcohol, and the general physiology of the matter. The mental pathology of alcoholic poisoning is not dealt with. The first chapter gives an account of the word "alcohol" both in its restricted meaning as implying ethylic alcohol and in its wider chemical meaning of a series of alcohols. Then follows an account of the various alcoholic drinks such as beers, wines, ardent spirits, liqueurs, and *apéritifs*, including absinthe. Chapters on the toxicology and physiological effects of fermented drinks follow and then the authors pass to consider the pathology of alcoholic intoxication. This chapter concludes with a section on treatment, both therapeutic and moral. Statistics of the consumption of alcohol in different states are next given, and the book concludes with a succinct account of the various prophylactic measures for combating alcohol in different countries and a scheme of prophylaxis drawn up by the authors. For a book of no great size this little work contains a vast amount of information upon a subject which is possibly of more vital importance to the health and growth of nations than any other. M. Triboulet and M. Mathieu's suggestions are well worth pondering upon. Shortly, they propose: 1. Special legislation which, however, must be backed up by private effort. All alcohol should be taxed except that employed in industries. 2. Taxes on coffee, cocoa, and tea should be reduced as much as possible. All profits accruing from the taxation of alcohol should be employed in works of charity. 3. No alcoholic drinks should be allowed to be sold in barracks, arsenals, or railway works. 4. In large towns public-houses should be closed at 11 P.M., except those near theatres and railway-stations, while in small towns and villages they should be closed at 9 P.M. in winter and in summer six hours before sunrise. 5. No person under 18 years of age and no drunken person should be served. All establishments where drinks are sold should be compelled to be well ventilated. Civil legislation should provide establishments for the treatment of the habitual drunkard, and the State should only allot its posts of employment among members of temperance societies; while owners of property should be made to see that the houses for which they receive rent are in a proper sanitary condition. M. Triboulet and M. Mathieu allow that the problem is far from easy to solve, but they maintain that their system is worth trying.

Encyclopédie Scientifique des Aide-Mémoire.—Under the above heading Messieurs Masson et Cie., the Paris publishers, are issuing a series of handbooks to various departments of medicine and the kindred sciences. We have before us three of the volumes, which are octavo books, price 2 fr. 50 c. each. The first, *Maladies des Voies Urinaires*, by M. Bazy, surgeon to the Beaujon Hospital, deals with the general and symptomatic therapeutics of these diseases and with the operative surgery which is sometimes necessary for the relief of diseased conditions of the urinary organs. Two volumes have already appeared of this series, the first dealing with exploratory operations and those of urgency, while the second deals with symptomatology. The volume under review is the third, and a fourth, upon special therapeutics, will complete the series. The present volume is divided into three parts. In the first M. Bazy treats of the various drugs which affect the urinary organs and secretion. Next he passes to the consideration of special therapeutics and treatment, such as that of hæmaturia, urinary infection, and urinary insufficiency, together with the treatment of retention. In the final portion of the book a description of various operations upon the urinary organs is given. The book is very clearly and simply written and though, of course, it, as well as the whole series, presupposes knowledge on the part of him who consults it, it should be found to be, as the name suggests, a valuable refresher of the memory. The second volume before us is entitled *Analyse Biologique des Eaux Potables*, by Dr. J. Gasser. There is but little doubt that the purity of the water-supply is one of the most, if not the most, important factors in the health of a community. Beginning with an account of the apparatus necessary for bacteriological examination Dr. Gasser proceeds to give an account of the methods of estimating the microbes present in a given sample of water and concludes with a description of the pathogenic organisms carried by water as well as the more common organisms which exist in water, such as bacillus ramosus. The third volume before us bears the title *L'Insuffisance Hépatique* and is by Dr. A. Gouget, physician to the hospitals. It deals in a plain manner with the signs, symptoms, causes, and treatment of the condition called by Murchison "lithæmia." As a *résumé* of a very common and yet complex condition, one, moreover, which is by no means easy always to treat successfully, this little book may be recommended.

Über die Ursache des Alters: Grundzüge der Physiologie des Wachsthums mit besonderer Berücksichtigung des Menschen. (The Determining Causes of Age: Elements of the Physiology of Growth, with especial Reference to the Human Subject.) By Dr. M. MÜHLMANN. Wiesbaden: J. F. Bergmann. Glasgow: F. Bauermeister. 1900. Pp. 195. Price 5 marks.—Dr. Mühlmann has for several years been making observations on the weights of different parts of the human body and the study of these data has led him to several interesting conclusions. He finds, for instance, that an investigation and comparison of the phenomena of growth in the several components of the body are far more instructive than mere weighing of the entire body. It is customary to reckon three principal stages or epochs of human life—namely, (1) the period of growth extending from birth to 25 years of age; (2) the period of maturity extending from 25 to 40 or 50 years of age, during which growth ceases and a condition of equilibrium is maintained; and (3) the period of old age which immediately follows that of maturity. The leading features of an individual life may be summarised in this way, but the study of the growth of separate organs or parts of the body casts quite a fresh light on the subject, revealing the fact that each organ has its own stages of youth, maturity, and old age, and that in none of the organs does this series of changes take place coincidently in point of time with the corresponding changes which affect the body as a whole. The body attains its greatest size during the third decade and continues about the same during the fourth and fifth decades. The brain, however, attains its greatest size in the second decade, the kidneys in the third, the muscles, skeleton, intestines, and liver in the fifth, and the heart and lungs in the eighth decade—i.e., in extreme old age. Increase or decrease in the weight of the body is therefore not due to simultaneous increase or decrease in the weight of all its component parts, but is the resultant of an increase in some organs and a decrease in others. The brain attains its greatest weight about the fifteenth year of life, and as the ratio of its weight to that of the whole body is at the highest in the new-born infant its growth relatively to that of the body evidently diminishes from birth onwards. The liver and kidneys present analogous conditions but in a much less marked degree. The loss of weight which is one of the features of old age is chiefly due to wasting of the bones and muscles. In the last two chapters of his work Dr. Mühlmann treats of metabolism at different periods of life and discusses the pathological changes of old age, comparing them with the effects produced by chronic starvation in middle life.

Studien über die Ursachen der Lungenkrankheiten. (*Considerations relative to the Causes of Diseases of the Lungs.*) By Dr. N. PH. TENDELOO. Part I. (Physiological). Wiesbaden: J. F. Bergmann. Glasgow: F. Bauermeister. 1901. Pp. 118. Price 3 marks 60 pfennig.—As is well known, some diseases of the lungs have a marked tendency to localise themselves in certain portions of these organs. Starting from this fact Dr. Tendeloo of Rotterdam, formerly assistant in the Boerhaave Laboratory at Leyden, set himself to study the question whether the changes in volume produced in the pulmonary vesicles during the act of respiration were the same in all parts of the lung. Both physiological and pathological methods are obviously calculated to throw light on the subject, and in the present treatise Dr. Tendeloo deals with the physiological part, reserving his pathological inquiries for a second work to be published at an early date. The conclusions which he has so far arrived at are as follows:—1. The changes in volume produced in the pulmonary vesicles during the act of respiration are not the same in different parts of the lungs. They are least in the paravertebral supra-thoracic portions and from this point they increase in all directions at varying rates, attaining their maximum in the caudal lateral portions. In every part of the lung and in each lobe of it the changes in volume produced in the pulmonary vesicles during the act of respiration are greater in the periphery than in the centre. 2. The renewal of the air is proportional to the magnitude of the changes in volume produced during the act of respiration. 3. The average kinetic energy of the air in motion is during one and the same phase of respiration directly proportional in the different parts of the lungs to the respiratory changes in volume. 4. The average amount of blood and probably also the average amount of lymph present is least in the supra-thoracic portions of the lungs but increases gradually in the caudal direction. 5. The kinetic energy of the lymph current during expiration is, on the whole, proportional to the respiratory changes of volume.

Hong-Kong: Report of the Principal Civil Medical Officer for 1899. By J. M. ATKINSON, M.B. Lond., D.P.H. Cantab. Pp. 38.—In his report for 1899 Dr. Atkinson states that the estimated population of the colony at that time was 259,310. There were 1132 births and 6181 deaths, 1434 of the latter being from plague. The birth-rate was 4·3 per 1000. The general death-rate was 23·8 per 1000; excluding the deaths from plague it would have been 18·3 per 1000. The death-rates according to nationalities were as follows: whites, 12·5 per 1000; Indians and coloured persons, 28·3 per 1000; and Chinese, 24·4 per 1000. At the Government Civil Hospital 2734 patients were admitted, of whom 811 were "Europeans," 659 were "Indians and coloured persons," and 1264 were "Asiatics (Japanese included)." Among the appendices there is a report by Dr. J. A. Lowson showing that at the Tung Wah Hospital 2542 patients were admitted; of this number 1491 were treated by the Chinese native doctors, 556 were under western treatment, and 495 (chiefly plague patients) were transferred to other hospitals. At the Infectious Hospitals, Kennedy Town, 37 cases of small-pox and 226 of plague were admitted. The average strength of the troops serving in Hong-Kong during 1899 was 1643 white and 1325 black; the average daily rate of sickness was 186·4 among the whites and 64·9 among the blacks. The mortality per 1000 of the strength was 11·5 among the whites and 7·5 among the blacks. The highest mean monthly temperature was 83° F. in July; the highest monthly rainfall was 20 inches in August.

To the Passion Play and Back. By J. JOHNSTON, M.D.Edin. Bolton: Tillotson and Son, Limited. 1900.—In this little pamphlet of 40 pages Dr. Johnston gives an account of a holiday excursion made with a friend to Ober Ammergau to witness the Passion Play. He gives a simply written description of the almost solitary mystery play which exists at the present day and his words give a good idea of the remarkable effect which the realism, the devotion and the reverence of the performance produce. The Passion Play, as is well known, had its origin in a vow made by the villagers in thankfulness for deliverence from a destructive epidemic which ravaged the country over 200 years ago.

JOURNALS AND MAGAZINES.

Edinburgh Medical Journal.—The opening article in the January number is the first of Dr. G. W. Balfour's Morison Lectures on Insanity, delivered before the Royal College of Physicians of Edinburgh. Under the general title of "The Borderland" he has collected a variety of instances in which persons subject to mental abnormality or disorder have attained great distinction in philosophy and science, as military and religious leaders, and in literature, his representative examples being Socrates, van Helmont, Joan of Arc, Mohammed, Dean Swift, William Cowper, and Christopher Smart. Professor Chiene of Edinburgh University publishes an account of his experiences with the medical department of the army in the South African war; in concluding he expresses the hope that the medical history of this war will be fully described in the same form and with the same thoroughness as the great civil war in America has been dealt with by the Government of the United States. In a presidential address delivered before the Edinburgh Obstetrical Society Dr. R. Milne Murray directs attention to the increasing puerperal mortality in private practice as contrasted with the very low death-rate in lying-in hospitals. Mr. W. Arbuthnot Lane writes on the operative procedures in simple fractures which have been unscientifically treated.

Scottish Medical and Surgical Journal.—The first article of the January number is devoted to the Scottish National Red Cross Hospital at Kroonstad, Orange River Colony, the author being Mr. Henry E. Clark, senior surgeon to the Glasgow Royal Infirmary. The first contingent of the hospital left Glasgow on April 20th, 1900, and arrived at Kroonstad on May 25th. Another member of the staff of the same hospital, Dr. Robert Stirling, surgeon to the Royal Infirmary, Perth, writes on the war establishment of the R.A.M.C. He considers that "the augmentation of the R.A.M.C. through civilians and civil hospitals does not supply that homogeneity and elasticity essential to the needs of a great war." In his opinion the best plan would be to form a large reserve of officers and men annually mobilised in military hospitals and paid during such periods of training. Dr. J. M. Cowan, physician to the Scottish Branch Red Cross Hospital, contributes a short article on the outbreak of enteric fever at Bloemfontein and the results of inoculation with Professor Wright's prophylactic.

Caledonian Medical Journal.—In the January number Dr. Alastair MacGregor of Shepley, Huddersfield, continues his articles on second sight, relating a variety of fulfilled premonitions of death; among the persons who experienced these premonitions were Dr. MacGregor's mother and brother, the present Lord Charles Beresford, and three Yorkshire clergymen. A considerable number of Gaelic anatomical terms are introduced in the course of a review of Mr. Alexander Carmichael's "Carmina Gadelica." Some space is devoted to announcements relative to the Gunning Celtic prizes of the Caledonian Medical Society which have been already mentioned in THE LANCET of Dec. 8th (p. 1658) and Dec. 22nd (p. 1825), 1900. The essays for which these prizes will be given must be sent to the secretary, Dr. S. R. Macphail of Rowditch, Derby, by Jan. 1st, 1902.

Mercy and Truth.—The January number contains articles on a medical mission in the north-west frontier of India by Dr. W. B. Heywood, and on medical work in Mombasa by Mr. C. S. Edwards.

THE LANCET.

LONDON: SATURDAY, JANUARY 19, 1901.

The Royal Commission on the Beer-poisoning Epidemic.

THE recent epidemics of peripheral neuritis, the discovery of arsenic in beer, and the possibility of arsenic being contained in any other food-stuffs, are among the points which have been referred for elucidation to a Royal Commission the constitution of which we print elsewhere. The terms of reference of the Commission are so wide that it is practically certain that this decision of the Government will lead to no prompt legislation, however urgently there may be need of it. Great public questions have, of course, in the past become clearer under the macroscopic and microscopic examination of a Royal Commission. And where such questions have involved an enormous mass of evidence being taken before any clear position could be defined or any definite line of action could be mapped out, delay in rendering a report and hesitation on the part of the Government in taking consequent action are inevitable. The case of the beer-poisoning epidemic, it seems to us, is very different, since there is plenty of evidence at hand, and this evidence is of a very unmistakeable kind, freely supplied by scientific men and business men anxious to tell the truth. Unless the scope of inquiry at present outlined for the Commission is not materially reduced, enabling it to do its work in less than a month, we think it a pity that it was appointed, for there is, in our opinion, an abundance of facts and material at hand which would have enabled the matter to be adequately and fairly discussed in Parliament without awaiting more information. Practically every instruction on the agenda presented to the Commissioners has been to some extent satisfied by the evidence of competent scientific men, for the economical aspect of the use of substitutes is not referred to the Commission. We are glad that the subject is to be approached in the first instance from the health point of view in order that an ugly stigma on our health administration may be removed once and for all and that the purity of our food-supply may be placed beyond reproach.

A Royal Commission is usually a long while in issuing a report because of the great crowd of witnesses that are enlisted to give evidence before it. Rapid action for the public and the sake of all concerned in the various calamities is what is required in the matter under consideration. If a Royal Commission must needs be held to make investigations respecting the beer-poisoning epidemic it is earnestly to be hoped that it will limit its interrogations to those important witnesses who have at their disposal the facts. The first instruction on the agenda before the Commissioners is "to ascertain with respect to England and Wales the amount of recent exceptional sickness and death attributable to poisoning by arsenic." The reports contained in our columns and in those of our contemporaries, medical and lay, show that fresh cases are occurring nearly every day, and therefore it will not be possible to gauge the true extent of the epidemic for some time. A good idea, however, of its area and of its distribution and of the number of individuals whom it has affected has already been given in the reports of the medical officers of health of the districts concerned, and again the number of cases admitted at hospitals are recorded and the deaths attributable to poisoning by arsenic in beer are of course registered. The second instruction on the agenda relates to "whether such exceptional sickness and death have been due to arsenic in beer or in other articles of food or drink, and if so (*a*) to what extent; (*b*) by what ingredients or in what manner the arsenic was conveyed; and (*c*) in what way any such ingredients became arsenicated." If we omit the words "other articles of food or drink" we shall be perfectly right in saying that the evidence already gained upon the point as to whether such exceptional sickness and death have been due to arsenic in beer is conclusive. The suggestion that the investigation should include other articles of food or drink besides beer opens up an enormous field for inquiry which will delay more than anything else the extinction of the mischief and the prevention of its recurrence. We honestly believe that unless the scope of inquiry, for the present at any rate, be confined to the beer-poisoning epidemic the appointment of a Royal Commission will be valueless so far as regards a speedy relief of the present unsatisfactory condition of affairs. In taking this view we find that we are in complete accord with the attitude of Mr. CHAPLIN, whose word on the subject of Commissions, whether Royal or Departmental, is well worth attention, for it is well known that he can claim an enormous experience. Referring to the second instruction to the Commission he writes to the *Times* "that he does not hesitate to say that with a reference so wide that it extends to all other articles of food and drink in England which are numbered by the hundred a Commission may easily sit for any time from five to seven or more years." Further, as Mr. CHAPLIN points out, the question of food and drink has only recently been legislated upon afresh after a very long inquiry by a Treasury Committee. He alludes obviously to the Food and Drugs Act of 1899 which provides against the presence of deleterious substances in foods, drugs, and drink.

We feel that the Government have already an ample supply of facts at hand in order to give the question fair discussion with the view to the introduction of a short Bill to prevent arsenic poisoning by means of beer. We care not whether such a Bill is directed to the interdiction of malt substitutes or whether it forbids the sale of all food and drinks except under their proper name, so long as it meets with an urgent requirement of public health. We do not suppose for a moment that Parliament will ever decide that only a certain fluid of a certain composition may be legally called beer, or will commit itself to any narrowly protective measure, but without doing either of these things the introduction of arsenic into beer can be stopped. The last instruction to the Commission provides that "if it is found that exceptional sickness and death have been due to arsenic

in beer or in any articles of food or drink to ascertain by what safeguards the introduction of arsenic therein can be prevented." There need be no "if"; exceptional sickness and death have been traced indubitably to arsenic in beer. Why, then, await the report of a Royal Commission to interdict by law the recurrence of such tragedies? We doubt the expediency, or even necessity, of this Royal Commission. It is an excellently composed body, but we cannot help feeling that it is being asked to answer questions that no longer need be put, and to suggest remedies which could be applied without its intervention.

The Modern Treatment of Stone in the Bladder.

BEFORE the time of CHESELDEN many and various methods of lithotomy were practised. Most of these were forms of perineal lithotomy, though they were crude and unscientific, but on a few occasions the suprapubic operation was practised. The introduction by CHESELDEN of the lateral operation of lithotomy early in the seventeenth century led almost at once to the discarding of all the various other methods which had previously been employed for the removal of stone from the bladder, and its pre-eminence was not seriously attacked for nearly 200 years. In 1822 CIVIALE placed on a firm foundation the operation of lithotrity and the value of the crushing operation was rapidly recognised and its employment spread widely. Yet there was no real tendency for lithotrity in the form then employed to displace the lateral operation of lithotomy, and it may be said that lithotomy remained the chief operation for vesical calculus for 50 years after the introduction of lithotrity, the crushing operation being performed in those cases only which were considered to be especially suited for it. And no material change was made in surgical procedure under lithotrity until the year 1878. The operation was still performed in several "sittings," and the crushed fragments were still removed mainly by the natural urinary flow. BIGELOW, in 1878, published his method of crushing the stone; he employed lithotrites still more powerful than those previously used, crushed all the fragments and removed them at the one operation. BIGELOW showed that this procedure was much more readily tolerated by the bladder than less thorough operations in which many of the fragments were left within the viscus which thus never had the complete rest which was necessary for its recovery. BIGELOW'S new operation was accepted after a little hesitation by all, or nearly all, surgeons throughout the world, and in a very few years the operation with which CIVIALE'S name was associated had died out; and so thoroughly had the later replaced the earlier operation that the name "lithotrity" was transferred to the new operation, and, in fact, at the present time when lithotrity is spoken of BIGELOW'S method is always intended. The name "litholapaxy" is occasionally used to designate the operation introduced by BIGELOW, but it is not unlikely ultimately to be given up for the somewhat shorter if no more euphonious "lithotrity."

About 1880 an attempt was made to re-introduce the "high" or suprapubic form of lithotomy; this was supported chiefly by Professor PETERSON of Kiel and by Sir HENRY THOMPSON. The operation was, of course, not in any way new, as it had been performed at intervals from the middle of the sixteenth century, and in 1875 Dr. C. W. DALLAS collected 465 cases of the operation which had been recorded in medical literature. The mortality from suprapubic lithotomy has varied greatly, but in skilled hands the results in suitable cases are comparable with those of any other method. At present it can only be considered advisable in certain cases in which lithotrity cannot be performed. Though BIGELOW'S operation had replaced all other methods for removal of a vesical calculus in adults, boys were until recently still submitted to the cutting operation, as it was thought that in them the calibre of the urethra was insufficient for the introduction of suitable lithotrites. But in 1884 Dr. D. F. KEEGAN, then a surgeon-major in the Indian Medical Service, published his results on lithotrity in boys, and these showed that the operation was as applicable to boys as to adults and that the mortality after lithotrity was distinctly less than after lithotomy. This teaching has been accepted and lithotrity in boys may be considered to be fully established, though naturally even more than ordinary care has to be employed in the operation. Thus it has come to pass that in all cases of stone in the bladder the crushing operation presents itself as the most suitable means of removal and that a lithotomy should only be performed where some insurmountable obstacle exists to the effective use of the lithotrite.

Much of the work which has lead to these conclusions has been done in India, where there is an unrivalled field for the treatment of stone in the bladder. The frequency of vesical calculus in some parts of that country is very great, and it does not appear strange, when the large population and the comparative scarcity of surgeons are considered, that it sometimes falls to the lot of a surgeon in India to operate in several hundred cases of stone. In an interesting discussion on this subject which was held at the last meeting of the British Medical Association it was maintained by some of the speakers that the stones in India were not of such firm consistence as those met with in East Anglia, and therefore that conclusions based on Indian experience were not applicable to calculi met with in this country. The opposite opinion was strenuously maintained by others at that meeting, and it may well be that though there is some difference in the hardness of these calculi the difference is but slight. A striking indication of the extent to which treatment of stone is required in India is afforded by the appearance recently of a special number of the *Indian Medical Gazette* devoted to the consideration of vesical calculus and its proper therapeutics. In this are printed articles by Dr. KEEGAN and others who have had much experience in this branch of practice and many notes are also given on special points in connexion with lithotrity. No surgeon can doubt after reading our contemporary's special number that at the present time the safest and the most speedy method of removing a stone from the bladder in nearly every case is BIGELOW'S operation of lithotrity.

The Battle of the Clubs at Wigan and Elsewhere.

MUCH has been said lately about the disposition of the friendly societies to act with consideration towards the members of the medical profession, but with every inclination to publish accounts of such a happy state of affairs we have been unable to come across a well-authenticated case. Yet any ungracious attitude on the part of such societies towards the medical profession is ungenerous as well as unjust. Whatever faults may be alleged against the original club system are due to the system itself, which was essentially an inadequate one, the product of old conditions, when the means and position of the working classes were very different from what they are now, and when medical education and equipment were also different. But even under that system, when the working man was poor, when there was little organisation of his order, when he counted for nothing in society and had no political power in the State, the medical man was his most constant friend. And through all the political changes of the last two or three generations it has been the same, the medical man has been on the side of all that made for the amelioration of the position of the poor. Now the working man is well paid; his class is highly organised; he meets his employers on almost equal terms; the labour and the skilled workmanship he has to give are as indispensable to national prosperity as is capital itself. He himself is in a degree educated; his children are more so, and the development of our complicated civilisation has created good places for them, for which they can be fitted by an education for which their parents pay only partially and indirectly. The working man of to-day is of political consequence. And withal he is a good fellow, and in his way, as Lord ROBERTS said of his soldiers, a gentleman. He has achieved his position largely by the genius for organisation which characterises his class. Is it conceivable that he should be offended with medical men for organising too, or for thinking that the petty remuneration with which club practice was rewarded in past days is quite out of place now? We cannot believe that this is the real feeling of the working man, or that if the facts were clearly placed before him it would continue to be so.

Yet what are we to think when we read some accounts of the action of large numbers of working men, acting not in their individual capacity, but as medical aid associations? THE LANCET of last week contains a report of the manner in which certain of the Durham and Northumberland miners, men of integrity who are prosperous, have received the demand of the medical profession for an advance of pay from 6*d*. a fortnight to 9*d*. A large proportion of the miners have refused to grant the advance asked for. An equally instructive story comes from the district of Glasgow, where all workmen are well paid. Dr. J. A. WILSON of Springburn has for 15 years served the Rechabites for 2*s*. 6*d*. a year per member, many similar societies giving 4*s*. or 5*s*. Dr. WILSON appealed for an increase to 4*s*., and asked also that children should be examined before admission to the benefits of the "tent," as the local organisation is termed, and that the pay for attending them should be raised also. The Rechabites, in reply, consented to increase the pay of adult members to only 3*s*. per annum but refused to raise the pay for children to this amount, though they agreed that they should be examined before admission to the "tent." The medical profession generally supported Dr. WILSON, but one medical man—there always seems one in such cases—consented to do the work on the shabby terms of the Rechabites. This week another story of the relations between the friendly societies and the medical profession reaches us through the press, and again we fail to see in it any sign of urbanity on the part of the societies. At Wigan, according to a report in a local paper there has been rejoicing over the formation of the Wigan and District Friendly Societies' Medical Association. This association has been formed in response to the action of the Medical Guild of Wigan which demanded better terms. The members of the new association are said to number nearly 5000. They have taken premises and opened a medical hall with great show of triumph and a resolution to have "a medical officer of their own." Druids and Oddfellows and Foresters dined and rejoiced together and thereafter held a meeting at which they tried hard to justify themselves for scouting the medical profession of Wigan. They appear to have acted under the guidance of Mr. BIBBY, described as "secretary to the Warrington Society." He seems to have been the orator of the evening, and he allowed himself the use of language towards the medical profession of Wigan and of arguments which contrasted with the tone of his audience and the statements of such as spoke. Amongst other things which Mr. BIBBY said was that in the majority of cases the cause which led to the formation of these medical aid associations was "the old club system, or in other words a slightly better form of treatment than paupers usually received." In refutation of this libel we have only to quote the words of the secretary of the Wigan Friendly Societies Medical Association—Mr. CAVEY—who in describing the battle between his association and the medical profession said that they were acting "in no spirit of animosity. They looked upon the services of the doctors in the past as honourable and they had no complaint to make in that respect." Mr. BIBBY added that the Wigan Association (the Medical Guild was obviously meant) had been "simply kicked out. It served them right. They ought to have been kicked out years ago for being so blind to their own interests." In the light of Mr. CAVEY'S words Mr. BIBBY is seen to be a highly inaccurate person, but we will try to believe in spite of his unmannerliness that he more accurately represented the motives of those who form friendly associations when he said that "they did not desire to do anything against the interests of the local doctors, they tried to conform strictly to the recognised rules of medical etiquette, that they did not advertise, they did not canvass, they desired the goodwill of every medical gentleman, and whether they got it or not they would do everything in their power to deserve it." Unfortunately, these are only words; what the medical profession would like to see is some action on the part of the friendly

societies that did not seem directly antagonistic to the profession.

As we understand the situation in Wigan one medical man has been found to do the work of many by attending single-handed on 5000 people. And this event is applauded as a victory over the medical profession by a meeting at which important speakers say that the Wigan friendly societies do not "desire to do anything against the interests of the local doctors" but "desire the goodwill of every medical gentleman." The action of the Wigan friendly societies is not only contrary to their secretary's statement and to the opinions expressed by the leaders of friendly societies in their repeated interviews with the Committee of the General Medical Council, but it has led or is leading up to a piece of sweatin which working men and their unions would be the first to condemn in their own employers. The working men of Wigan, acting as employers, propose to exact an amount of work from one man that should employ three or four, and they will defend their action as sweaters always do by saying that the man they have hired gets what he contracted for. No one man can give proper medical attendance to 5000 people. An authority which the Wigan friendly societies cannot repudiate, that of the Friendly Societies' Medical Alliance, laid down nearly 20 years ago, in 1883, when working men's wages were not so good and medical education was not so long and expensive as now the following order, that "when (medical aid) associations have upwards of 5000 members it will be found that either three medical men or two medical men with a dispenser will be required." It is not the medical profession of Wigan—save, perhaps, one of its members—that has to be ashamed or afraid of an arrangement which commits the health of 5000 persons to the care of one medical man.

Annotations.

"Ne quid nimis."

THE EDUCATION OF CRIPPLED AND FEEBLE-MINDED CHILDREN.

EVER since the publication of the report of the Royal Commission on Blind and Afflicted Persons in 1889 much interest has been shown by the public, and by the medical profession, as to the best methods of providing for the care and education of children who are unable to attend the ordinary schools. Special day classes for cripp'ed and feeble-minded pupils were first instituted by the London School Board; their example was followed by some provincial authorities and the Education Act (Epileptic and Defective Children), 1899, provided special money grants for the education of defective children properly certified. An impetus has thus been given to this useful department of education, which is extending in many directions guided by public effort and private philanthropy. Early last year the Liverpool School Board opened a special institution for the reception of day pupils who are crippled or mentally defective and placed it in the charge of a head mistress and three assistant teachers, with a nurse. At present there are on the register 67 cripples and 49 mentally weak children. Those who cannot walk are conveyed to school in an ambulance or by omnibus. Couches as well as chairs and desks suitable for the cripples are provided. There are also baths in the institution where a nurse is in attendance who can apply simple dressings and attend to the children. The teachers superintend the dinners which are provided in the school, and by their kindness, tact, and patience they have done much to train habits of obedience and quietude in the pupils in place of unrest and the desire to disobey orders, however kindly given, which is so common among such children when they are neglected. The children are kept employed as far as possible through the day, with intervals for rest and play, when they are encouraged to help one another; the child with heart disease can amuse his fellow with spinal curvature who may not move from his couch. Occupations are planned to be of increasing usefulness and interest according to the ability and advancement of the pupils, commencing with bead-threading, cane-weaving, knitting, and advancing to mat-making or needlework. The purpose of each form of occupation is educative and progressive. Music and singing by the tonic-sol-fa system are found useful and promote comradeship and harmony in the school. We are glad to find that much attention is given to the cultivation of speech and the correct sounding of words written on the blackboard, while some pupils are taught arithmetic, grammar, and geography. Common knowledge is not neglected, and the children have learnt something of the heroes of the present war and of its principal events. Genuine success has been achieved. We are told that "recently a man called at the school to express the gratitude of all the people in one thoroughfare on account of the improvement that had been wrought in the conduct of one lad whose parents lived in that street." Much useful work has been done during the eight months that the school has been open. We should like to learn more about the system adopted in training the feeble-minded children in observation and judgment and as to the physical exercises used. The institution is under the medical supervision of Mr. Damer Harrisson who has shown great interest in the welfare of the children and their progress.

THE CERTIFYING OF STILLBORN INFANTS.

A SINGULAR charge against two medical men, Mr. D. T. Jones and Mr. J. M. James, was investigated before the Recorder of Sheffield at the borough quarter sessions on Jan. 11th. The defendants were indicted, the one for wilfully giving a false certificate that a child had been stillborn which had been, in fact, born alive, and the other, his partner, for aiding and abetting him in the same offence. Witnesses were called for the defence, including one of the defendants, and in the result the defendant charged with aiding and abetting was acquitted by the direction of the Recorder, while a similar verdict was also eventually found in favour of the other, coupled with an expression of opinion by the jury that he had been guilty of gross carelessness. From the evidence given on both sides we gather that the child in question was born prematurely, but that as to whether it was born at seven or at six months there seems to have been conflicting testimony; that after its birth Mr. Jones, one of the defendants, arrived and expressed the opinion that it could not possibly live, and took no particular steps to prolong its existence beyond having it placed in a blanket before the fire, while it was not alleged by the prosecution that the life of the child lasted for more than 12 hours after its birth. There was evidence that some attempt was made to feed it with sugar and butter on the finger of a witness, but no steps were taken by anyone to see whether the mother could nurse it. There was also evidence that it uttered sounds, but Mr. Jones declared that it did not do so when he was present,

saying that it made a spasmodic attempt to breathe and that that was the only sign of vitality that it showed while he was present. Leaving out a question raised as to his giving a certificate of its having been born alive and then withdrawing it, the terms of which certificate seem to have been disputed by him, we need only add that he finally certified that it was stillborn, although he is credited with the admission in the report before us that "he did not think it possible that the child had lived 12 hours," as the prosecution asserted, an admission which seems to us on the face of it inconsistent with a certificate that the child was born dead. His defence, however, seems to have been that the child was practically stillborn and that so he was justified in giving the certificate. Mr. T. R. Jessop of Leeds and Dr. Henry J. Campbell, lecturer on medical jurisprudence at the Yorkshire College, Leeds, who were called on behalf of the defendants, supported this view and apparently were of the opinion not only that a child such as they had heard described could not possibly survive—a matter which we have not discussed and which was not seriously questioned at the trial—but that a child in such a state was "practically dead" and that for it to be practically dead justified a certificate that it was stillborn. To determine the precise moment at which life ceases is not always easy, or, indeed, possible, but this is a different thing from contending that a person showing but slight signs of life, which signs admittedly must soon cease, is "practically dead," dead so truly as to justify a certificate that he is dead. Such a point could hardly be argued in the case of a grown person; but can it any more be raised in that of a newly-born infant? Important issues might hang upon the hour named by the medical man testifying to a death. The devolution of property might depend on whether a certain person, whether infant or adult is immaterial, lived long enough to inherit or died an hour or two too soon. In the case of an infant a charge of manslaughter or murder often depends on whether it was stillborn or had separate existence from its mother. In such a case a medical man, who before any charge of a criminal sort was made, had certified a child to be stillborn only because it was "practically" so, might find himself in an awkward predicament. In the case tried at Sheffield there was apparently no evidence given of any motive for the course taken by the defendant who gave the certificate, except some suggestion of a saving of fees to the relatives, and no doubt this want of evidence of motive influenced the jury who censured him for making a mistake and gave him "the benefit of the doubt." It is, however, possible that in such a case the parents of a child might be deeply interested in concealment and in the avoidance of scandal, and that secrecy might to some extent be gained by the stillborn certificate which, though it does not remove the obligation to register, simplifies formalities with regard to burial. In any case, we cannot admit a state of "practical" absence of life justifying a certificate of death or of stillbirth, unless conditions exist consistent with death and with death only, while we regard the accuracy of all certificates of birth and death to be of the utmost importance, whether great issues be involved or not.

SUBPERIOSTEAL FRACTURES.

IN the *Boston Medical and Surgical Journal* of Nov. 29th, 1900, Dr. Frederick J. Cotton calls attention to this comparatively unrecognised condition. Green-stick fractures are, of course, subperiosteal, but the type considered by Dr. Cotton differs from the ordinary green-stick fracture in that there is not a partly-broken bone and a deformity, but a clean-cut crack or transverse fracture and no deformity. Crepitus is absent. Subperiosteal fractures are, according to the writer, common in children but before the introduction of skiagraphy into surgery they escaped notice. The following cases are related. Case 1. A boy, aged 13 years, had his right arm injured in a football scrimmage. Next day he complained of slight pain and weakness in the hand and arm. There was no swelling or ecchymosis. At the middle of the radius there was localised tenderness, but the application of considerable force gave rise to no suspicion of deformity or mobility. The arm was put up in splints and examined at intervals. Not until 10 days after the injury was anything felt. Then a small callus was felt at the point of injury and a skiagram showed a transverse fracture apparently involving the full thickness of the bone. Three weeks after the injury repair seemed to be complete and the arm could be used freely. In Case 2 a fracture ran obliquely across the radius just above the epiphyseal line. A skiagram showed a clean fracture with practically no displacement—a condition corresponding to the not infrequent Colles's fracture without displacement occurring in adults. Case 3. A boy, aged seven years, fell on his elbow. Under ether a fracture running obliquely upwards and outwards was made out. There was no deformity and but little mobility. Case 4. A girl, aged five years, fell on her elbow. Next day there were effusion into the joint, pain, and tenderness. Careful examination showed no sign of fracture, but skiagraphy revealed a distinct crack across the humerus above the epiphyseal line. Case 5. A girl, aged five years, fractured her right clavicle. Disability and pain were slight. The only sign of fracture was the formation of callus. Dr. Cotton performed experiments on the cadavers of newly-born children to see how readily fractures could be produced and how much the periosteum hindered displacement. By slow forcible bending green-stick fractures with intact periosteum of the femur, tibia, and clavicle were produced. The latter could be bent double and back again with some breaking of the bone but no definite fracture line. A humerus was stood on end and struck on the upper end. It broke in the middle. There were some displacement and hinge-like movement, but the periosteum was untorn.

SHAKESPEARE AND MOLIÈRE AS PSYCHOLOGISTS.

M. COQUELIN'S attempted differentiation between Shakespeare and Molière in the current number of the *Grande Revue* contains many admirable points, but the versatile actor would be more than mortal if all were equally accurate. Molière's and Shakespeare's conceptions of life are wholly different, he says in conclusion. Shakespeare saw life as in a dream; he was an artist and nothing more. Molière saw things in their reality. Now, in a preceding passage M. Coquelin, after expatiating liberally on the merits of Shakespeare's women, felt constrained to note as a curious fact amongst them all, whether charming, profound, or sublime, that there is not to be found the equal of an Agnes or of an Armande. "In Shakespeare," exclaims the talented critic, "the chastest young girl has eaten of the tree of knowledge. The ignorance so dear to Arnolphe appears impossible to the English poet. Juliet is only 14, yet she is a woman. And even Miranda—brought up on a desert island with, for sole companions, her father and Caliban, and who in so many respects resembles Agnes—even Miranda has not the innocence of Agnes." To the questions Are such characters as Armande and Agnes true to life? and Is the portraiture of Molière more in accordance with reality than that of Shakespeare? the answers, if based upon the teachings of physiology as well as of psychology, must be in the negative. These young women, who were by no means idiots or fools, had entered upon the

stage of sexual maturity and were therefore aware by personal experience of the physical manifestations which that state entails on their sex. The state which M. Coquelin so strenuously lauds as *innocence* is in reality merely *ignorance*, and instead of deserving laudation calls for pity. Chastity founded and depending on ignorance is not a quality to excite admiration. It is a condition obviously fraught with peril and demanding removal at the proper time by means of judicious instruction. There is nothing to be ashamed of in knowledge, nor does the possession in the smallest degree detract from the exquisite loveliness of purity. On the contrary, it enhances it exceedingly in the eyes of all who are endowed with a true sense of proportion. The poet tells us that

> "Even the lion will turn and flee
> From a maid in the pride of her purity,"

but assuredly he never meant his couplet as an encomium on want of knowledge. The false modesty which desires to enwrap ignorance with the glamour of pseudo-sanctity is dying hard, but happily dying.

ANGINA DUE TO FRIEDLÄNDER'S BACILLUS.

IN the *New York Medical Journal* of Dec. 22nd, 1900, Dr. Emil Mayer has described a form of membranous sore-throat due to the bacillus of Friedländer, an organism found in certain cases of croupous pneumonia and also in other inflammations—stomatitis, rhinitis, membranous bronchitis, dacryocystitis, and ulcer of the cornea. In throat affections this bacillus was first observed by Max Stoss.[1] A woman, aged 30 years, had a sore-throat for eight days with insignificant general symptoms. On the right tonsil there was a white roundish exudation which yielded the bacillus of Friedländer in pure culture. The next cases, five in number, were investigated bacteriologically by M. Nicolle and his pupil M. Hebert,[2] and they form the basis of the latter's Thèse de Paris (1896). These two observers found the bacillus eight times in 1600 cases of sore-throat. W. C. C. Pakes[3] stated that since November, 1894, tubes of serum inoculated from 500 cases of sore-throat among the in- and out-patients of Guy's Hospital yielded the bacillus of Friedländer five times. Twice it was found in pure culture, twice in association with the bacillus diphtheriæ, and once with the staphylococcus aureus. Two more cases have been recorded by Billet.[4] The preceding are all the cases on record which Dr. Mayer could find. The following case came under his observation. A girl, aged 19 years, in good health, had suffered for 18 months from a chronic membranous inflammation of the throat. When untreated the membrane recurred two or three times a week, lasting one or two days and then becoming completely exfoliated, leaving the throat apparently healthy. If removed forcibly a raw surface covered by a glairy material was left. The surface bled on manipulation. The area affected varied; sometimes the entire pharynx and soft palate were covered. The formation of the membrane was accompanied by a sense of tightness in the throat. The membrane at first was very thin and adherent. Scattered through it were numerous small blebs. In a few hours the membrane became thick and pearly white. The suffering then was great. The patient learned to relieve herself by making gashes in the membrane with the point of a pair of scissors. Exfoliation took place without pain, leaving a reddened surface. Examination of cover-slip preparations and cultures never revealed the diphtheria bacillus but always Friedländer's bacillus almost in pure culture. Analysis of all the recorded cases shows the following facts. Angina due to Friedländer's bacillus may be acute or chronic. In the acute form there is on the tonsils and pillars of the fauces whitish-brown or pearly, somewhat adherent, membrane. The subjacent tissue is slightly inflamed. In the chronic form the tonsils, pillars of the fauces, palate, and posterior surface of the pharynx are strewn with white, pearly, or yellow elevations varying from one to five millimetres in diameter. They adhere closely to the mucosa which appears bloody or slightly inflamed. To remove them forceps or curette must be used. They are quickly reproduced, but, unlike diphtheritic spots, they show no tendency to coalesce. Symptoms may be absent or consist only of dryness of the throat, cough, and frequent attempts to swallow. The cervical glands are not swollen. In the acute form there may be some fever, lassitude, and headache. The duration varies from two or three weeks to several months. Dr. Mayer's case differs from those previously recorded in some respects. In but one of the latter was there a continuous membrane; in his case the entire soft palate was covered and the posterior wall of the pharynx had an independent membrane. As to treatment, the acute form tends to spontaneous cure. In the writer's chronic case no treatment seemed to avail at first, but later the application of an alcoholic solution of orthoform rendered the patient comfortable and diminished the severity and frequency of membrane formation.

[1] Mittheilungen aus der Schweiz, 1895.
[2] Annals of the Pasteur Institute, vol. xi., 1897.
[3] Brit. Med. Jour., March 20th, 1897.
[4] Presse Médicale, March 8th, 1898.

DEATH UNDER CHLOROFORM.

AN inquest was held at Bristol on Jan. 7th to inquire into the circumstances attending the death of Florence Brain, aged three years, who died while undergoing an operation at the Bristol Royal Infirmary. It seems that the patient was admitted to the Bristol Royal Infirmary on Jan. 3rd, 1901, suffering from tuberculous peritonitis. On account of her varying condition operation was deferred several times until, on Jan. 5th, after a general consultation by the surgeons, it was decided to open the abdomen. The child had been vomiting for 14 hours and at the time of operation the temperature was 95° F. and the pulse-rate was 100, very small and weak. The heart was examined and found to be normal, and chloroform was given upon a piece of flannel stretched over a wire frame. The child took the anæsthetic fairly well and the operation was nearly completed, but while the stitches were being put in she began to come round, so a little more chloroform was given. After a breath or two respiration suddenly stopped. No more chloroform was given, the operation was stopped, and artificial respiration was performed for half a minute. Natural respiration re-commenced and a few more stitches were being put in when the breathing began to fail and was therefore supplemented by artificial respiration. The pulse up to the cessation of respiration had remained good. Artificial respiration was continued for some time; inversion of the body, application of hot fomentations over the heart, and administration of strychnine were all used but without effect. The colour of the patient remained throughout extremely good, no lividity of either lips or cheeks being noticed. The amount of chloroform used in all was about two drachms. A post-mortem examination showed very extensive tuberculous deposit throughout the abdomen, the intestines being matted together. There was, in addition, extensive tuberculous disease of the lungs and the mediastinal glands were caseous. The heart and brain were normal. Mr. H. F. Mole, house surgeon, said in evidence before the coroner that the child died partly from syncope and partly from severe tuberculous disease, and the jury returned a verdict in accordance with the medical evidence. The phenomena of the narcosis as described appear to have been of a normal kind until the point when upon returning consciousness a fresh administration of the anæsthetic was

attempted. We are, however, told that the child took the anæsthetic "fairly well," and possibly this implies that there was some difficulty earlier. It is matter of common experience that the resumption of consciousness in weakly children is marked by either faintness or a hurried and often crying respiration; in either case a fresh supply of chloroform will easily prove an overdose and paralyse the vasomotor system or respiration. In the present case the circulation does not appear to have flagged so that the child in its feeble condition probably inhaled too strong a vapour of chloroform when the mask was re-applied. We presume that no third attempt to give the chloroform was made—i.e., no more was inhaled after the first failure of respiration. Certain it seems that the exhausted state of the child was a potent factor in the fatality. We notice that no inhalation of ether was given as a restorative measure; it is certainly a matter of regret that so few anæsthetists employ ether by "the open method"—i.e., by dropping it on lint—in such cases as the one under comment. It is one which often answers extremely well and saves many accidents.

UNGUENTUM HYDRARGYRI B.P.

IT is well known that mercurial ointment is commonly sold at roughly a third of the strength of the formula laid down in the British Pharmacopœia. But of course when the B.P. preparation is asked for it should be supplied. That apparently was not the demand made recently by the person appointed to collect samples under the Food and Drugs Act at the instance of the Folkestone Town Council. He was supplied with the mild ointment which it is the custom of druggists to sell to ordinary purchasers. And so a deficiency of mercury was found in accordance with the standard adopted by the British Pharmacopœia. The town clerk was instructed to take the necessary legal proceedings, which, however, were ultimately withdrawn, the chairman of the sanitary committee expressing an opinion that where a thing was not sold in accordance with the standard of the British Pharmacopœia it ought to be so labeled; and there is a good deal to be said in favour of this view. Pharmacists, however, will hardly relish labeling their preparations as non-official, as though that description would be perfectly accurate in some cases, yet it is calculated to bring preparations so labeled under prejudice. The Bench granted two guineas as a sort of solatium to the defendant, whilst expressing no opinion on the aspects of the case.

THE MINISTRY AND THE LICENSING LAWS.

DURING the short session of Parliament held in December about 50 Unionist members met in Committee Room No. 17 and unanimously agreed on a memorial to the Prime Minister in favour of licensing reform being undertaken next session by the Government in accordance with the unanimous recommendations of the Royal Commission on the Licensing Laws. It was resolved to form a body to be called the Unionist Licensing Reform Committee, with Sir W. H. Houldsworth as chairman and Mr. E. Tritton as honorary secretary. The Primate has lately intimated that the bishops are unanimously in favour of legislation on certain lines, and are determined that in some form it shall be attempted. There can be no doubt that the leaders of the Nonconformist churches are equally anxious to see some legislation recognising and tending to reduce the enormous excess of drinking—the excess which the majority report of the Royal Commission in a euphemism calls "the superfluous drinking" of the country. There is a rumour that the Government contemplate the introduction of a measure on the subject. We sincerely trust that this rumour will prove to be well founded. If it is not so we venture to believe that they will offend some of their best supporters and many who, like ourselves, without party bias, are anxious about the health and social happiness of the people. We are on the eve of a series of Cabinet meetings. The war and foreign politics cannot entirely engross the whole attention of Parliament. Of all social questions that of the housing of the poor is the most urgent, as Lord Salisbury has recently told us. Social reformers maintain that good houses cannot be obtained for the poor without the help and coöperation of the poor themselves. Articles in our columns have recently shown that in many cases the dissolute habits of the poor immensely complicate the problem of housing them. But without some support from the State the poor will not resist the fascinations of the public-house which absorbs such a large and disproportionate share of their wages. We venture to hope that the Ministry will tackle this question and not leave its supporters speechless when taunted as a party with indifference on this subject. Almost every European nation is feeling that legislation must do more than it has done to arrest the degeneration, disease, and poverty traceable to "superfluous drinking." Our national pauperism undergoes no reduction corresponding to the improved means of the people, showing that the nation suffers from the diversion of capital spent over this vice.

ARSENICAL POISONING IN THE COUNTY OF SALOP.

WE have already pointed out that if the provisions of the Food and Drugs Act were carefully and systematically made use of the sale of beer contaminated with arsenic would soon be stopped. Pending, however, the conclusions of a Royal Commission we may hope that full advantage of existing legislative machinery will be taken. Amongst the first successful prosecutions have been those instituted in the county of Salop. At Newport in this county on Jan. 15th a prosecution supported by the county analyst and the county medical officer of health resulted in conviction and a fine of £5. The beer contained one-eighth of a grain of arsenious acid per gallon. It is desirable to point out that in future all analysts should report the exact amount of arsenic found to be present and not be content with simply saying that the poison was discovered. The borough authorities of Shrewsbury have also fined a man for a similar offence and other prosecutions are pending. It would appear that between 50 and 60 arsénical poisoning cases have occurred in the county, including 30 at least at Market Drayton, 15 at Whitchurch, two at Wellington, and one each at Oakengates, St. George's, and Shrewsbury. According to observations so far made the pigmentation and eruptions in these cases are not so marked as they were in the cases in the Manchester epidemic.

THE PREPARATION OF BLOOD FILMS.

THE examination of the blood as an aid to diagnosis is now practised much more frequently than formerly, and especially in cases of supposed malarial fever. One of the main difficulties is to obtain a satisfactory film. Many suggestions have been made and in the *Journal of Tropical Medicine* of Dec. 15th Mr. W. L. Braddon, F.R.C.S. Eng., Negri Sembilan, Malay Peninsula, publishes a method which he has found to give good results. The slides and coverslips are sterilised and thoroughly cleaned. If slides with coverslips attached are to be prepared, the slip is placed on the slide in such a position that one of its edges coincides exactly with that of the slide. For temporary use vaseline is smeared round the edges of the coverslip, except that which corresponds with the edge of the slide and a small portion of the opposite edge. For experimental purposes white cement should be employed instead of vaseline. For the preparation of paired coverslips two slips, preferably

square ones, are accurately superimposed and firmly pressed together, and the vaseline or cement is smeared over all the edges except one, which is left free as before, and a part of the opposite edge. On touching the drop of blood to be examined with the free edge of a slide or paired slip, the blood enters in a thin film in which the corpuscles are spread out with satisfactory uniformity, having suffered a minimum of change from exposure to air and none at all from handling or pressure. When the whole space has been slowly filled the edges and small openings previously untouched with vaseline or cement are closed by applying a little of the former with a small camel-hair brush. Mr. Braddon states that fresh blood so taken will keep longer than after any other process with which he is acquainted. He goes on to say that stains are best added by placing a drop on the surface from which the blood is drawn and puncturing through the drop. This process would seem to possess many advantages. The glasses and coverslips duly arranged, the specimens of blood can be obtained by persons unskilled in the technique required in other methods; and if it should be necessary to send the preparations some distance to be examined they can be packed for carriage with less fear of damage than if single coverslips are employed.

IDIOPATHIC INTERNAL HYDROCEPHALUS.

IN a recent contribution to the *Journal of Experimental Medicine* (Oct. 25th, 1900), by Dr. Charles W. Burr and Dr. D. J. McCarthy, attention is drawn to the fact that whereas internal hydrocephalus from mechanical causes is relatively common, idiopathic internal hydrocephalus is rare and has attracted the attention of clinical observers and pathologists only recently. The credit of having established idiopathic internal hydrocephalus as a distinct clinical and pathological entity belongs to Quincke who in 1896 described the two varieties, acute and chronic, of this affection. The acute variety is most frequent in children, in adults it usually follows cranial injury, acute or subacute alcoholic poisoning and infectious fevers, especially typhoid fever and pneumonia. The following case was that of a man, aged 33 years, who was admitted to the Philadelphia Hospital in April, 1899, with severe headache, great weakness, and abdominal pain. His family and personal histories were unimportant, except possibly that four years previously he had had typhoid fever. On the evening of his admission to hospital he was delirious, the head was retracted and the neck muscles were rigid, and the legs were strongly flexed upon the abdomen. The temperature was 102° F., the pulse was 82, and the respirations were 24 per minute. The head could not be flexed or moved laterally, all attempts at passive movement causing severe pain. There was no muscular rigidity elsewhere. The tongue was brown, the lips were cracked, and the abdomen was distended. The knee-jerks and plantar reflexes were absent. The urine contained a trace of albumin and a few hyaline casts and had a specific gravity of 1027. Widal's test was made repeatedly with the blood with negative results. The provisional diagnosis was acute meningitis. At the end of a week Kernig's sign was present. Herpes of the lips and nose and a bluish mottling of the skin now appeared. The mental state varied greatly, the patient being at one time restless, delirious, and incoherent, at another time stuporous, and at moments almost rational. The pupils were dilated and slight lateral nystagmus was present. The fundus oculi was normal on both sides. In a fortnight he improved a little, the pain disappeared, and he was mentally clear, "but he had no realisation of his being sick, and though too weak to stand maintained that he was very well. ..... He was trifling and jocose, and, as his sister said, altogether unlike his usual self." He now appeared like a man in the early stages of general paralysis of the insane. He improved physically and remained thus for a month when the temperature rose, the old symptoms returned, nystagmus became marked, subsultus tendinum was added, and he died. The necropsy was made the following day. On opening the skull the dura mater was tense and elastic. The cerebral convolutions were broadened and flattened so that the sulci were almost obliterated and appeared as lines beneath the pia. The cortex was pale and anæmic. The infundibulum was distended and on opening the ventricles a large amount of clear fluid escaped. The lateral ventricles and the aqueduct of Sylvius were distended and the ependyma was boggy and separated easily from the underlying tissue. The choroid plexuses were œdematous, swollen, and injected. The spinal cord was similarly affected. The heart and lungs were normal. Microscopical examination showed a large number of hyaloid bodies in the choroid plexuses and a marked ependymal proliferation in the lateral ventricles. The vessels beneath the ependyma were actively congested and were surrounded by round cells with nuclei slightly smaller than glia cells. The neuroglia cells also showed proliferative changes. The cortical and spinal nerve-cells stained by Nissl's and Weigert's methods showed nothing abnormal and the white matter of the cord showed no degeneration with Marchi's method. Auto-intoxication was believed to underlie this obscure affection in the present instance, as this would best explain the symptoms present.

"HOSPITAL MANNERS."

UNDER the above title a contemporary comments upon the discourtesy that is said to be met with from subordinate officials at hospitals. The criticism to which we are referring is based upon the alleged grievances of a would-be lady visitor. This lady's sense of the fitness of things was apparently first offended when she was asked to wait in a room adjoining the matron's room. When from the matron's room itself laughter was heard the would-be visitor's feelings were further outraged. Later she received, according to her account, a cool reception at the matron's hands, and her final "Good morning" met with no response. Now, all connected with hospitals know how much good and kindly work is done by lady visitors and would be deeply grieved to think that their efforts should ever receive any but the warmest welcome at the hands of the matron or any other hospital official. That there was any discourtesy on the part of the matron in the case referred to we are very loth to believe. The lady was admittedly a complete stranger to the hospital. Strangers in hospitals wander to the queerest places and have the queerest notions as to who and what are the persons and things they meet. To the average lady in a strange hospital every student is a physician or surgeon, and quite possibly any nurse, or even wardmaid, might be a matron. That a lady should have been impolitely spoken to by anyone is of course deplorable, but the discourtesy of which our contemporary complains is, we are perfectly certain, scarcely to be found in any London hospital.

ROYAL MEDICAL BENEVOLENT COLLEGE, EPSOM.

THE Earl of Rosebery, the President of the Royal Medical Benevolent College, has promised to take the chair at a festival dinner in aid of the fund for the pensioners and foundation scholars at the Hotel Cecil on Tuesday, April 16th. In consequence of heavy and unexpected charges which have arisen within the past few years for drainage and repairs money has had to be found, and the council are now in a state of serious financial embarrassment, although, as far as can be seen, the pressure is only of a temporary character. On Dec. 31st, 1900, a sum of £2500 was owing to the bankers. To liquidate this and to keep up the yearly aid to the aged pensioners and young foundation

scholars the aid of all interested in the welfare of the medical profession is earnestly solicited. Gentlemen willing to act as stewards or who desire to be present at the dinner will receive all information from the secretary, Mr. J. B. Lamb, at the office, 37, Soho-square, W.

LIEUTENANT INKSON, V.C., R.A.M.C.

FOR the second time within a year it is our proud duty to record the bestowal of the blue ribbon of service honours—the Victoria Cross—upon a member of the Royal Army Medical Corps. The last recipient was Major W. Babtie, C.M.G., V.C., R.A.M.C., and now the honour comes to Lieutenant E. T. Inkson, R.A.M.C., for the following act of courage. On Feb. 24th, 1900, Lieutenant Inkson carried Second Lieutenant Devenish (who was severely wounded and unable to walk) for three or four hundred yards under a very heavy fire to a place of safety. The ground over which Lieutenant Inkson had to move was much exposed, there being no cover available. In the name of the profession we congratulate Lieutenant Inkson upon the addition of his name to the national roll of heroes.

GARBAGE-MONGERS.

WE have on previous occasions expressed the opinion that a man who sells diseased meat for human consumption is no more nor less than a potential poisoner and should be treated as such. A peculiarly infamous case of the kind is reported from Aberdeen, where on Jan. 15th Mr. George Wood, a butcher and cattle-dealer, pleaded guilty to having sold to a firm of Government contractors a large quantity of unsound beef. The meat was going to be made into rations for the troops at the front. Wood was fined £50 and costs, with the alternative of 60 days' imprisonment. Why any alternative was offered we fail to see, for no more dastardly crime could be imagined than that of attempting to poison Her Majesty's troops on active service.

THE RÖNTGEN SOCIETY.

THE council of this society announce that the President, Dr. J. Macintyre of Glasgow, has placed at their disposal a gold medal to be awarded to the maker of the best practical x-ray tube for both photographic and screen work. The competition is open to makers in any country. The jury will be chosen by the President and council of the society, and their names will be announced in the *Times* of March 1st Tubes intended for competition must be sent in addressed to the Röntgen Society, 20, Hanover-square, London, W., marked "Tube for Competition," the package containing the full name and address of the sender, and must reach the society not later than May 1st, 1901. The conditions of the competition can be obtained on application to Dr. F. Harrison Low, honorary secretary, 12, Sinclair-gardens, West Kensington, London, W.

THE ELECTION OF A DIRECT REPRESENTATIVE FOR IRELAND ON THE GENERAL MEDICAL COUNCIL.

ON Feb. 28th, 1901, the term for which Sir William Thomson was elected as Direct Representative of the registered practitioners in Ireland will expire. For some time past the General Medical Council has been taking steps in accordance with the Medical Acts preliminary to the issue of voting papers for the election. The issue of such papers will take place between Jan. 21st and 24th. The last day for their return will be Jan. 31st. The counting of votes will take place between Feb. 1st and Feb. 4th. The meeting of the Branch Council for Ireland to certify the result of the election will be on Feb. 5th, and the declaration of the poll by the returning officer will take place on Feb. 6th. The general impression is that Sir William Thomson will be re-elected, though we learnt with some surprise a few days ago that a contest is possible. It will be a pity to bring any second candidate into the field unless there is a good chance of his success. Some feeling has been expressed in favour of the nomination of a Poor-law medical officer by the council of the Irish Medical Association. But a man is wanted who will represent the whole profession in Ireland, including its Poor-law medical officers. And no man is more capable of doing this with dignity and effect than Sir William Thomson, who is deservedly regarded as one of the most useful, independent, and well-informed members of the Council.

THE REGULATION OF THE SALE OF CARBOLIC ACID.

A CIRCULAR letter has been sent to the sanitary authorities throughout the country admonishing them as to the precautions to be taken in dealing with carbolic acid. As we announced in THE LANCET of Sept 8th, 1900 (p. 752), an Order was made by the Privy Council in July, 1900, approving a resolution passed by the Pharmaceutical Society of Great Britain that liquid preparations of carbolic acid and its homologues containing more than 3 per cent. of those substances should, except in certain cases connected with agriculture and horticulture, be deemed poisons within the meaning of the Pharmacy Act, 1868. It is now pointed out by the Local Government Board that whenever the disinfectant employed is carbolic acid or any other poison within the meaning of the Pharmacy Act, 1868, only bottles similar to those prescribed by the regulations adopted by the Pharmaceutical Society of Great Britain and approved by the Privy Council on Jan. 31st, 1899, should be used to contain it. The regulations in regard to the keeping, dispensing, and selling of poisons are now as follows:—1. That in the keeping of poisons each bottle, vessel, box, or package containing a poison be labeled with the name of the article and also with some distinctive mark indicating that it contains poison. 2. Also that in the keeping of poisons each poison be kept on one or other of the following systems—viz., (*a*) in a bottle or vessel tied over, capped, locked, or otherwise secured in a manner different from that in which bottles or vessels containing ordinary articles are secured in the same warehouse, shop, or dispensary; or (*b*) in a bottle or vessel rendered distinguishable by touch from the bottles or vessels in which ordinary articles are kept in the same warehouse, shop, or dispensary; or (*c*) in a bottle, vessel, box, or package kept in a room or cupboard set apart for dangerous articles. 3. That in the dispensing and selling of poisons, all liniments, embrocations, and lotions containing poison be sent out in bottles rendered distinguishable by touch from ordinary medicine bottles, and that there be affixed to each such bottle (in addition to the name of the article and to any particular instructions for its use) a label giving notice that the contents of the bottle are not to be taken internally. We may observe that the word "homologues" is retained, although, as we have pointed out, there is some doubt as to its exact meaning in this case, and, moreover, there are homologues of phenol which are non-poisonous. We believe that since this Order came into operation last September the number of cases of self-poisoning by means of carbolic acid has sensibly diminished. The total number of cases of self-poisoning by all agencies is, however, maintained, hydrochloric acid or common spirits of salts appearing to have supplanted carbolic acid as the most usual. We should not be surprised if this mineral acid has next to be placed under the same restrictions as carbolic acid as to its sale and keeping.

PROFESSOR SKLIFOSSOVSKY presided on Friday last, Jan. 11th, over a Surgical Congress at Moscow, at which many prominent Russian medical men were present.

PROFESSOR SKLIFOSSOVSKY.

A ROYAL Commission has been appointed to make investigations respecting the beer-poisoning epidemic. The Commissioners are Lord Kelvin, Sir W. Hart Dyke, Sir W. S. Church (President of the Royal College of Physicians of London), Professor T. E. Thorpe (Government Analyst), Mr. H. Cosmo Bonsor, and Dr. B. A. Whitelegge (H.M. Chief Inspector of Factories). Dr. G. S. Buchanan, one of the medical inspectors of the Local Government Board, is the secretary to the Commission. The instructions to the Commissioners are to ascertain with respect to England and Wales: 1. The amount of recent exceptional sickness and death attributable to poisoning by arsenic. 2. Whether such exceptional sickness and death have been due to arsenic in beer or in other articles of food or drink, and, if so, (*a*) to what extent; (*b*) by what ingredients or in what manner the arsenic was conveyed; and (*c*) in what way any such ingredients became arsenicated. 3. If it is found that exceptional sickness and death have been due to arsenic in beer or in other articles of food or drink, by what safeguards the introduction of arsenic therein can be prevented.

AN interesting series of articles from the pen of Mr. Bertram Wilson has appeared in *Young Oxford*, a magazine "of constructive thought and devoted to the Ruskin Hall movement." The articles are freely illustrated, chiefly with types of the victims of lead-poisoning. Mr. Bertram Wilson enters a forcible argument in favour of the abolition of raw lead in pottery making. Reference is made to those firms now producing leadless-glazed ware, specimens of which experts pronounce to be equal in beauty and finish to the old lead-glazed ware. A selection of these may be seen at Messrs. Mortlock's, Limited, 466, Oxford-street, and at Jermyn street Museum.

SIR CHRISTOPHER NIXON, President of the Royal College of Physicians of Ireland, will entertain His Excellency the Lord Lieutenant and the Chief Secretary for Ireland, with the Fellows of the College and many distinguished guests, at a banquet on Jan. 26th, to be held in the College hall.

AT an inquest at Manchester on Wednesday last some evidence was given which may throw a strong light on the beer poisoning epidemic. It was admitted by a witness, the representative of a firm of vitriol makers, that owing to pressure of orders for pure or "brimstone acid" his firm had discontinued the supply of sulphur-derived, or arsenic-free acid to a firm of glucose makers and sent in its place "stone" acid containing the common impurities arising from the burning of pyrites. The witness could not remember whether the change was notified to the clients of his firm.

IN recognition of services rendered in connexion with the recent military operations in Ashanti the Queen has appointed Mr. Donald Keith McDowell, principal medical officer of the West African Frontier Force on the Niger, lately serving as principal medical officer of the Ashanti Field Force, to be a Companion of the Most Distinguished Order of St. Michael and St. George.

THE annual dinner of the West London Medico-Chirurgical Society will be held at Frascati's Restaurant, Oxford-street, on Wednesday evening, Feb. 13th, at 7 for 7.30 P.M. Communications should be made to Dr. G. P. Shuter, Oaklands, Chiswick-lane, W.

THE Lord President of the Council, in the exercise of his powers under the Charter of the University of Wales, has appointed Dr. Isambard Owen to be a life member of the University Court, in succession to the late Marquis of Bute.

THE new medical training home of the Church Missionary Society in Tanner-street, Borough, will be opened on Jan. 21st, at 3 P.M., by the Countess of Chichester.

SIR JAMES SAWYER has been elected a Fellow of the Society of Antiquaries.

REFLECTIONS ON THERAPEUTICS.

BY HARRY CAMPBELL, M.D., B.S., F.R.C.P. LOND.,
PHYSICIAN TO THE NORTH-WEST LONDON HOSPITAL AND TO THE WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM.

III.[1]

HABIT VIEWED FROM THE THERAPEUTIC STANDPOINT.

Periodic habits.—Bodily processes, especially those occurring in the nervous system, tend by repetition to recur more and more easily, and when by frequent repetition considerable facility has been attained we say a habit has been formed. Habits as popularly understood consist for the most part of acts which, voluntarily or semi-voluntarily initiated, tend by constant iteration to recur with little or no volition. Such are nail-biting, sniffing, blinking, jerking of the head and kindred movements (habit spasms), eating fast, or getting up early or late. Habits may also be formed quite independently of mental processes. If, for instance, a cardiac intermission is started from any cause the heart may, by mere repetition of the process, get into the habit of intermitting, and continue to intermit, after the original cause has been removed; in like manner the whoop of whooping-cough may persist for some time after complete recovery from the disease; similarly, the bladder may acquire the habit of spontaneously emptying itself during sleep; or again, the repeated iteration of a neuralgic seizure may lead to a spontaneous occurrence of the attacks after the removal of the exciting cause.

Now, inasmuch as some habits are injurious to health, or objectionable for other reasons, while others are favourable to health, the physician has to reckon with them as factors in therapeutics. Manifestly he will seek to break his patients of injurious habits and to inculcate such as are beneficial, and in this way the force of habit may be directed to therapeutic ends with the best results. But while habits which tend to promote health cannot be too assiduously cultivated, one must be on one's guard against

[1] No. II. was published in THE LANCET of Jan. 12th, 1901, p. 122.

becoming the slave of any habit. With increasing years habits grow on us, the protoplasm losing its plasticity and becoming more "set," as it were. This is a senile change, and we should all seek to ward off the disabilities of age and to retain our plasticity as long as possible. But even before the advent of senility, a person may, if he is not watchful over himself, get to be such a creature of habit, so bound down by routine, as to be little more than a machine; for it is to be noted that the more stereotyped a man's actions, the more limited is his sphere of activity and the less volitional is he—the more closely, in short, does he approximate to the instinct-led, machine-like brutes.[2] Moreover, there are grave inconveniences attaching to deeply-rooted, imperious habits. If an individual is only able to eat particular kinds of food, at particular times, and cooked in a particular way, he may be upset, "thrown out of gear," as he would say, when he finds himself so placed that he cannot secure all these three conditions to his liking. Sir James Paget, who, in his "Studies from Old Case Books," strongly insists upon the inadvisability of becoming the victims of habit, goes so far as to assert that a person should not get into the habit of sleeping always on one side or of going to stool at a regular hour. No doubt there is much soundness in this advice, which, generalised, amounts to this: keep as plastic and adaptable as you can; do not allow yourself to be over-mastered by habit. At the same time, his position is probably somewhat extreme, only a few fortunate individuals being capable of following out his advice as fully as he was himself able. Doubtless, however, it should be carried out as far as is consistent with health; and if only for the moral effect of the self-denial and as an exercise in self-control, it is a good plan to abandon for a time habits such as smoking, tea-drinking, and the like. "I believe," says Ruskin in a passage which I came across the other day, in which he alludes to the asceticism of the early Christian centuries, "no reasonable person will wish, and no honest person dare to deny, the benefits he has occasionally felt *both in mind and body* [the italics are mine] during periods of accidental privation from luxury and exposure to danger."[3]

Habituation to circumstances.—So far I have been considering only the habits which pertain essentially to the nervous system and are periodic in nature. But "habit" is wider in its scope than these. The animal organism possesses the property of becoming adaptively modified, or "habituated," as we say, to circumstances, and this property also has to be reckoned with in treatment. By virtue of it structure and function may be profoundly modified,[4] so as to enable the organism to work in harmony with the influences brought to bear upon it. In this way it is that man becomes adaptively modified by the conditions of his life—by food, climate, occupation, and so forth. These conditions may be such as to cause actual disease when first encountered, but by virtue of his adaptability he becomes gradually moulded by them, reacting to them ever more and more harmoniously, until at length perfect harmony may be attained, when we say that he is perfectly adapted, or habituated, to his environment. On the other hand, the environment may be of a kind to which the organism, human or other, can never completely adapt itself; but even so, it always strives to, and with varying degrees of success—from almost complete failure to perfect success. When perfect adaptation cannot by any possibility be attained we must regard the environment as necessarily morbid. Note this, however, that some adaptation tends to occur even to unmistakeably morbid conditions,[5] their morbidity lessening; and, further, that even when the morbidity seems to have entirely disappeared, some hidden morbid action may still be going on. Of this I shall presently give examples.

Instances of complete adaptation.—Acclimatisation, or habituation to a particular climate, may be complete—i.e., a climate which at first causes ill-health may gradually cease to do so. It is popularly held that a person's native air is the one best suited to him, and if it be so we may explain the fact by reference to early acclimatisation. It is a matter of common observation that people get accustomed to different kinds of food. Every nation has its own national diet, and when a person of one nationality takes to the food of another, he is at first apt to be upset by it, afterwards, however, experiencing no discomfort. It has recently been found that the composition of the digestive juices is greatly influenced by the kind of diet taken, each diet exciting just that particular kind of secretion which is best adapted to its digestion. In this way the glands acquire habits of secretion, so that when a long-accustomed diet is changed it may be some time before the glands can learn to pour out the appropriate secretion. Those who are in the habit of eating bulky food containing an abundance of fibrous, indigestible material get acute indigestion if fed on refined foods, the alimentary tract no longer being adequately stimulated by food sufficiently coarse and bulky. The contrary is equally true. Again, a person accustomed to an active out-door life is sure to suffer in health if he suddenly changes this mode of life for a sedentary one; and, on the other hand, one who leads a sedentary life may become so adapted to it that a very active life would do him more harm than good.

Partial adaptation to a morbid environment.—Let us now consider those cases where partial adaptation to a necessarily morbid environment takes place. Tobacco-smoking affords a good instance. An amount of smoking which in the beginner causes alarming collapse can be borne by the *habitué* without apparent harm—perhaps without any harm at all; but the fact that such serious effects are produced in the beginner by very small quantities of tobacco suggests that tobacco-smoking in any but the smallest quantities is necessarily poisonous, and that though the poisonous action is diminished by habituation, it never quite disappears; and experience seems to show that tobacco in larger quantities is always injurious, though the evil effects may be unperceived. The same is probably true of alcohol. Some contend that even small quantities act injuriously—certainly large amounts do; nevertheless the individual can to some extent adapt himself to pernicious doses. An amount which in the beginner produces mental obfuscation, i.e., a decidedly morbid effect, in the *habitué* produces no such result—a circumstance which may be taken to indicate that the agent is no longer morbid to him, or, though still morbid, that it is so in a less degree; but whatever may be thought of the effect of small quantities, it is quite certain that alcohol in large amounts does actually produce evil effects, though these may not be recognised. In a like manner a person may habituate himself to eat with comparatively little inconvenience an amount of food which, without such gradual habituation, it would be impossible for him to eat, the morbid effects, though still persisting, becoming less and less obtrusive. Let me repeat, then, that habituation may conceal the evil effects of a nocuous agent and that we must not too hastily assume that because no evil effect is perceived therefore none is taking place.

The fact that partial adaptation to a morbid agent may occur suggests a further thought. It may so happen that an individual has become so far adapted to a nocuous agent, his entire system so grown to and modified by it, that more evil may accrue from suddenly removing him from its influence than from allowing him to remain under it. Thus an elderly man with a feeble heart, accustomed for many years to generous living, may be made worse by sudden deprivation of the morbid agents—by depriving him of all alcohol and putting him upon a bland diet. We must beware, in short, of the harm which may result from suddenly altering the patient's conditions of life even though those conditions are in themselves injurious, and the older the patient the more should we be bound by this principle. Indeed, for that matter, we should beware of sudden changes of any sort—e.g., from mixed feeding to pure vegetarianism, or from a fattening diet to severe Banting treatment, and the more we keep in view the law of habituation the less likely are we to err in this respect. Nevertheless, in the case of an unmistakeably nocuous agent it is generally advisable to remove the patient from its influence with all possible speed. Even in the case of chronic alcoholism experience shows that the most effective treatment consists in promptly and peremptorily cutting off all alcohol. Again, if a person has been eating too much, we may with safety at once limit the food to a sufficiency, though it may be more politic to reduce the amount gradually.

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[2] See Campbell: "The Differences in the Nervous Organisation of Men and Women."

[3] The Bible of Amiens, iii., The Lion Tamer.

[4] It is needful to distinguish between *adaptation* and *adaptability*. The latter is the power of becoming adapted. It is one of the most remarkable attributes of living organisms, one, as I have shown elsewhere, that has slowly and laboriously evolved. See "The Differences in the Nervous Organisation of Men and Women."

[5] See Campbell: "The Physiological Aspects of Disease," St. Bartholomew's Hospital Reports, 1895.

I will conclude my remarks on habit by quoting some observations of Sir Samuel Wilks. That physician is reported to have said to an interviewer: "Habit is a great deal; it is second nature. A man accustomed to walk 12 miles a day cannot do without it. Every one has a natural temperament. Follow that and avoid excesses. That's all. A quack may tell you you must eat an ounce of albumen, so much starch, so much water, and so on, and what should you do? Go and have a nice chop. The instincts of the people are right. And what about exercise? Jenner would have said to you, 'I never walk at all, except from my house into my carriage. I hate walking and if I could I would get my servants to carry me to bed.' That was Sir William Jenner, the Queen's eminent physician. In the last three or four centuries we have done better intellectual work than ever before, and these have been the times of tea, coffee, tobacco, and alcohol. What can you make of that? Again I say, follow your instincts."[6]

No doubt there is much wisdom in these words, but they must not be interpreted too literally; they must merely be taken as a protest against a too fussy interference with a man's habits and instincts. Nothing is more certain than that inclination often leads a man astray.

THE WAR IN SOUTH AFRICA.

NOTWITHSTANDING that the Boers are displaying great activity at the present time, that their forces, split up into numerous *quasi*-independent bodies, are carrying on their operations in numerous directions extending over a wide geographical area and that they are boldly making raiding incursions in the direction of Cape Town, the news is not, on the whole, unfavourable. If, on the one hand, the anticipations of military optimists have not been realised, on the other hand, it must be borne in mind that what many people regard as unsatisfactory or of serious import in the present position is, after all, of a temporary nature, that the political danger which was feared—viz., that the Dutch population of Cape Colony would rise in favour of the Boers—has not been realised, and that of the many recent attacks upon our lines of communication none have really been successful. It is the vast extent of the country over which the operations have to be extended that makes them so difficult and embarrassing. The systematic pursuit of a definite plan of action, the disposition of the British forces, and even the character of the fighting have now to be adapted to the altered conditions brought about by roving bands of raiders and filibusters. A very large addition to our mounted forces in South Africa is no doubt necessary and will be made. Still, the actual news from South Africa does not seem to justify the pessimistic tone in which some people indulge. Raiding on an extensive scale on the part of the Boers will be a source of much trouble to Lord Kitchener and may prolong the war, but this system of warfare was to be expected on their part and it cannot undo what has been already accomplished or affect the final issue. Be all this as it may, however, the prolongation of the war necessarily carries with it increased sickness and loss of life from wounds and disease, and especially from the latter. The lists of those returned as dangerously ill are long and, for the most part, made up of cases of enteric fever

According to the latest reports from Lieutenant-Colonel Sloggett, R.A.M.C., commandant of the Yeomanry hospital, there were 25 officers and 505 non-commissioned officers and men at Deelfontein on Dec 24th last, including Lieutenant de Wet (nephew of General de Wet), who was suffering from a severe gunshot wound of the knee. Colonel Sloggett reports that he regrets to say that enteric fever is increasing and that there are several serious cases under treatment in the hospital.

Surgeon-Major Kilkelly of the Grenadier Guards, commandant of the hospital at Pretoria, reported on Dec. 20th that there remained under treatment 40 officers and 389 non-commissioned officers and men. Enteric fever was still prevalent in the vicinity. Of the 223 recent admissions 93 were members of General Clements's force from Reitfontein. Surgeon-Major Kilkelly mentioned that since the hospital was opened on August 18th, 201 officers and 1713 non-commissioned officers and men had been treated by this section of the Imperial Yeomanry hospitals, making a total of 1914 patients. Captain Turner, principal medical officer of the Imperial Yeomanry Branch Hospital at M'Kenzie's Farm, Maitland, stated that on Dec. 21st there remained in that hospital 51 patients, of whom 43 were yeomen, two being officers. He had just been enabled to erect two new huts for additional patients.

[6] Sir Samuel Wilks informs me that though the above is by no means a strictly accurate account of what he actually did say (and that altogether informally) he agrees with the general drift of the remarks

THE MEDICAL PROFESSION AND THE WORKING MAN.[1]

THE following has been addressed by "A Birmingham Consultant" to the working-men of Birmingham. It is an open letter dealing with their relations to the medical profession and having special reference to the recent experiment of the so-called "Consultative Institute." We reproduce it in our columns because we consider it to be an excellent exposition of the mutual position that the practitioner, whether consultant or general, should occupy towards that enormous and enormously important section of his *clientèle*—the working-man.

DEAR SIRS,—As a member of the profession which has incontestably proved itself for some centuries now to be your friend, and, indeed, the friend of all classes of suffering humanity, irrespective of purse or of anything but genuine need (we are not friends to humbug), I claim a generous and sympathetic hearing from you as I try to explain some of the points now at issue between the medical profession, yourselves, and some of the leaders of the Hospital Saturday movement. In doing this I would ask you to remember that we, who consistently give a great portion of our lives to your service and who, if we finally get well-to-do, obtain this competence chiefly out of the pockets of the rich and not out of the pockets of the poor, are at least quite as deserving of consideration and respect as those employers of labour (estimable men though they be) who begin to make big fortunes from their youth up and this directly by the employment of your labour.

1. From your letters you are evidently dissatisfied with the general practitioner, or, as you rather rudely term him, the "G.P." Will you allow me to tell you that you are largely responsible for this? When provident societies and clubs were first started he was perhaps too generously glad to help you, and between you both you have compounded a system for which you are supposed to obtain good medical attendance and medicine at one penny a week or even less than this. Of course you do not obtain it. You cannot obtain it except in isolated instances. The penny fee does not amount to a living wage for the poor practitioner you employ, and the utmost you can expect from him as he tries to see his 70 or 80 patients in the day is a kind word and a bottle of something which shall not injure you. He himself, if I understand him aright, will not take grave exception to my description of your relations, and ready and anxious though he be for opportunities of better work, will acknowledge that he cannot give this, and that you and circumstance are making his work shoddy and his life a burden.

2. Having succeeded in manufacturing a cheap and shoddy method of attendance at your homes you are now dissatisfied. You find, perhaps, that diseases are neglected and complaints overlooked. What is the remedy? Your wise and clever counsellors proceed to try and make for you a cheap and shoddy consultant, or what they call a consultant. In the present instance they choose a young man who has passed the examinations in Dublin successfully but who has never held any hospital appointment, and, so far as we know, has not done any original work. He comes to the City without any facilities for higher and scientific work, and is necessarily cut off by his own action from all the best avenues of professional education and enterprise. The authoritative declaration by the General Medical Council that his position is unprofessional now absolutely marks and, for the present, fixes this isolation. He is labelled a consultant by the wiseacres who exploit him, but of course he is not one. Even if he was just the stuff from which in course of time a true consultant might be developed the very terms of his employment would militate against this development. He is not his own master. As the hired servant of his committee every day is portioned out for him by them for the convenience of the public, and if, as his masters hope, the work become more than self-supporting, a dreary round of toil ensues which is fatal to all progress. Crushed between the upper and the nether millstones of his committee and his public he cannot well be anything but passive to the grinding, until every trace of originality and independence is finally destroyed in him.

3. How, then, is a true consultant made? The leaders in their profession are always those who have voluntarily made the task of money-getting subservient to the study of disease. Only a portion of this study is involved in the actual seeing of patients, the study which is of quite as great or greater importance to the consultant's progress is that which he undertakes, without any immediate fee or reward, in the post-mortem room, in the laboratory, in the operating theatre, in the museum, at the meetings of learned societies, and in his own study. For this strenuous life, devoted to the mastering of his profession, a delicate and careful apportioning of time is needed, a division of his day proportionate both to the strength and needs of the master. The consultant must emphatically be his own master. When he sees before

[1] Published by Cornish Brothers, 37, New-street, Birmingham, 1900. 1*d*.

him a new problem needing elucidation or some promising opening for special work he should be free at once to narrow down his energies to the special object needing them. If his chamber practice be too exacting he must be at liberty by raising his fees to lessen his work in this direction. If he require to visit other cities either at home or abroad he and his patients must be content to accept a temporary loss until the work is carried through. Whatever engagements he undertakes he will undoubtedly keep, but these should be voluntary and consistent with that utter devotion to his profession which should be the mainspring of his life.

I am drawing no ideal picture. What I have been describing is, indeed, the actual life of some of the best consultants personally known to me in Birmingham—consultants who, though charging good fees from those who are able to pay them, are not making large incomes but spending much, if not most, of their time in original work and teaching, increasing their own knowledge and that of the profession generally in the special field of medicine or surgery which is their present study, and so acquiring a solid reputation among their brethren.

4. Are such consultants inapproachable by any but wealthy patients? By no means. The very poorest can see them at the hospitals, and those less badly off but unable to pay the usual fee can always, directly or indirectly, ask for special consideration. This when really deserved is, in my experience, always granted. But a man of this stamp (and anyone lower than this in aim and work can only be a bogus consultant) will not be dictated to. He will not be made to see Mr. Jones or Mr. Smith against his will, or be made to see 30 patients and receive 30 half-guinea fees during the course of the day to the exclusion of all other work and impairment of his ideal. However much you may seek after it and try for it you will never make such a man see an indefinite number of you at half-a-guinea a time without "by your leave" or explanation. Understand this, realise it well, and you will never again make the mistake of supposing that you can hire a real consultant and exploit him at your will.

5. But you may ask me, "What then should we do to improve our relations with the medical profession and to obtain better advice and attendance not only for ourselves but for all self-respecting families with little incomes?" Let me tell you. First, as regards those of you who are provident and belong to medical clubs and sick societies. We shall want that half-a-guinea you think of throwing away at the so-called Consultative Institute—which is, after all, only the office or room of a very expensive general practitioner—and by help of it you may do a very great deal. Band yourselves together to alter your club rules, or if you cannot do this, start fresh clubs for medical attendance and let half-a-guinea a year be your regular insurance premium to your doctor. For this you may expect and obtain that care and consideration which your illness may demand. If only your financial relations with him are reasonable and right so that he can afford to give you time and trouble you will find that the general practitioner is much more worthy of your warm appreciation and a much more able guide than at present you have any conception of. Never in the whole history of the profession was the education for it made so stringent, so protracted, and so costly. No other profession is really so expensive and so onerous in its demands, and the qualified practitioner who has successfully passed his examinations is usually far above the average man both in general intelligence and in special knowledge. He may not and will not know everything—you must not expect this—but if you do not degrade him as your slave you may look up to him as your friend. When you want the services of a consultant or specialist, and are unable to pay the usual fees, speak to this friend who knows your circumstances, and he will speak for you to the consultant.

But one difficulty lies in the path of the general practitioner and yourselves when arranging for a consultation—a difficulty that has never been fairly met by those who insure against ordinary medical attendance. The consultation is a very disturbing element in general practice. It upsets the order of the day, and by interference with the general course of work costs the practitioner a very considerable amount of extra trouble. If the practitioner then is to welcome the consultation, he must be adequately recompensed for the accompanying trouble. How is this to be done? I think a portion of the half-guinea (perhaps the sixpence will be sufficient) should be set aside for this purpose, and from the small fund accruing a fee of four or five shillings should be available to be paid directly to the practitioner for every consultation. In this way the requirements of the practitioner might possibly be met without any further call on the resources of the patient other than that necessitated by the consultant's fee.

Secondly, as regards those who do not insure against illness, but are only able to pay very moderate fees for attendance. One of your great difficulties—perhaps your chief difficulty—is the danger of a doctor's bill for prolonged attendance and medicine, and you would rather when you consult a doctor pay a somewhat larger fee and have your prescription or advice, than be given a bottle of medicine and told to attend indefinitely. Well, then, say so when you consult your doctor, and I have no doubt he will oblige you. There are some general practitioners who specially cultivate this kind of practice. In the treatment of diseases of special organs there are also specialists who may be consulted at a fee of one guinea or half a guinea, but every practitioner, without exception, will receive a request for such attendance with every consideration and respect, and unless he sees grave reason against it (as in acute disease requiring careful watching) will willingly accede to the patient's desire. Even in these cases of acute and severe illness among those who are poorly off, the practitioner is usually willing to receive some system of weekly payment, so as to avoid the necessity of a long and heavy account.

6. I have dealt rather extensively with the difficulties of the patient and general practitioner, because these lie at the root of all the other difficulties between the patient and consultant. Set these initial difficulties right and no genuine sufferer need go unrelieved if relief be anywhere attainable. The natural channel of communication between the patient and the consultant is the medical attendant or general practitioner, and no other is so right or fitting. Therefore, see to it that this channel is pure and effective. See to it that your doctor is not the overtasked slave of a medical aid association, but your independent adviser, who is properly and justly paid a reasonable fee for his services.

And when you need a consultant, if your doctor refuses to advise you, inquire for the physician, or surgeon, or specialist whose hospital work in your city is both well known and honourable, and do not be misled by the lax morality of the open market which booms the shoddy garment and the quack medicine, and now is even attempting to invade professional life with unhallowed advertisement.

Birmingham, Dec. 15th, 1900.

Birmingham is a shrewd city and an important centre of thought. The Birmingham working-man ought to be brought to see that it is to his direct advantage to pay those whom Mr. Arthur Chamberlain calls "street doctors" properly. For in this way he will have a ready help in need as well as a medium through whom he can obtain the services of genuine consultant medical men upon such terms as his means warrant.

SCOTTISH POOR-LAW MEDICAL OFFICERS' ASSOCIATION.

THE following is the annual report of this association which has just been presented by the officers:—

During the past year the committee met nine times, the average attendance being eight members.

The Bill to amend the Local Government (Scotland) Act was read a first time on April 3rd. Several attempts to get a second reading were made but, unfortunately, without success. Alexander Cross, Esq., M.P., will again introduce the Bill on the assembling of Parliament. Would each individual member of the Poor-law medical service approach his Member of Parliament, personally or by letter, asking him to give our Bill his support and, if possible, assist Mr. Cross in the ballot? Petitions in favour of our Bill were presented to Parliament by the Aberdeen, Border Counties, Dundee, Edinburgh, Glasgow, Perth, and Stirling branches of the British Medical Association, also by the Glasgow Medico-Chirurgical, Glasgow Southern, and Glasgow Eastern Medical Societies.

A voluminous correspondence has been carried on during the past year with several parochial medical officers in the highlands and islands emphasising their special grievances (official residences, payment of locum tenens, &c.). Your committee after careful consideration could only come to the conclusion that while those special grievances were *real and clamant*, it was impossible to bring them before parish councils with any hope of success so long as medical officers were liable to dismissal without any cause being assigned, but that those grievances would require to wait until a more secure tenure of office was secured. Your committee regret that this finding has *not* given universal satisfaction to our friends in the highlands and islands.

In response to inquiries from a number of members in various parts of the country, the question of fees for lunacy and vaccination defaulters was brought prominently before the committee. From inquiries made it appears the utmost variety exists in regard to payment of fees under the Lunacy and Vaccination Acts. Each parish council appears to be a law unto itself, notwithstanding the regulations of the Local Government Board, which are very precise and distinct. Thus, in the rules issued in 1897, on page 108, it is distinctly stated that the fees under the Lunacy Act are *not* to be included in the salary of the medical officer under the Poor-law Act. And also on page 175 it is distinctly stated that the remuneration for vaccination shall be by fees for every child the medical officer may have visited for the purpose of vaccination. Now, what do we find?

LUNACY.

1. We believe some parish councils, acting on the instruction for their guidance, pay a fee of 21*s.* for every certificate of lunacy.
2. Some parish councils *pay no fee* for lunacy certificates belonging to their own parish, but pay a fee of 21*s.* for each lunacy certificate belonging to another parish.
3. Some parish councils *pay no fee* for lunacy certificates belonging to their own parish and *no fee* for lunacy certificates belonging to other parishes, but in making up their accounts against other parishes *always charge a fee of 21s.* for each lunacy certificate.

VACCINATION.

1. We believe some parish councils pay no fees for vaccination and may or may not grant their medical officer a lump sum.
2. Some parish councils pay only for those cases successfully vaccinated by the medical officer instead of paying for every case in the list furnished by the inspector whether the case has been previously vaccinated, unfit for vaccination, not found, or dead.
2. Some parish councils, acting up to the regulations, pay for every case on the list furnished by the inspector.

Your committee think that the attention of the Local Government Board ought to be called to those flagrant deviations from their official rules for the guidance of parish councils.

Dr. GILBERT CAMPBELL, 14, Hamilton Crescent, Partick, Chairman.
Dr. MATTHEW MARTIN, 737, Gallowgate, Glasgow, Treasurer.
Dr. W. L. MUIR, 1, Seton Terrace, Glasgow, Secretary.

Glasgow, January, 1901.

BRISTOL DISPENSARY.— The annual report of the Bristol Dispensary for 1900, which has just been issued, states that 10,060 patients were treated during the year and that medical assistance was also given in 24 difficult midwifery cases. The committee add that the branch of the dispensary at Bedminster is much appreciated and that the number of patients attended is larger than in the preceding year. The financial statement shows that the number of subscriptions has declined during the past year.

HISTORY OF THE HOUSING QUESTION IN LONDON.

PART II.[1]

UNDER THE COUNTY COUNCIL.

IT was not, as we have seen, till 1889 that London at last possessed a municipality. It is true that instead of being called the Municipal Council of London it is denominated the County Council, and that instead of having its headquarters in the City the very heart of the metropolis has been subtracted from the metropolitan jurisdiction and still continues to govern itself as if it were a separate town. This is one of those many anomalies in which the British nation seems to take special delight and helps to confirm the opinion, widely entertained on the continent, that all Englishmen are more or less eccentric. This is not, however, the time or place to discuss whether the City should have been included as one of the constituencies of the London County Council. It is more to the present purpose to note that the County Council had no sooner been elected than it began to study what amendments were required to render the Acts on the housing question more effective, and it was able to make representations on the subject by the end of the first year. This was promptly followed by legislation, and we had the Housing of the Working Classes Act of 1890, so it cannot be said that much time was lost, at least at this stage of the proceeding. It would take much space to explain all the bearings of this Act. Divided into seven parts, the first three parts apply especially to London and the remainder to the provinces and to Scotland. Part I. constituted the County Council as the only authority for carrying out Cross's Acts of 1875, 1879, and 1882, which were consolidated and amended and which deal with large areas. Of great practical importance was the creation of the post of medical officer of health to the County Council, thus bringing into existence a superior and supervising sanitary authority who is independent of the local vestries or district boards, now replaced by the new borough councils. Thus, if the smaller local authorities fail to act the medical officer of the County Council can intervene, and the County Council can carry out a scheme where the local body fails. Then it is stipulated in Part I. of the Act of 1890 that the compensation paid to the expropriated proprietors of condemned houses shall "be based on the rental which would have been obtainable if the house or premises were occupied for legal purposes and only by the number of persons whom the house or premises were, under all the circumstances of the case, fitted to accommodate without such overcrowding as is dangerous or injurious to the health of the inmates." Further, if the house was in such a condition as to create a nuisance the likely cost of doing away with such nuisance and putting the house in proper repair is to be deducted from the estimated value of the premises. Finally, if the house is in such an utterly dilapidated condition that it would be impossible to render it fit for habitation then the owner is only to be compensated for the value of the land and of the materials on it.

With such stipulations it should be possible to reduce the compensation to be given to reasonable proportions. But property acquired under this Part I. of the Act has to be re-sold within ten years unless the Secretary of State shall otherwise decide. Part II. of the Act has for purpose to consolidate and amend Torrens's Acts of 1868 and 1882. The Local Government Board and the Secretary of State are to supervise and confirm schemes carried out under this part of the Act. It deals with individual dwellings and obstructive buildings rather than with large areas. Both district authorities and the County Council may take action and they may close a house as unfit for habitation. If this does not suffice they may, having obtained a magistrate's order, proceed to demolish the house. A house that merely obstructs ventilation may also be removed, and in that case the owner may, if he chooses, retain the land, but then he is only compensated for the building. The Local Government Board decides what provision, if any, must be made for re-housing the persons disturbed, but the question of re-housing is not so urgent, as this part of the Act can only be applied to a few houses. The rules in regard to compensation are the same as under Part I., excepting that deductions may be made if the improvements to be effected increase the value of other property held by the same owner. Under Part II., as under Part I., the land acquired must be sold within ten years unless otherwise decided by the Secretary of State; and he also determines what proportion of the cost shall be paid by the local authority and what by the County Council. To carry out such schemes the County Council has borrowing powers and may lend borrowed money to the district authority.

We now come to the much-discussed Part III., which seeks to amend and consolidate the Labouring Classes Lodging Houses Acts of 1851 to 1867. It first extends the meaning of the terms used so as to include a cottage with a garden of not more than half an acre, if the ground value does not exceed £3 per annum. Power is given for compulsory purchase of land, for the erection of lodging-houses, for fitting and furnishing the same, but the scheme for such purchase must be made public and the petitions in favour and against it submitted to the Secretary of State who may dismiss them or order further inquiries to be made. Then a provisional order sanctioning the compulsory acquisition of the lands may be issued, but it must be served on all concerned and confirmed by an Act of Parliament. If sanctioned the compensation to be paid is settled according to the Lands Clauses Consolidation Acts of 1845, 1860, 1869, and the special clauses of Parts I. and II. of the present Act. But the most salient feature of Part III. is that it confers no power to sell or lease the land purchased under this part of the Act; therefore, the Council was itself obliged to erect, manage, and let the lodgings or tenements to be built on the land. The land could only be sold when other land better suited for the purpose could be purchased with the price realised. Further, if lodging-houses have been open for seven years or more and have become unnecessary or too expensive they may be sold if the Secretary of State approves. The borrowing powers are the same as under Part I. and various kinds of corporations, trusts, &c., may borrow and various public bodies may lend money for the erection of working-class dwellings. On paper this Act, and especially Part III., gives promise of prompt reform; in practice its application has been found cumbersome and expensive. It is the question of compensation which, in spite of amendments and modifications, continues to occasion wearisome, prolonged, and expensive litigation.

The next legislative enactment was the Public Health (London) Act of 1891, giving effect to many of the recommendations made by the Royal Commission of 1884. It emphasises the duty of the district authorities to inspect and abate nuisances and to prevent overcrowding. Provision is made for petty sessional courts to deal summarily with such cases by means of prohibition and closing orders; and where two convictions for overcrowding have occurred within three months the court may order the house to be closed for such time as it may deem necessary. The borough councils must now fix what number of persons may occupy each room in a house let in lodgings or occupied by the members of more than one family, and must provide for the separation of the sexes, for the registration of houses so let or occupied, for the inspection of such houses, for their proper drainage, cleanliness, and ventilation, for the cleansing and lime-washing at stated intervals, and for the taking of proper precautions in case of any infectious disease. If the borough councils fail to carry out these regulations the County Council may take action, and the expenses of such action may be recovered by the County Council from the borough council which has neglected its duty. Or, again, the County Council may complain to the Local Government Board if a borough council is neglectful and the Local Government Board may by writ of mandamus force the borough council to take the necessary measures. Here again, if written laws were of themselves able to alter social and economical conditions, it would be thought that, in the face of such stringent enactments, insanitary dwellings and overcrowding would vanish away as if by magic; and yet all those who are personally acquainted with the conditions under which the London poor live are painfully aware how far we are from attaining any such ideal conditions.

The London Building Acts of 1894 and 1898 regulate the amount of open space that must be provided in all new streets both in front and at the back of the houses and this in proportion to the height of the houses. No house is to be built to a height of more than 80 feet, exclusive of

[1] Part I. was published in THE LANCET of Jan. 12th, 1901, p. 124.

the roof, without a special permission from the County Council, and in streets that are not more than 50 feet wide the houses must not be higher than the width of the street. But though this rule only applies to new thoroughfares it has a retrospective action with respect to working-class dwellings that are built within 20 feet of the centre of any highway. The latter must not exceed in height the width of the street whatever may be the date at which they were built. For streets laid out after 1894 the space behind the houses must have a width of at least half the height of the house. If it is a working-class dwelling this space behind may not be covered up; for other houses it may be covered to the height of 16 feet only.

In 1894 there was yet another Housing of the Working Classes Act. This was to extend the borrowing powers limited by Part II. of the Act of 1890 to the purchase money or compensation for properties acquired. But there are many other heavy incidental expenses, such as the preparing, sanctioning, and confirming a scheme, costs and fees, the laying out and sewering of new streets, &c., which had to be paid out of the current rates. The new Act sanctioned that these costs should be added to the sum for which borrowing powers were demanded.

Finally, we have the Housing of the Working Classes Act of 1900. The first important feature of this the last law enacted on the subject is that henceforth both the County Council and the borough councils of the metropolis may not only "establish or acquire lodging-houses for the working classes" within their own boundaries but may do so outside the limits of the county or the borough. Combining this with the organisation of cheap tramway or railway services it should be possible to relieve the congestion in central districts by removing a portion of the population to sites beyond the metropolitan area. Of course, this is only a partial solution of the difficulty applicable in some and not in all cases. Nor is the saving in expense so great as it seems at first sight. By removing a section of the population beyond the boundaries we reduce the rate-paying capacity of the inhabitants of the borough or county. While the local authority thus loses some of its financial resources the lodger or workman incurs extra expenses which counterbalance to some extent the economy he may make in paying cheaper rent. First, he has the cost of travelling backwards and forwards to his work—a cost which is as serious in time lost as in the outlay for his railway or tramway ticket. But what is perhaps more serious is the increased cost of food. The worker can no longer go home for his midday meal, and the money he has to pay at an eating-house would suffice, not only for his own food, but that of some members of his family. Then, again, the cost of provisions is generally higher in the outlying suburbs than in the central districts, where there is fiercer competition and more to choose. Nevertheless, for a section of the working-class it will prove an advantage to live beyond the metropolitan boundaries, but not for all.

The Act of 1900 also modified the critical Part III. of the Act of 1890. The County Council may now lease any land acquired under and for the purposes of Part III. if the lessee will undertake to carry out the Act—namely, to build and maintain on the land lodging-houses within the meaning of the Act. But in the lease provisions must be carefully inserted that such building must be kept in good repair, must be utilised exclusively as lodging-houses, and if the character of the buildings is in any way altered without the consent of the County Council then the lease lapses and the council have a right of re-entry. Therefore, the dwellings built on the land purchased under Part III. need no longer be erected and managed by the council, but this may be intrusted to anyone who will undertake to provide lodging-houses according to the conditions laid down. If a council pleads that it is not competent to act as the landlord of a number of poor and dissolute people it has the power by this new Act to lease the land to someone who is competent to do this somewhat unpleasant and rough work.

Of course, all this legislation was brought about in a great measure by the remonstrances which the County Council was induced to make in consequence of the great difficulties it had to encounter. No sooner had the council come into existence than it convoked a conference of all the local authorities to discuss the housing question. The first conclusions arrived at were that in building the council must keep in view what was likely to be the standard of sanitation in the future, so that their houses should not fall below that standard. In the long run it would prove cheaper to build well, but for the moment this would increase the difficulties. A number of regulations were drawn up in regard to the size of the rooms, the width of the stairs, the washhouse accommodation, &c. The staircase should be at least four feet wide, with a dado of hard glazed bricks. Closets should have doors and windows opening directly to the open air. No living room should be less than 144 square feet or bedroom less than 96 square feet, and at least nine feet high, and a dwelling-house should be at a distance of one and a half times the height of the nearest obstructing building. But it was soon found that such regulations involved too great a cost, and the height of the rooms was reduced to 8 feet 6 inches and the width of the stairs to 3 feet 6 inches.

By the time the County Council had been in office one year the number of insanitary areas brought under its notice amounted to 146. By the end of the year communications had been sent by the County Council to the vestries or district boards concerning 58 insanitary areas. About three-fourths of these areas brought to the notice of the County Council have now been improved and many houses have been demolished under Torrens's Acts. For larger areas 12 schemes were prepared by the vestries and district boards and four by the council, all of these under Part I. of the Housing of the Working Classes Act of 1890. But as it was found so very difficult to dispose of the land the council soon concluded it might be more expedient if it sought to fulfil the statutory obligations by itself erecting the dwellings. But to do this it was necessary to regulate the cost of building in accordance with the income likely to accrue. Hence the council passed in March, 1893, what is known as "the 3 per cent. resolution." This resolution laid down the principle that though the rents charged for the dwellings were not to exceed the general price prevailing in the neighbourhood, yet they were to suffice to pay all outgoings, interest, and sinking fund charges. To do this the design and plan of the buildings must be kept down so as not to involve too high a cost. Hence the modifications made as to the size of the rooms, width of staircases, &c., as mentioned above. Under the Treasury regulations the Council must provide a sinking fund that shall repay the capital cost of the land and building within 60 years. A cumulative annuity of 2½ per cent. is provided for this sinking fund and from 2½ to 3 per cent. more has to be paid as interest for the money that is borrowed. Therefore, the dwellings which the Council build must bring in rents enough to pay all cost of management, repairs, taxes, &c., and from 5 to 6 per cent. on the capital outlay to cover interest on borrowed money and provide for the sinking fund or amortisation. But when to meet these liabilities the County Council wanted to reduce the size of the rooms, &c., the Secretary of State objected. In 1894, before these objections were made, the Sonning-buildings, Boundary-street, were designed, with sculleries for the common use of several tenements but a separate w.c. for each tenement, and these are the cheapest buildings the council has erected. In 1897 the Secretary of State, judging from information received and experience acquired, concluded that the most suitable size for a living room was 160 square feet and 110 square feet for a bedroom, but if the tenement consisted of two bedrooms then they might measure 100 and 120 square feet respectively. This was accepted as the standard and rigorously enforced ever since. But other stipulations were also introduced at the same time. Thus an angle of 45 degrees of light has to be provided for all habitable rooms, and the number of persons using a staircase limited according to the size of the staircase. Several plans that had already been accepted had to be altered to meet these new exigencies. All this is admirable from the sanitary point of view, but it adds to the financial difficulties.

There is an anomaly in regard to this supervision of the plans of proposed dwellings. Those that are to be erected under Part I. must be submitted to the Secretary of State, but if action is taken under Part II. of the Act then the Local Government Board is the controlling authority and what may satisfy the one may not be approved by the other. Thus the Local Government Board is more particular in regard to thorough ventilation and rejected on this ground the plans of the East-end Dwelling Company for the buildings it proposed to erect in Ann-street, Poplar. Then in regard to Crawley-building, Brooke Market, Holborn, the closets were condemned as not sufficiently separated from the dwelling rooms. Wire gauze had to be substituted for the windows in the lobbies leading to the closets. Now it is found

that the tenants strive to block these openings by hanging up unsightly rags. Then the Local Government Board objected to staircases rising direct from the kitchen to the bedrooms above in cottages and also protested that the walls were not of sufficient thickness. Open staircases exposed to all weathers found favour with the Local Government Board, but were strongly objected to by the tenants, and a compromise had to be effected by putting windows in the lower part of the opening. Again, the tenants desired self-contained instead of associated tenements, which, of course, cost somewhat dearer. In regard to the size of the rooms the Local Government Board and the Home Office agree to the same standard, but the tenants do not agree and urge that every tenement should have at least one bedroom measuring 120 square feet instead of 110 square feet. On the other hand, the enormous cost of carrying out these schemes compelled the council, in the years 1898 and 1899, to revert to their minimum standard of 144 square feet for living rooms and 96 square feet for bedrooms. Thus does the balance fluctuate, weighted down at one time by sanitary exigencies and at another by financial restrictions. Evidently the key to the solution of the difficulty is to be found in the financial side of the problem.

THE REPORTS OF THE WATER EXAMINER TO THE LOCAL GOVERNMENT BOARD ON THE METROPOLITAN WATER-SUPPLY.

IN an annotation which appeared in THE LANCET some months ago[1] on the monthly reports of the Water Examiner to the Local Government Board it was pointed out that the chemical examinations of the water made by the analyst appointed by the Board were less numerous than the importance of the matter demanded. At that time one examination per month was made of one specimen only of the water supplied by each company. We are glad to be able to record the fact that a larger number of specimens are now examined. The Water Examiner to the Local Government Board at length considers it desirable that the number of samples should be increased and that the places from which they are drawn should be more widely distributed over the areas supplied by the individual companies. During the months of August and September, 1900, from 12 to 14 samples of water were taken from the mains of each company. The examination of these samples was, however, confined to the estimation of the amount at two temperatures of oxygen consumed (which is taken as the measure of organic pollution), the amount of albuminoid ammonia (which is taken as the measure of nitrogenous organic pollution), and the degree of turbidity (which is taken as the indication of efficiency of filtration or of "disturbances in the mains"). The usual monthly analyses of one sample of each water supplied by each company has also been supplemented by like determinations as to the oxygen consumed and the amount of albuminoid ammonia present.

We recommend that an examination of the Thames supply of the East London Company be made daily, at any rate during periods at which the Thames is at flood. No arrangements are made at the Thames station of the East London Company for the purification of water by sedimentation. The Thames water which is here filtered is mixed with some well water pumped at the filtering station, and this mixed supply is pumped to one of the reservoirs of the East London Company. This reservoir is also supplied by water from the Lee Bridge works of the company. It is therefore advisable that an examination should be made of the water as it is drawn from the filter-beds of the company at the Thames station. Most of the monthly reports of the Water Examiner state that samples collected at the works of the companies were efficiently filtered, but it is not stated that these results were arrived at by the analyst appointed by the Local Government Board, nor is there any indication that any special attention has been given to a determination of the effects of filtration without previous sedimentation of the Thames water distributed by the East London Company.

During the months of August, September, October, and November the condition of the natural Thames water was good throughout. The flow of the river was, during the greater part of the time, below the average summer level, and the rainfall during the period was small. Dr. T. E. Thorpe, F.R.S., the analyst appointed by the Local Government Board, reported that a sample drawn from the mains of the Lambeth Company during the month of August contained the highest proportion of organic carbon, and that the water supplied by the same company exhibited the deepest average tint of brown. Taking the filtering area of the West Middlesex Company as the normal it may be noted that a corresponding area of the Lambeth Company is little more than half of what it should be; the filtering area per 1,000,000 gallons in the case of the West Middlesex Company is 0·88 acre, that of the Lambeth Company is 0·48 acre. It may also be pointed out that the average rate of filtration is much greater in the case of the Lambeth Company than in that of the West Middlesex Company. The average rate of filtration per square foot per hour in the case of the West Middlesex Company during the month of August was 1·25 gallons and that of the Lambeth Company 2·20 gallons. The reserve capacity of the Lambeth Company also compares very disadvantageously with that of the West Middlesex Company. The capacities of the reservoirs for unfiltered water possessed by the West Middlesex Company are capable of holding a supply sufficient for the wants of the company for 18·5 days, but the capacities of the reservoirs of the Lambeth Company are sufficient only to contain an amount of water for the supply of their customers for five days.

During the month of September Dr. Thorpe examined 96 samples of the water supplied by the various companies, and the result showed that the amount of oxygen consumed was greatest in the case of the Lambeth Company; the Chelsea and Southwark and Vauxhall companies contained the greatest amount of albuminoid ammonia; and the water supplied by the Lambeth Company exhibited the deepest average tint of brown. During the month of October of 14 samples of the Grand Junction Company's water eight were clear and four—which were drawn from a stand-pipe at Shepherd's Bush-green—were distinctly opalescent and contained finely divided oxide of iron which the analyst believed was derived from the mains. The sample taken from the mains of the Grand Junction Company contained the highest proportion of organic carbon; the water of the Lambeth Company exhibited the highest average tint of brown. The Grand Junction Company possesses a smaller relative reservoir capacity than any other company; it is even smaller than that of the Lambeth Company, and is sufficient only to supply the wants of the company for 2·9 days. The Water Examiner points out that the Grand Junction Company has the means during floods of pumping water from the gravel beds adjoining the Thames, and "this is practically equivalent to an addition to their storage reservoirs." There is no statement in the report, however, as to the quantity of water which is in fact derived from the gravel beds, nor is any estimate given as to what amount of reservoir capacity this gravel water is practically equivalent to. These are points it would be interesting to know.

During the month of November the samples of water supplied by the Chelsea, Southwark and Vauxhall, New River, and East London companies were clear and that of the Grand Junction Company was also clear, except a specimen taken from a standpipe at Shepherd's Bush which was turbid. The engineer of the company explained that in his opinion the turbidity was caused by the fact that the standpipe was near to the dead end of a main, and he further stated that the defect had been remedied. It is not stated by what means this was done. The water supplied by the Grand Junction Company again contained the highest proportional amount of organic carbon; the water of the Lambeth Company exhibited the deepest average tint of brown. The amount of organic matter in the supplies of all the Thames companies showed a slight increase over that found during the previous month and the greatest increase was noted in the case of the Grand Junction Company.

The water supplied by the Kent Company during the whole period under review was, as usual, of excellent quality.

[1] THE LANCET, Sept. 8th, 1900, p. 748.

IT has been resolved by the Whitechapel Board of Guardians to convene a conference on the question of overcrowding.

THE BATTLE OF THE CLUBS.

ROTHERHAM DISTRICT.

THE old difficulties between friendly societies and their medical officers are assuming an acute form in the Rotherham district. The medical men concerned gave the clubs notice that after March 1st of the current year the fees for adults and juveniles belonging to friendly societies would be the same—viz., 1*s* 3*d*. per quarter or 5*s*. per annum. Previously the rate for adults had been 4*s*. per annum and for juveniles 2*s*. per annum. In answer to this the secretaries of the different lodges met and it was decided to form a medical aid association so as to be independent of the local medical men. We notice that the *Rotherham Express* states that the circular which was issued convening the meeting of secretaries referred to the extension of assistance to "wives, children, fathers, mothers, nephews, and nieces." Even the *Rotherham Express*, which obviously sides with the friendly societies, admits that this "is enlarging their borders with a vengeance." The present medical officers ground their request upon the well-known facts that their remuneration is upon the same scale as formerly, while against this wages have gone up and the cost of drugs, instruments, and dressings has also increased. Living is more expensive than formerly, while in addition no unqualified assistant may be employed, and the remuneration of qualified men acting as assistants has naturally increased. We do not in the least blame working men for trying to get medical attendance as cheaply as they can, but it is inconsistent of those men who are always agitating for and getting a rise in wages to object so strongly and selfishly to raise the wages of those whom they employ. A miner or an ironfounder undoubtedly works hard, but when he has finished his shift it is finished. Now a medical man's work is never done; for him there is no eight hours' day. At any time of the day or night he is liable to be called upon—it may be for something trivial, it may be for some disease or injury which may be irremediable if not promptly treated. 5*s*. per annum is less than 1½*d*. a week—not a very large sum for a man to spare who is getting good wages, as miners do, and very many of the members of the clubs concerned are miners whose wages have gone up, or will have after February, 60 per cent. in the last 12 years. The only thing to do unless the clubs should give way is for the medical men concerned to organise themselves. How organisation succeeds is very well shown by what happened at Cork and other places, accounts of which will be found in "The Battle of the Clubs" by our Special Commissioner.

CHESTERFIELD DISTRICT.

The club difficulty has also come to a head in the Chesterfield district where the eight medical men attached to a field club have demanded a rise of 1*s*. per member per annum, thus raising the yearly subscription of members from 4*s*. to 5*s*. per annum. At the quarterly meeting of the British United Order of Oddfellows the question came up and a proposal was made that the lodges should affiliate and take united action, but apparently no definite course of action was decided upon.

ASYLUM REPORTS.

Glasgow Parish, Govan and Lanark District Asylum, Kirklands (*Report for the year ending April 30th, 1900*).—The average number of patients resident during the year was 200 and comprised 105 males and 95 females. The admissions during the year amounted to 59—viz., 32 males and 27 females. Of these one male and four female patients were not first admissions. Dr. James H. Skeen, the medical superintendent, states in his report that the admission rate for the year has been higher than it was for the previous two years. The bodily health of those admitted was fairly good, though as usual there were several patients much broken down in health. "Many were suffering from severe illness and one or two from nothing less than brutal ill-usage in their own homes." The mental ailments of those admitted included a large number of cases the chance of recovery of which was practically *nil*, 33 per cent. of the total admissions belonging to this hopeless class. Among the causes of insanity in the admissions alcohol holds the first place, next in order of frequency come brain diseases, childbirth, and nursing and domestic troubles. The number of patients discharged as recovered during the year amounted to 23, or 11·5 per cent. of the average number resident. The proportion of recoveries has not been quite up to the average of the past 19 years. The number of deaths in the year amounted to 11, or 5·5 per cent. of the average number resident, and was one of the lowest numbers on record. Of the deaths one was due to old age, one to abdominal cancer, one to renal disease, one to cerebral hæmorrhage, two were due to epilepsy, and two to pulmonary phthisis. No serious casualty occurred during the year. One patient, a female, while out on probation in the care of her friends escaped after providing herself with male attire. She made her way to Dumbarton and worked there as a baker's lad for three weeks, when her sex was discovered. She then disappeared from there and made her way to Bothwell where she worked as a baker's boy. She was then discovered and taken into the care of philanthropic people and was understood to be doing well. A severe epidemic of influenza visited the institution in the spring of 1900. Luckily its duration was brief, but while it lasted it caused much inconvenience, as upwards of 50 patients and about 20 of the staff were confined to bed at one time. All made good recoveries except one, a female patient, who died. Among the long-felt wants are better sick-room accommodation, a better laundry, and houses for married attendants. There is an urgent need for water-cocks, two in front and two at the back of the building, for use in case of fire. The Commissioners in Lunacy state in their report that the case-books and registers were found to be carefully and correctly kept, and that the wards and dormitories were clean and in good order. The register of restraint and seclusion contained no entry for the year.

London County Asylum, Colney Hatch (*Report for the year ending March 31st, 1900*).—The average number of patients resident during the year was 2543, and comprised 918 males and 1625 females. The admissions during the year amounted to 591 and of these 234 patients were males and 357 were females. Of these 126 (comprising 37 males and 89 females) were not first admissions. Dr. W. J. Seward, the medical superintendent, states in his report that the total number of admissions was 103 in excess of the number in the previous year. Among the admissions were 50 patients suffering from epilepsy and 40 from general paralysis, 35 of the 40 being males. 61 patients were transfers from other asylums and nine were criminal lunatics admitted from prison. As regards the causes of insanity among the patients admitted hereditary tendencies were ascertained to exist in 27 per cent. of the cases, 17 per cent. (among the men 21 per cent.) were known to be of intemperate habits, and 29 per cent. had been under treatment for previous attacks. The number of patients admitted over 70 years of age was 31. Among the patients admitted were 22 boys, and it is pointed out that it would be "very desirable that some special accommodation should be provided for these cases, where they could be kept apart from the adult patients." The number of Jewish patients admitted was 69, the majority of them being Russians or Poles. In the previous year the number of Jewish patients admitted was 86. The number of patients discharged as recovered during the year was 245—viz., 70 males and 175 females, or 9·6 per cent. of the average number resident. "This is the highest recovery-rate of the last five years, and as regards female patients has only been exceeded on one occasion since the opening of the asylum." Of the 119 patients who were discharged unrecovered or removed, 25 were sent to the metropolitan district asylums, 72 were transferred to other asylums, two were removed to workhouses, and 19 were discharged to the care of their friends. The deaths during the year amounted to 240, or 109 males and 131 females, being at the rate of 9·4 per cent., of the average number resident. "This is a slightly higher rate than that of the last few years." Of the deaths four were due to influenza, three to renal disease, four to intestinal obstruction, one to enteric fever, nine to cancer, 10 to pneumonia, 12 to cardiac disease, 15 to colitis, 20 to mania and melancholia, 21 to senile decay, 23 to epilepsy, 23 to pulmonary phthisis, 32 to chronic cerebral disease, and 42 to general paralysis of the insane. Post-mortem examinations were made on 204 bodies. Inquests were held in three cases—viz., on a female patient who sustained an injury to the spine from the fall of the branch of an elm tree and died some months later, on a

male epileptic who died from asphyxia due to the impaction of a plum-stone in the trachea, and on a male patient who was assaulted by a fellow-patient and sustained fractures of several ribs and other injuries. The epidemics included colitis (in which 18 of the cases ended fatally), enteric fever (nine cases, two of which ended fatally), and influenza. The serious prevalence of phthisis and the risk of its spread among the asylum population are recognised, and the expediency of isolating tuberculous patients is pointed out. A profit of £1706 13s. is shown in the accounts of the farm, which is the highest ever recorded in the history of the asylum. Alterations in the wards have been made at a cost of £3025. The expenditure on repairs and alterations amounted to £10,537.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY meeting of the Council of the College was held on Jan. 10th, Sir WILLIAM MAC CORMAC, Bart., K.C.V.O., the President, being in the chair.

The Council elected Mr. George Henry Makins a member of the Court of Examiners.

The Council removed from the list of Members a Member who had been found guilty of disgraceful conduct in a professional respect.

In reply to a request from the Honorary Secretary of the Scottish History and Archæology Committee of the Glasgow International Exhibition the Council left it to the President and the Vice-Presidents to decide as to which of the memorials illustrative of Hunter's life should be lent for the purposes of the exhibition.

A letter was read from the widow of Professor Albert, Honorary F.R.C.S. Eng., of Vienna, thanking the Council for their sympathy with her in the loss of her husband.

The PRESIDENT stated that he had received a letter from Dr. G. Mondan of 27, Rue Jarente, Lyons, stating that a committee had been formed to collect a fund for erecting a public monument to the late Professor Ollier, Honorary F.R.C.S. Eng., and inviting Fellows and Members of the College to subscribe.

A letter was read from the Registrar of the General Medical Council forwarding a copy of the resolutions and new rules in regard to public health diplomas adopted by the Council on Dec. 5th, 1900.—They were referred to the Committee of Management.

A letter was read from Mr. Thomas Bryant reporting the proceedings of the General Medical Council at their late session.—The thanks of the Council were given to Mr. Bryant for his services as the representative of the College on the General Medical Council.

Inasmuch as the Hunterian Oration is to be delivered on Feb. 14th the next meeting of the Council will be held on Feb. 7th.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On the General Sanitary Circumstances of the Stroud Rural and Nailsworth Urban Districts, and on Administration by the respective District Councils, by Dr. F. St. GEORGE MIVART.[1]—Stroud rural district surrounds the town of Stroud in Gloucestershire and comprises a large portion of the Cotswold hills and of the valleys which intersect them, the principal being the Chalford valley, at the mouth of which Stroud is situated. The population is large, somewhere about 30,000, consisting mainly of persons employed at numerous mills which have been established along the streams in this district. These are chiefly woollen and dying mills, dependent on the streams for water-power and for convenient disposal of trade refuse. Dr. Mivart describes the dwellings as usually substantial in structure, but in many places back-to-back houses, or, on the hillsides, "back-to-earth" houses are undesirably common. Action under the Housing of the Working Classes Act seemed needed in certain cases owing to extensive dilapidation and dampness. Notwithstanding the abundance of small streams and springs in the district, pure water-supplies are usually lacking. About one-fifth of the houses in the rural district are served by the Stroud Waterworks Company; elsewhere the supply is obtained, for individual dwellings or for small groups of houses, from wells, springs, and streams. The wells often receive directly the drainage of the surface of polluted soil above them, or for other causes the purity of their water is open to much suspicion. Natural springs, issuing from the lower oolites where these strata rest upon lias, are seldom impounded for local supplies, as they might easily be at trivial cost. On the contrary, they are allowed to run away as streamlets, the water of which is often utilised by villages only after it has been subject to divers opportunities of dangerous pollution. Evidently, as Dr. Mivart indicates, much good could be done by a local authority which would tackle the question of local water-supplies in a business-like spirit. Much greater difficulty attaches to dealing with the question of pollution of streams and rivers hereabouts. Contamination arises partly from sewage of villages, partly from houses on the banks of streams which frequently have closets built out over the water's edge, but mainly from manufacturing refuse. "Speaking generally, contaminating chemical matters are in such large quantity as to completely obscure the presence of sewage matter." So considerable are the accumulations due to manufacturing refuse which take place in the streams that their banks have annually to be "mudded"—that is to say, the mill-owners, individually or in combination, have to cleanse the banks by detaching the accumulated filth—a proceeding which creates a serious nuisance. The mill-owners maintain that unless they can discharge their untreated trade refuse into the water-courses "the closure of their mills would be inevitable." To require the manufacturer to return pure water to the stream might very probably mean imposing on him a heavier burden than he could bear. But that a great deal, short of perfection, can be done at a not ruinous cost, has been shown in Lancashire and Yorkshire in consequence of the action of river boards, and a reasonable minimum of preliminary treatment might, one would imagine, be exacted in Gloucestershire without much hardship. When we read that at every factory visited by Dr. Mivart the privies for workpeople were placed overhanging the streams, it would seem that here, at any rate, manufacturers might have saved themselves ultimate expense by the use of a little foresight. Pollution of this sort can hardly be represented as inevitable. Dr. Mivart notes that it is common in this district for urine to be stored in large tubs in the neighbourhood of dwellings and to sell it to cloth mills where it is used for soaking freshly-made cloth. He points to sundry matters, such as sewage disposal of villages and disposal of house refuse, which appear to be much in need of attention by the local authority. It is interesting to note that a method of disposal of excreta often adopted is to cast such matters into "lissens," or fissures in the Great Oolite strata, a practice sometimes clearly entailing risk to water-supplies. Cow-sheds in Stroud rural district appear to be kept in a particularly unwholesome and uncleanly condition. A variety of insanitary circumstances in the urban district of Nailsworth, which forms, as it were, an island in the Stroud rural district, are also detailed, and Dr. Mivart adds certain administrative recommendations in regard of both sanitary areas.

[1] London: Eyre and Spottiswoode, East Harding-street; Edinburgh: John Menzies and Co.; Dublin: Hodges, Figgis, and Co. Price 9d.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6577 births and 4442 deaths were registered during the week ending Jan. 12th. The annual rate of mortality in these towns, which had been 16·1, 16·9, and 17·5 per 1000 in the three preceding weeks, had further risen to 19·6 per 1000 last week. In London the death-rate was also 19·6 per 1000, which was also the average rate in the 32 large provincial towns. The lowest death-rates in these towns were 12·8 in Huddersfield, 13·7 in Halifax, 13·8 in Derby, and 13·9 in Croydon; the highest rates were 22·7 in Nottingham, 22·8 in

Manchester, 24·9 in Liverpool, and 27·3 in Salford. The 4442 deaths in these towns last week included 389 which were referred to the principal zymotic diseases, against 351, 334, and 323 in the three preceding weeks; of these 110 resulted from whooping-cough, 81 from diphtheria, 66 from measles, 56 from diarrhœa, 41 from "fever" (principally enteric), and 35 from scarlet fever. The lowest death-rates from these diseases last week occurred in Wolverhampton, Halifax, Gateshead, and Newcastle, and the highest rates in Nottingham, Salford, Blackburn, and Preston. The greatest proportional mortality from measles occurred in Liverpool; from whooping-cough in Salford, Bristol, Nottingham, Birkenhead, and Preston; and from diarrhœa in Swansea and Blackburn. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns last week The 81 deaths from diphtheria included 25 in London, nine in Liverpool, eight in Sheffield, and six in West Ham. No fatal case of small-pox was registered last week in any of the 33 towns, and only one small-pox patient remained under treatment on Saturday last, Jan. 12th, in the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2277, against 2535 and 2390 on the two preceding Saturdays; 156 new cases were admitted during the week, against 218, 167, and 163 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 306, 325, and 330 in the three preceding weeks, further rose last week to 391, but were 338 below the corrected average weekly number. The causes of 63, or 1·4 per cent., of the deaths in the 33 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Nottingham, Salford, Bradford, and in 12 other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Blackburn, Sheffield, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 20·6 and 19·2 per 1000 in the two preceding weeks, rose again to 21·9 during the week ending Jan. 12th, and showed an excess of 2·3 per 1000 over the death-rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 16·3 in Paisley and 18·1 in Greenock to 22·6 in Glasgow and 30·3 in Perth. The 685 deaths in these towns included 49 which were referred to whooping-cough, 22 to diarrhœa, 12 to measles, eight to diphtheria, six to scarlet fever, two to small-pox, and two to "fever." In all, 101 deaths resulted from these principal zymotic diseases, against 87 and 76 in the two preceding weeks. These 101 deaths were equal to an annual rate of 3·2 per 1000, which was 1·5 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 33 and 29 in the two preceding weeks, rose again last week to 49, of which 36 occurred in Glasgow, six in Dundee, four in Edinburgh, and two in Greenock. The deaths from diarrhœa, which had been 15 18, and 22 in the three preceding weeks, were again 22 last week, and included 12 in Glasgow, four in Dundee, and four in Aberdeen. The fatal cases of measles, which had been 12 and 15 in the two preceding weeks, declined again last week to 12, of which five were registered in Edinburgh and five in Aberdeen. The deaths from diphtheria, which had been nine and three in the two preceding weeks, rose again to eight last week, and included four in Edinburgh, two in Glasgow, and two in Aberdeen. The fatal cases of scarlet fever, which had declined from nine to two in the five preceding weeks, rose again last week to six, of which three were recorded in Glasgow, where the two deaths from small-pox and the two fatal cases of "fever" were also registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 121 and 105 in the two preceding weeks, rose again last week to 123, but were 80 below the number in the corresponding period of last year. The causes of 25, or nearly 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 21·5 and 29·4 per 1000 in the two preceding weeks, declined again to 28·3 during the week ending Jan. 12th. During the past four weeks the death-rate in the city has averaged 26·2 per 1000, the rate during the same period being 17·5 in London and 19·4 in Edinburgh. The 188 deaths belonging to Dublin registered during the week under notice were nine below the number recorded in the preceding week and included 18 which were referred to the principal zymotic diseases, against 12 and 23 in the two preceding weeks; of these, 10 resulted from whooping-cough, three from "fever," two from diphtheria, two from diarrhœa, and one from scarlet fever. These 18 deaths were equal to an annual rate of 2·7 per 1000, the zymotic death-rate during the same period being 1·5 in London and 2·4 in Edinburgh. The fatal cases of whooping-cough, which had been six, five, and 13 in the three preceding weeks, declined again to 10 last week. The deaths referred to "fever," which had been four, four, and three in the three preceding weeks, were again three last week. The two fatal cases of diphtheria showed a decline from the number in the preceding week. The 188 deaths in Dublin last week included 26 of children under one year of age and 59 of persons aged upwards of 60 years; the deaths of infants showed a marked decline, while those of elderly persons exceeded the number in the preceding week. Nine inquest cases and seven deaths from violence were registered during the week, and 56, or nearly a third, of the deaths occurred in public institutions. The causes of 10, or more than 5 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: H. L Crocker to the *Royal Arthur* and to the *Blake*, and A. W. May to the *Britannia*. Surgeons: A. R. H. Skey to the *Royal Arthur*, additional, and to the *Blake;* N. L. Smith to the *Renown;* A. H. H. Vizard to Plymouth Hospital; R. T. A. Levinge to the *Boscawen*, for the *Agincourt;* and R. C. Munday to the *Cambridge*.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Sir James R. A. Clark, Bart. (r.p.), is appointed to command the detachment of Militia Medical Staff Corps at Aldershot and also for duty at the Cambridge Hospital. Lieutenant Carr is appointed to the medical charge of troops at Ewshot Camp and Lieutenant Lauder to Deep Cut Camp, Frimley. Lieutenant E. Bennett goes to Longmoor and Borden Camps, Woolmer. Lieutenant J. E. Hodgson is posted to the Station Hospital, Western Heights, Dover. Colonel T. J. Gallwey, C.B., on return from active service in South Africa, has been reappointed to the medical charge of the Home District.

VOLUNTEER CORPS.

Artillery: 1st Fifeshire: Surgeon-Lieutenant J. C. G. Macnab to be Surgeon-Captain and to remain Supernumerary; Surgeon-Lieutenant A. Watson to be Surgeon-Captain. The Tynemouth (Western Division, Royal Garrison Artillery): Surgeon-Captain A. Duke resigns his commission. *Rifle:* 2nd Volunteer Battalion the King's (Liverpool Regiment): Surgeon-Major G. Westby to be Surgeon-Lieutenant-Colonel. 2nd Volunteer Battalion the East Yorkshire Regiment: Surgeon-Major A. T. Brand resigns his commission, with permission to retain his rank and to wear the uniform of the battalion on retirement. 1st Volunteer Battalion the Cheshire Regiment: Surgeon-Lieutenant J. B. Yeoman to be Surgeon-Captain.

TRANSVAAL WAR NOTES.

The hospital ship *Nubia* is returning to England with the following invalids on board: Civil Surgeons W. V. Eaves and H. C. Donald. Civil Surgeons C. Colin Campbell, S. L. Stephens, and W. Edwards are on their passage home in the same vessel.

Thirty-nine non-commissioned officers and men of the Royal Army Medical Corps have embarked at Southampton in the *Avoca* for South Africa.

The *Aurania* left for England on Jan. 8th, having on board Lieutenant-Colonel D F Franklin, R.A.M.C., Civil Surgeons B J. Collingwood. D. L. Griffiths, W. G. Sutherland, L. T. Whelan, and F Brinckwell.

Civil Surgeons J. G. Martin, A. W. Sanders, H. Hartley, N. E. Harding, and Major E. A. Burnside, R.A.M.C., have been discharged from hospital to duty.

Surgeon S. C. Godfrey, New Zealand M.I., has also been discharged to duty.

The members of the Ambulance Brigade attached to the Northampton Centre were entertained at a banquet at the Town Hall, Northampton, on Jan. 12th. Messages from the Queen and the Prince of Wales, congratulating the county of Northampton upon having furnished a large contingent for voluntary service of mercy in South Africa, were read.

THE ROYAL ARMY MEDICAL CORPS IN THE FIELD.

At the Garrison Gymnasium, Devonport, on Jan. 8th, Surgeon-General G. H. J. Evatt, principal medical officer of the Western District, in the presence of a large number of officers and non-commissioned officers, delivered an interesting lecture on the Organisation of the Royal Army Medical Corps in the Field. General Evatt said that a large amount of aid was wanted to make the Royal Army Medical Corps fit for the field, and the medical service was still very short-handed. He also stated that there was not a medical company of volunteers in the Western District, and he wanted a number of men to come forward from Plymouth and Devonport to form a volunteer company. At the conclusion of the lecture, on the motion of Colonel W. Clarke, a vote of thanks to General Evatt was unanimously passed.

THE BEARER DETACHMENT OF THE 2ND VOLUNTEER BATTALION (MANCHESTER REGIMENT).

The first annual dinner of the bearer detachment of the 2nd Volunteer Battalion (Manchester Regiment) was held in Manchester on Jan. 12th. Surgeon-Major G. H. Darwin presided, and among those present were Surgeon-Captain Westmacott, Surgeon-Lieutenant J. Ratcliff-Gaylard, and Dr. T. C. Railton. During the evening Surgeon-Major Darwin said that he ventured to think that they were on the eve of great changes in the medical as well as in the combatant services. He would make it compulsory for every combatant to pass through a course of ambulance duty, as being useful not only to the battalion, but also to themselves in time of need. A great deal had been done during the last 50 years in England in developing an ambulance system, and this had been further developed by the great service of the St. John Ambulance Association, which had sent upwards of 2000 men to the present war. The Volunteers had never abolished the old regimental system. After many years of struggling to make their bearer detachment a success he was prepared to advocate one of two things, either that they should have a separate medical staff company to each battalion, or that they should have a portion of the already formed Medical Staff Corps allotted to each battalion for practical purposes.

THE FEVER STATISTICS OF WAR.

On the occasion of the third anniversary dinner given at the Caledonian Club to General Ian Hamilton and other officers returned from South Africa, the Director-General of the Army Medical Service, made some remarks in connexion with the subject of the prevalence of enteric fever in modern warfare. Surgeon-General Jameson said that he owed the honour paid him that evening to the fact that he had the good fortune to hail from beyond the Tweed and to the further fact that he represented a department in the army burdened with many responsibilities. In every war during our own time the mortality from disease had been much greater than that from shot and shell. In the French war in Madagascar the mortality from disease was 32·2 per cent., while the mortality from wounds was *nil*. In Cuba the mortality from disease in 15 months was 40 per cent., irrespectively of the number sent home. Unfortunately, we had lost a great many men from disease in South Africa and the mortality from that cause was foreseen before the war. Of every 100 cases admitted to hospital in Ladysmith and Maritzburg during the year before the war 5½ per cent. were enteric cases. Inoculation was a great preventative and a man who had not been inoculated was more liable by six times to an attack of enteric fever than a man who had been inoculated. During the Franco-German war, while the Germans were surrounding Metz the mortality from enteric fever was nearly three times as great as in South Africa.

A SPECIAL CORRESPONDENT ON THE DEATH OF CIVIL SURGEON F. G. ENGELBACH.

In a graphic account of the Nooitgedacht reverse, after noticing the death in the hottest of the fight of Sergeant Read of the Scottish Rifles, attached to the Mounted Infantry, in circumstances of typical bravery, the special correspondent of the *Standard* gives the particulars of the case of Surgeon Engelbach in the following words: "The death of Surgeon Engelbach of the Yeomanry Hospital was also a typically brave one. Tending the wounded under heavy fire he was shot through the palm of the left hand and had just made a grim joke about now being handicapped in his work when in standing up to dress his wound he was killed by a bullet through the forehead."

HOSPITAL STOPPAGES.

The *Army and Navy Gazette* of Jan. 12th says that it is glad to learn that the question of hospital stoppages has again been under consideration, and that this time the War Office has been in a position to obtain justice for the soldier. The Treasury has been induced, owing to strong representations, our contemporary is informed, to amend the regulations on the subject to the extent of allowing power to general officers commanding districts to remit the whole of the stoppages due from soldiers under treatment for injuries received in the actual discharge of their military duties. This concession will be fully appreciated, and at the present moment seems particularly opportune.

HEALTH OF THE CHATHAM GARRISON.

Some important communications have recently passed between Vice-Admiral Sir William R. Kennedy, Commander-in-Chief at the Nore, and Major-General Sir Thomas Fraser, commanding the Thames district, with reference to the large number of cases of disease contracted by the men of the fleet and garrison at Chatham. A copy of the correspondence has been forwarded by the admiral to the Chatham Corporation who were asked if they could not take some steps in the matter. The corporation have referred the subject to a committee.

ASSASSINATION OF A MEDICAL OFFICER.

With reference to the murder of Captain Dudley Johnston, I.M.S., which we mentioned last week, a telegram from the correspondent of the *Times* at Lahore dated Jan. 12th states that the fanatic lay in wait at the entrance of the bazaar armed with a sword and a dagger to kill the first European he saw. On the entry of Captain Johnston the Ghazi rushed at him and stabbed him to death. The murderer then ran through the bazaar, but was pluckily caught by the bazaar jemadar. He was promptly tried and hanged.

THE VICTORIA CROSS.

The Queen has signified her intention of conferring the Victoria Cross upon Lieutenant E. T. Inkson, R.A.M.C., who on Feb. 24th, 1900, carried Second-Lieutenant Devenish (who was severely wounded and unable to walk) for three or four hundred yards under a very heavy fire to a place of safety. The ground over which Lieutenant Inkson had to move was much exposed, there being no cover available.

THE REPORT OF THE ROYAL COMMISSION ON THE SOUTH AFRICAN HOSPITALS.

Sir William Church, speaking at University College Colston Society dinner at Bristol on Jan. 15th, said that the report of the Royal Commission into the South African Hospitals had been completed and signed, and now only awaited acceptance by the Queen in order to be made public.

THE CRISIS IN CHINA.

The American hospital ship *Maine* has discharged at Southampton four officers and 138 rank and file patients. With the exception of 34 taken on board at Malta the invalids were from China. All the patients are now at Netley.

DEATHS IN THE SERVICES.

Surgeon-Lieutenant-Colonel Saunders Barton Haliday, I.M.S. (retired), in his fifty-eighth year, at his residence, Thicket-road, Anerley. He served in the Abyssinian war of 1867-68 (medal) and also in the Afghan war, 1878-79 (medal).

Major W. Babtie, V.C., R.A.M.C., the medical hero of Colenso, has just received the freedom of the Borough of Dumbarton.

THE Borough Council of Battersea have decided to borrow £985 for the purpose of erecting a post-mortem room, £2723 for a coroner's court, and £8825 towards providing new baths and washhouses.

Correspondence.

"Audi alteram partem."

"THE X RAYS IN SOUTH AFRICA."

To the Editors of THE LANCET.

SIRS,—As Mr. Hall-Edwards's paper on the above subject in THE LANCET of Jan. 12th is calculated to convey a wrong impression as to the steps taken by the War Office for the carrying out of x-ray work during the war I trust you will permit me to endeavour to correct it. During the three years previously to October, 1899, when I went to South Africa, I instructed all the young officers who passed through Netley in radiography and the methods of localisation of foreign bodies by this means, and the large majority of these officers I know to be capable of doing the work efficiently. Originally the intention of the War Office authorities was that x-ray work should be done by them, but it soon became evident that medical officers could not be spared for this important duty, as to make anything of it they had practically to devote all their time to it. The Surgeon-General of the Army, therefore, wired home recommending that experts in radiography should be sent out, and this was done. That these gentlemen were experts (without the note of interrogation which Mr. Hall-Edwards so frequently places after the word in his paper) is proved by the work they did during the war. I saw a large number of localisations accurately done by them, and I brought home with me an enormous number of negatives and prints of excellent quality taken by them which I hope I may be permitted to publish at some future time. Many of these skiagrams were taken for the localisation of bullets in the most difficult parts of the body—the head, chest, and pelvis—and were well done.

As regards the provision for x-ray work made by the War Office for the army in South Africa, every base and general hospital, each hospital ship, and some of the small stationary hospitals on the lines of communication took with them the army pattern x-ray apparatus made by Apps and Newton, which includes Mr. Mackenzie Davidson's localiser and an ample supply of plates and all other photographic materials. Care was taken that one or more of the officers already referred to as being familiar with x-ray work should form part of the *personnel* of these units on leaving England; but, as stated above, their services in this department had to be dispensed with. That Mr. Hall-Edwards succeeded where some of our experts failed is probable enough, but this fact hardly warrants him in so criticising the medical department of the War Office as to lead your readers to suppose that it took no interest in so important a modern surgical procedure as radiography and that it provided for its performance in the present campaign in but a very imperfect manner.

The x-ray department which Mr. Hall-Edwards recommends for the army is (and has been for some years) in existence here, and the methods of localisation and radiography are already being properly taught. The apparatus used here, as well as that sent to South Africa, had the approval of Mr. Mackenzie Davidson, a strong evidence for its correctness and completeness, as no surgeon or electrician has done as much as he has for the improvement and development of x-ray procedures. The present campaign is not the only one in which x-ray work has been done by officers of the Royal Army Medical Corps, as good results were also obtained in the last Soudan war. No one in these days is likely to neglect the advantages of radiography, and least of all the medical department of the War Office.—I am, Sirs, yours faithfully,

W. F. STEVENSON,
Colonel R.A.M.C.; Professor of Surgery, Army Medical School.
Netley, Jan. 14th, 1901.

"THE TEACHING OF ANÆSTHETICS."

To the Editors of THE LANCET.

SIRS,—It seems to me very undesirable that the important question of making anæsthetics a recognised part of the medical curriculum should at its present stage be hampered by side issues such as those which form the real essence of Lieutenant-Colonel Lawrie's letter in THE LANCET of Jan. 5th, p. 64. The point before the profession is whether the student should or should not be compelled to attend a course of instruction in the use of anæsthetics—not whether this or that anæsthetic should be chosen for routine use, or this or that system of anæsthetisation adopted. Up to the present time I have taken no part in the discussion which you, Sirs, by your leading article have so happily initiated, for I have been hoping that some prominent members of the profession would interest themselves in the movement and set the ball rolling by bringing their influence to bear upon the General Medical Council and examining bodies. I need hardly say, however, that the matter has my fullest sympathies. It is to my mind an extraordinary fact that at the commencement of the twentieth century it is possible for a medical man to enter practice without ever having attended a course of instruction in anæsthetics or handled an ether or chloroform inhaler. Surely the public ought to be protected against the risks attendant upon such a state of affairs. Pending the settlement of this question it is certainly a pity that Colonel Lawrie should, under the guise of supporting the movement, again stir up the muddy waters of the chloroform controversy; and were it not that the statements which he makes are likely to mislead the uninitiated they would certainly be most appropriately treated by the silence they deserve.

Colonel Lawrie attacks the present teaching of English anæsthetists and again urges the claims of chloroform. His letter is certainly not characterised by moderation in language. He is, naturally enough, disappointed at the verdict expressed by the scientific world upon the work of the Hyderabad Commission and his infelicitous strictures are perhaps excusable. But those of us who have spent the best part of our lives in the special study and practice of anæsthetics have a distinct duty to perform to the younger members of the profession when we see in print such misleading assertions as those contained in Colonel Lawrie's letter. The chloroform problem has, in fact, been solved both clinically and experimentally. Whilst there are numerous circumstances under which this anæsthetic is unquestionably preferable to all others, whilst skill in its administration almost abolishes its risks, whilst it is free from many of the disadvantages and even dangers of ether, the broad fact remains, that in the hands of *the average medical man* the last-named anæsthetic is less likely to destroy life than chloroform. It is for this reason that the London anæsthetists very properly advise those whom they instruct to select ether in preference to chloroform for the ordinary run of surgical cases. The margin of safety with this anæsthetic is a wide one—a point of great importance when we bear in mind the fact that the surgeon of to-day expects his patients to be kept, not, as Colonel Lawrie apparently keeps his patients, *moderately* anæsthetised, but profoundly narcotised—i.e., *beyond the point at which corneal reflex disappears.* Had we to instruct men who, like Colonel Lawrie, possess a special aptitude for anæsthetising, who are destined to practise under climatic conditions similar to those of Hyderabad, who when in practice will only have to assist surgeons with somewhat antiquated ideas as to what is meant by "anæsthesia," and who would be content to become and to be treated as mere dispensers under the "supreme command" of the surgeon—it is quite conceivable that some slight modification in the present teaching might be expedient. But most of the men passing through the hands of those who, under the present inadequate support of authority, do their best to instruct students are not thus specially gifted. Nor are they, as a rule, men who are about to enter practice in sunny Hyderabad. A large proportion of them, indeed, go into country practice in England, and possibly into cold and low-lying districts where the atmospheric conditions are not the most favourable for anæsthetising. Then, again, they are men who see in their hospital experience *true* surgical anæsthesia and who know that when they enter practice they themselves will be expected to produce for the surgeons whom they may meet a similarly profound state of insensibility. And lastly, they are men who, thanks to the courtesy of English surgeons, will be allowed a perfectly free hand in the choice and administration of the agent employed.

It is the duty of an instructor in anæsthetics primarily to consider the safety of the public, and in the discharge of this duty he is, I submit, bound to advise his students to employ that anæsthetic which, so far as available evidence goes, is least likely to destroy life. He must put aside convenience, simplicity, and personal bias.

Now what record has chloroform? I cannot within the compass of this letter even summarise the evidence against this anæsthetic, but it is perfectly conclusive. I may, however, refer to a somewhat interesting incident bearing upon the supposed safety of chloroform in the country north of the Tweed. A few years ago I had the honour to receive a deputation from an important Scotch hospital in which, so far as my memory serves me, no less than nine chloroform accidents had occurred in one year. I was asked to express an opinion as to the best form of ether inhaler. Colonel Lawrie would encourage the use of chloroform even for tooth extraction. But what is the record of this anæsthetic in dental surgery? Some years ago I thoroughly investigated this point, and I laid my results, in the form of a paper, before the British Dental Association. Curiously enough the annual meeting of this body was that year held in Edinburgh, and the facts and figures which I there brought forward were not disputed. I found that in 15 years (1880–1894 inclusive) no less than 37 deaths had been recorded as having occurred in Great Britain in connexion with anæsthesia for dental operations. Of these, 14 occurred in Scotland (12 chloroform deaths); 21 in England and Wales, excluding London (15 chloroform deaths); and two in London (no chloroform deaths). Now, according to the Census returns (average between 1881 and 1891) the population of Scotland was roughly 4,000 000; that of England and Wales (excluding London) was 23,250,000; and that of London was 4,250,000. From this it follows that during the 15 years ending 1894 the dental anæsthetic death-rate in Scotland was more than four times as great as that in England and Wales, and about seven times as great as that in London. Had the rate in England and Wales been the same as in Scotland there would have been at our doors about 96 fatalities during this period; whereas, as my figures show, there were only 23. The explanation is obvious: it is that the Scotch death-rate was due to the use of chloroform. In London, where this anæsthetic is rarely if ever used in dental practice, the ratio of deaths to population was extremely small; in England and Wales (excluding London) where chloroform is used, but not to the extent which obtains in Scotland, the ratio was considerably higher; and in Scotland itself, where chloroform is the routine anæsthetic—at all events for all major dental operations—the ratio was very much higher. And yet, with facts and figures such as these we find Colonel Lawrie still endeavouring to inculcate a disregard for the risks of chloroform If it were necessary further to strengthen the above results one might add that it is quite possible, if not probable, that many more deaths than those of which I was able to find records actually took place in Scotland during the 15 years referred to, for there are, as is well known, no coroners' inquests in Scotland, so that chloroform accidents often escape notice.

I am, Sirs, yours faithfully,

Queen Anne-street, W., Jan. 14th, 1901. FREDERIC HEWITT.

WEAK POINTS IN THE EXAMINATION SYSTEM.

To the Editors of THE LANCET.

SIRS,—There can be little doubt among those who have had much experience in teaching and examining medical students that in a small percentage of cases at examinations the candidate's fitness to pass is not fully appreciated. There can, I think, be less doubt that the teacher is able to gauge a student's capabilities and knowledge more accurately than an examiner can, and yet, under the present system of medical examination, no use is made of the information which teachers could so easily give. Every examiner must remember cases in which a candidate has almost deserved the minimum mark to pass, and the doubt has arisen as to whether he is a hard-working man who has failed to do himself justice or one who has crammed up just sufficient transitory knowledge to get near the pass limit. In my opinion it would be a great assistance to examiners in their attempts to be absolutely fair if teachers were invited to send in a confidential report of the industry and capacity of each student. These reports need be used in doubtful cases only, and their existence would tend to make men try to win their teacher's good opinion by steady systematic work rather than to get up a certain part of their subject from books and trust to luck that the examiner may not pitch upon the part of which they are ignorant. Teachers may, I think, be trusted to act honourably by the examining boards. They are the people from whom examiners are drawn and during the time of their examinership implicit faith is reposed in them, although their opportunities of giving an unfair advantage to their own students are very great. If any of my fellow teachers will spare time to discuss this matter I think good will come of it, for as a teacher I know that medical examinations, though fair enough on the whole, are capable of some little improvement.

I am, Sirs, yours faithfully,

F. G. PARSONS.

Anatomical Department, St. Thomas's Hospital
Jan. 14th, 1901.

"ARSENIC AND AERATED WATERS."

To the Editors of THE LANCET.

SIRS,—Dr. Bampton has raised a most important point in reference to the preparation of mineral waters from the action of sulphuric acid containing compounds of arsenium and derived from arsenical pyrites. The impure acid, it is interesting to note, may be used with impunity if certain conditions do not arise. The reaction occurring between arsenical vitriol and a carbonate of calcium or sodium in a leaden generator may be expressed by the simple formula—

$$(1)\ CaCO_3 + H_2SO_4 = CaSO_4 + H_2O + CO_2\ (gas),$$

the arsenical compounds, so far as manufacturing purposes are concerned, remaining latent and harmless. If, however, a scrap of iron, such as a nail or a portion of zinc, finds its way into the generating vessel the organism is converted into the guise of the death-dealing gas "arsine" (AsH_3), which is pumped with the carbon dioxide into the cylinder and is taken thence under high pressure (from 120 to 180 pounds) on the square inch and forced into bottles or syphons. The chemical changes that occur may be expressed as follows:—

$$(1)\ 3Fe + 3H_2SO_4 = 3FeSO_4 + 3H_2$$
$$(2)\ 3H_2 + H_3AsO_3 = 3H_2O + AsH_3\ (gas).$$

In this reaction the nascent hydrogen produced by the action of the "sulphuric acid" upon the "iron" reduces the "arsenious acid" to the condition of arsine (AsH_3) (gas). It is unnecessary for me to point out what terrible effects such a catastrophe would produce and the warning that all those who are concerned in the manufacture of mineral waters should take to avoid the use of any vitriol not guaranteed free from arsenical compounds in their processes.

I am, Sirs, yours faithfully,

NINIAN MCI. FALKINER, M.D. Dub.

Dublin, Jan. 9th, 1901.

*** The arsenical contamination of aerated waters in the way suggested by our correspondent is, we think, a remote probability. The carbonic acid gas contained in steel tubes is not usually prepared from acid and whiting. Most manufacturers test the purity of the gas by exposing it to potash solution. Pure CO_2 would be completely absorbed but not hydrogen or arseniuretted hydrogen. Lastly, aeration is very unsatisfactory when insoluble gaseous impurities are present.—ED. L.

"LET US NOW PRAISE FAMOUS MEN."

To the Editors of THE LANCET.

SIRS,—Your eloquent appeal in a leading article last week contains incidentally a pathetic reference to the grave of Sir Thomas Browne; the well-known passage beginning, "There is nothing strictly immortal but immortality," may, perhaps, not unfittingly be recalled to the memories of your readers. I subjoin the lines referred to.

I am Sirs, yours faithfully,

Worthing, Jan. 13th, 1901. GEORGE PINDER.

SIR THOMAS BROWNE, *Hydriotaphia, Chap. V.*

There is nothing strictly immortal but immortality. Whatever hath no beginning, may be confident of no end; which is the peculiar of that necessary essence that cannot destroy itself; and the highest strain of omnipotency, to be so powerfully constituted as not to suffer even from the power of itself: all others have a dependent being and within the reach of destruction. But the sufficiency of Christian immortality frustrates all earthly glory, and the quality of either state after death makes a folly of posthumous memory. God who can only destroy our souls, and hath assured our resurrection, either of our bodies or names, hath directly promised no duration. Wherein there is so much of chance that the boldest expectants have found

unhappy frustration: and to hold long subsistence seems but a scape in oblivion. But man is a noble animal, splendid in ashes, and pompous in the grave, solemnising nativities and deaths with equal lustre, nor omitting ceremonies of bravery in the infamy of his nature.

To the Editors of THE LANCET.

SIRS,—In September last I sent to the meeting of the British Association at Bradford a paper prefaced with the following remarks: "This year being the tercentenary of the publication of Dr. Gilbert's celebrated work 'De Magnete,' in which he announced in the year 1600 that the earth was a magnet, but from which time till now the cause of its magnetism has remained a mystery, the present meeting of the British Association would appear to be a very appropriate occasion for commemorating that event and for suggesting an explanation of the cause which is not at variance with known electrical and meteorological laws, since no reasonable explanation or one that is proof against scientific criticism has yet been offered." My paper arrived late—three days after the British Association had commenced its proceedings, but I was pleased to see that Professor S. P. Thompson lectured at the London Institution at the end of last year on "A Tercentenary of Electricity," and it is with still greater pleasure that I now learn in your columns that the medical profession at Colchester, Gilbert's native place, have combined to erect a marble statue of the famous physician and scientist. I trust a much larger sum will be subscribed than the one mentioned as being actually wanted. I have much pleasure in seconding your appeal and in forwarding to the treasurer my humble contribution.

I am, Sirs, yours faithfully,

Jan. 15th, 1901. FREDERICK GEORGE, M.D. St. And.

THE PROPOSED NEW MUNICIPAL BUILDINGS, ETC., AT BOURNEMOUTH.

To the Editors of THE LANCET.

SIRS,—As a member of the Municipal Buildings Committee of the Bournemouth Town Council, my attention has been called to a communication appearing in THE LANCET of Jan. 12th, p. 116, under the heading of "When is an Improvement not an Improvement," in which the writer has made many inaccurate statements calculated to do this unique health resort considerable harm. I cannot do better than enclose the "statement of facts," which will sufficiently refute such misunderstandings.

As a medical man who has known the town for more than 17 years I shall hail with satisfaction the time when this open space in question is properly drained and laid out as beautiful and healthy pleasure grounds, in place of being a semi-swamp in parts and a possible receptacle for things of an objectionable nature. Instead of putting the ratepayers to an unnecessary expense in refuting misstatements it would be far more to the purpose if these objectors would direct their energies towards strong advocation of more shelters and more seats throughout the town, and the erection of that much-needed pier pavilion, all of which would prove inestimable boons to the invalid visitors to this town and enormously strengthen our hands in the treatment of chest cases and many other forms of disease. The lack of the above is the one crying need of Bournemouth, for it is often a difficulty to encourage patients to go outside their houses to take fresh air unless there is adequate provision for shelter from sudden atmospheric changes. Fortunately, there are signs that we are waking up to this necessity, and medical men can hasten it by making their voices heard in the matter.

I am, Sirs, yours faithfully,

Bournemouth, Jan. 14th, 1901. F. W. CORY.

FENCING AS A THERAPEUTIC MEASURE.

To the Editors of THE LANCET.

SIRS,—I venture to suggest to the profession that the exercise of fencing is not sufficiently used as a remedy in many of the incipient neuroses of adolescence. And my suggestion would involve its adoption more particularly in the case of young girls. As an old student of the foils I am sure that no other pastime open to both sexes can compare with it as a natural diaphoretic, as a training for the brain, the eye, the nervous and muscular systems, and if the proper dress (or undress) be adopted (in girls) the perfect freedom of such costume may be elevated into a future habit which even may discard the "exigencies" (so harmful) of society clothes in their extreme and usual manifestations. In my own practice I have, I am glad to say, never neglected the "prescribing" of the foils, but I am half-sure and half-afraid that it is an omitted recommendation with the profession at large.

I am, Sirs, yours faithfully,

GEORGE H. R. DABBS, M.D. Aberd.

Shanklin, I.W., Jan. 14th 1901.

THE PHARMACEUTICAL SOCIETY AND DOCTORS' SHOPS.

To the Editors of THE LANCET.

SIRS,—We have just seen the article upon "The Employment of Unqualified Dispensers" in THE LANCET of Jan. 5th. There is in the article an error in fact which we think should be pointed out—viz., the writer says: "The Pharmaceutical Society had instigated no less than 46 prosecutions of unqualified druggists' assistants." This is not so. The 46 prosecutions in question were all against doctors' unqualified assistants for selling poison in shops belonging to doctors, and in each case a conviction was secured. We think this correction gives additional weight to the views of the article.—We are, Sirs, yours faithfully,

P. MORISON AND SON,

Solicitors to the Pharmaceutical Society in Scotland.

Edinburgh, Jan. 12th, 1901.

"ISOLATION HOSPITALS."

To the Editors of THE LANCET.

SIRS,—As medical officer to the Hospital for Infectious Diseases at Bishop's Stortford, will you kindly allow me a few lines of explanation regarding the statements which appeared in THE LANCET of Jan. 5th (p. 64), in a letter signed by Mr. Edgar Pittway? I wish to confine myself purely to matters of fact. The two children, W. N—— and A. F——, referred to in Mr. Pittway's letter were discharged from the hospital on Dec. 16th. Both children were quite free from any discharges from either the eyes, ears, or nose, as ascertained by myself. Desquamation in the case of W. N—— was completed. A. F——, at the end of nearly the seventh week had not desquamated at all. M. F——, a sister of A. F——, was admitted to the hospital on Dec. 25th, nine days after her sister had returned home. She was then desquamating freely all over the body. M. N——, a brother of W. N——, was admitted to the hospital on Dec. 27th also desquamating generally. As he was desquamating freely on his hands the process of desquamation was obviously of some standing.

With these facts before me I cannot agree with Mr. Pittway's conclusion that the "return" cases were the cause of the second outbreak of scarlet fever at Henham.

I am, Sirs, yours faithfully,

Bishop's Stortford, Jan. 16th, 1901. E. D. AGNEW.

THE COUNCIL OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

To the Editors of THE LANCET.

SIRS,—It would be most interesting to have an answer to the question—"What is the object of the annual meeting of the Fellows and Members of the Royal College of Surgeons of England?" We are advised by advertisement that a meeting will be held and we are *invited* to attend. Some of us do so at expense and inconvenience to ourselves, when a voluminous report is placed in our hands which we have never seen before, and consequently we have never had any opportunity to acquire the slightest knowledge of its accuracy or contents, whereas the Council have, or should have, a complete mastery of the same and a defence of any weak spots which may be detected at the meeting. This has at last been remedied by the strenuous efforts mainly of the members. Certain proposals are put forward at the meeting and are put to the vote, and as often as not these proposals are carried *nem. con.*, but at the next meeting of the Council our unanimous vote is tabooed and the very opposite is carried by the Council.

Now if I found that any other society, scientific, social, or

commercial, treated my vote in such a manner I should at once withdraw my name as a member and regard the matter as a personal indignity. But in a case where I have given many years of my life in order to get an insight and knowledge of surgery so as to obtain my daily bread I am compelled to put up with the treatment. If I resign my membership I resign that which enables me to gain an honest livelihood. Is this fair? Is it just?

There is one other question I should like to ask. Since a somewhat peculiar circular some time ago was sent out to the Fellows of the College, asking for their opinion as to the advisability of granting some measure of the franchise to the Members, and a certain number of the Fellows voted in the affirmative, I should like to know by whom the names of the recently elected Fellows were selected, and what percentage of the Fellows voted for those names, and also for the recent Act of Parliament which was obtained in order to enable the Council of the College to do that which previously they were unable to do. It is my firm belief that if some of these newly-elected Fellows were fully aware of the fact that not one of the 17,000 Members had any voice or vote in their selection and election they would at once return their diplomas.—I am, Sirs, yours faithfully,

ALBERT S. MORTON, M.D. Durh.

Putney, S.W., Jan. 9th, 1901.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Refusal by a Judge of a Medical Certificate and Contempt of Court.—The Appointment to the Victoria Dufferin Hospital in Calcutta.—The Plague Epidemic.

A CURIOUS incident is reported from Colombo. The account which is current is to the effect that Sir W. Bonser, the chief justice, has issued a rule calling on Captain J. B. Reddick, R.A.M.C., to show cause why he should not be committed to prison or otherwise punished for contempt of court. Captain Reddick gave a medical certificate to a Major Pain, who had been summoned to serve on a jury, stating that the major was not well enough to serve. The chief justice, it appears, took exception to the certificate and refused to accept it on the ground that the nature of the illness was not stated on it, and he laid down the dictum that it was for the court to decide whether the statements in the certificate were sufficient to entitle the holder thereof to exemption. The certificate was thereupon rejected. When Captain Reddick discovered this it is reported that he addressed a letter to the chief justice expressing his surprise at the course of action adopted, demanding an apology, and threatening on failure of a sufficient apology being made to represent the chief justice's conduct to the Imperial authorities. On receipt of this letter, it is said, the chief justice ordered the rule *nisi* to issue.

I understand that Miss Margaret M. T. Christie, M.D. Lond., has been selected for the permanent charge of the Victoria Dufferin Hospital in Calcutta. Amongst lady doctors this appears to be a much-coveted appointment and the competition for the post is said to have been very keen. Miss Christie was one of the lady doctors sent out in 1898 for plague duty and she was posted to Calcutta. The outbreak of that year being so mild there was little opportunity of studying plague, but Miss Christie took an active part in pushing the value of inoculation and in association with Mr. Nield Cook, the health officer, she succeeded in performing over 2000 inoculations The city at that time was greatly alarmed about the plague and the authorities had made great preparations against it. Amongst other duties Miss Christie acted as lady superintendent to the staff of European nurses who had been imported into Calcutta in the event of emergencies. Miss Christie will take up her new post in February.

About the plague epidemic there is little to record this week. There are distinct indications of its development once more in Bombay city. In three of the old infected districts—Mandvi, Bhuleshwar, and Byculla—the signs of recrudescence are marked and there are more patients in the hospitals under treatment for plague. The plague mortality in the Behar district of Bengal is very large. Captain A. Gwyther, I.M.S., has been placed there on special duty. It is a good sign that the people are coming forward asking to be inoculated, as except for this, disinfection alone is relied on and is being pushed extensively. It is said that an experienced assistant civil surgeon has been sent as health officer to Patna. In Bangalore there appears to be some friction about the plague regulations and the disease is spreading. There is no definite sign of recrudescence at present in Calcutta, but the general mortality is abnormally high. Sporadic cases still keep cropping up in the villages of the Jullunder district of the Punjab.

Dec. 29th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Christmas Festivities.

THE return of Christmas brings a renewal of the efforts to make glad the season among all the sick and poor. The various hospitals in the city have vied with each other in promoting the happiness and comfort of the inmates, and in providing entertainments and amusements which tend to take their thoughts away from their maladies for the time being. In the Christmastide which has just gone by the General Hospital was especially prominent in this direction, the internal decorations being tastefully and artistically arranged, and the colours and festoons giving an attractive appearance to the wards and rendering them bright and cheerful-looking. There were entertainments in the form of plays by the resident officers, tableaux and concerts among the sisters and nurses, and, not the least enjoyable, an "at home" by the matron—Miss Jones—which was largely attended and much appreciated. While it is no doubt a successful way of brightening the lives of many of the patients it must not be forgotten that all the preparations and participations in such festivities entail an extra amount of work and longer hours, of time and labour drawn from the more serious duties of everyday routine; the more credit, therefore, is due to those whose sympathy and disinterestedness render them willing and anxious to smooth the lives of those whom accident and disease have thrown into such admirable and comfortable quarters during the season of Christmas-time.

Death of Sir John Jaffray.

On Jan. 4th Sir John Jaffray, the first baronet, passed peaceably away to his rest. At the ripe age of 82 years Sir John Jaffray completed a long and active life, of which a great part was spent in the public service of the town of his adoption. Born at Stirling in 1818, he became a reporter for a newspaper after his education at Glasgow, and in 1844 obtained an appointment upon the *Birmingham Journal*. Here, after an interval in which he displayed rare energy, literary ability, and business capacities, he was taken into partnership at the formation of the *Daily Post*, a position which he held with increasing success and advancement. Of liberal principles and pronounced views on important public and social questions, he was always ready with fearless advocacy to expound his ideas for the guidance of the public opinion of the city and the welfare of those among whom he lived and laboured so earnestly. Generous in relation to medical charities and philanthropic institutions, he built in 1885 the suburban hospital known by the name of its founder, the Jaffray Hospital, where the patients who pass from the General Hospital remain until they are able to be removed or to resume their work. In all matters of medical interest he took a prominent part, more particularly at the General Hospital and the Hospital for Women. Of astute business habits and profound commercial knowledge he acquired distinctions and honours which rarely fall to the lot of those who cut their way through obstacles and difficulties, achieving thus a merited and distinguished position in the community which he so long and so actively adorned.

Periodical Collections for Local Charities.

The complete list of the collections for the past year shows a substantial amount for the various charities of the city. The total reaches the sum of £5262 17*s.* 9*d.* In spite of war funds and numbers of minor drains upon benevolence there will be from this source a gratifying addition to the respective funds of the hospitals in the city.

Medical Appointments.

At a meeting of the board of management of the General Hospital on Jan. 4th two new offices were created and appointments made. It has long been a source of difficulty

in dealing with the large number of medical out-patients, and after consideration it was resolved to appoint two casualty assistant physicians. For these offices there were six candidates, the choice falling upon Dr. J. R. Charles and Dr. S. H. Perry, each of whom had held the post of resident medical officer for a lengthened period.

Jan. 15th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Lord Mayor's Hospitals Century Fund: the Hospital Sunday Collection.

THE twentieth century has opened auspiciously for the medical charities of Liverpool. The fund which the Lord Mayor has inaugurated for the liquidation of the debts of the hospitals is proceeding most satisfactorily, nearly £9000 having been already subscribed towards that object, the total amount required being £22,000. The collections made on Sunday, Jan. 13th, in the various churches and chapels throughout the city and suburbs on behalf of the Hospital Sunday Fund promise to exceed those of last year by a substantial amount. The returns from the various places of worship which have already been published show, in many instances, marked improvement upon last year's figures. The total amount collected will not be fully known for 10 days or a fortnight.

Arsenical Beer in Liverpool and Crewe.

The quarterly report of the public analyst (Dr. Campbell Brown) submitted at the last meeting of the Liverpool Health Committee, stated that out of 298 samples of beer analysed, 52 were found to constitute offences against the Food and Drugs Act. 25 samples contained a trace of arsenic, 20 samples contained a small quantity, four contained one and a half grains per gallon, two contained three-quarters of a grain per gallon, and one contained half a grain per gallon. A discussion took place at the meeting of the committee regarding the prosecution of offending brewers, but no decision was arrived at. The medical officer of health of Crewe has also examined 21 samples of beer and has found traces of arsenic in 10. There were about 30 cases of beer poisoning, two of which were dangerous cases.

The Victoria Central Hospital, Liscard.

On Jan. 1st the New Victoria Central Hospital, Liscard, was formally opened by Mr. James Wright, the chairman of the Wallasey District Council, in the presence of a large and influential gathering. At the recent bazaar held to raise a fund for furnishing the institution the large sum of £6000 was obtained, thus enabling the committee to clear off all liabilities and furnish the hospital in a complete manner. The institution enters on its career free from debt, which is a rare occurrence nowadays in hospital annals. In regard to the maintenance fund, half the necessary amount of £1200 has already been promised. There is accommodation for 40 beds in the building, which are in the nursing charge of a lady superintendent and eight nurses. The hospital received its first patients on Jan. 7th.

The British Congress on Tuberculosis.

Liverpool will be represented at the British Congress on Tuberculosis, which is to be opened by the Prince of Wales on July 22nd in the Queen's Hall, London, by Dr. Rubert Boyce, the energetic professor of pathology at University College, Liverpool, who will act as one of the secretaries of the pathological (including bacteriology) section.

A Liverpool Centenarian.

Mrs. Sarah Smith, residing in Beaumont-street, is reputed to have been born in 1797, so that she is now in her 104th year. The old lady is reported to be in excellent health, her only trouble being an occasional attack of rheumatism, which does not appear to have affected her health to any degree.

The Demolition of Insanitary Property: Local Government Board Inquiry: A Decreasing Mortality-rate.

Mr. E. P. Burse, one of the Local Government Board inspectors, recently heard evidence at the municipal buildings in favour of, and considered objections to, three applications by the Liverpool Corporation for the issue of provisional orders under Section 303 of the Public Health Act, 1875. The first application was for power to alter the Liverpool Sanitary Amendment Act, 1864, so as to enable the corporation to borrow, with the sanction of the Local Government Board, additional moneys for the purchase and demolition of insanitary houses. The town clerk, in support of the application, stated that at various times the corporation had obtained powers to borrow £200,000 for the demolition of insanitary property and the whole had been expended. Other powers were subsequently acquired to borrow additional sums also amounting to £200,000, nearly all of which had been expended. In a short time there would be a further report from the medical officer of health declaring that other houses were in an insanitary condition and unfit for human habitation, and they wished to take time by the forelock, and to provide the means for carrying out this work of improvement. The number of houses which had already been demolished by the corporation was about 6500. An assurance had been given to the Local Government Board by the corporation in regard to re-housing a certain number of the people displaced by the operations of the committee. 182 houses with recreation grounds were in course of erection by the corporation. They had also acquired sites in various directions for building upon; bringing up the total to 843 new houses; each house will accommodate between four and five people. There had been 1602 fewer deaths in Liverpool during the past six months as compared with the corresponding six months of last year, which showed a steady and continuous improvement. This happy result had, no doubt, been considerably helped by the destruction of insanitary areas, the widening of the streets, and the various improvements effected by the corporation in recent years.

Jan. 15th.

WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Cardiff Infirmary.

AS already reported in THE LANCET[1] there was a most unseemly dispute at the December meeting of the executive committee of the Cardiff Infirmary between the members of the medical board on the one hand and some of the other members, including one medical gentleman, on the other hand. The medical board had recommended the appointment of Dr. Owen L. Rhys to the position of assistant house surgeon, but the recommendation was met with a resolution refusing to accept the recommendation and appointing Mr. D. A. Fitzgerald to the post. This resolution was carried. Mr. Fitzgerald was acting temporarily as superintendent of the Cardiff Fever Hospital when a case of plague was treated in that institution, so that he is not unknown in the town, and the medical board would no doubt have heartily accepted the decision of the majority of the executive committee had it not been for an unfortunate expression of opinion by the mayor to the effect that Mr. Fitzgerald was rejected by the board because he was an Irishman and a Catholic, and he further said that the infirmary suffered in the eyes of the public because of the dominating influence of the medical board. "While the doctors are squabbling," said his worship, "patients are dying." This may be a smart epigram, but, like many epigrams, it does not convey the truth. The injustice of the expression was felt so keenly by Dr. Charles Vachell, the senior physician to the infirmary, that he then and there tendered his resignation, and it seemed not improbable that the entire staff would follow his example. This disaster has happily been averted, and at the January meeting the most influential members of the executive committee expressed their entire confidence in the staff, and the persuasions of General Lee, the chairman, even induced Dr. Vachell to withdraw his resignation. The whole incident cannot but be regretted by all those who have the good of the institution at heart, and though the storm may to a certain extent have cleared the air it is none the less to be deplored.

Memorial to the late Mr. F. W. Lewis.

In the first week of the new year Sir John Williams unveiled a memorial fountain at Llandovery which had been erected in memory of the late Mr. F. Williams Lewis, who practised in the town for many years. Mr. Lewis was a student at the Middlesex Hospital in the "seventies,"

[1] THE LANCET, Dec. 29th, 1900, p. 1928.

and after settling in Wales he was appointed Poor-law medical officer and medical officer of health of Llandovery. The fountain is a granite structure and cost about £600. It is the gift of the Rev. T. Evans and Mrs. Evans, who were close personal friends of Mr. Lewis.

Anti-vaccination Tactics.

The anti-vaccinationists have discovered still another method of delaying the vaccination of children. At the police-court held at Abertillery in December there were down for hearing six cases of neglect to have children vaccinated, but as the representative of the local anti-vaccination society objected to a medical man sitting on the bench Mr. W. E. Williams retired and the cases were adjourned for a month. At the adjourned hearing in January the same objection was taken and a further adjournment was made. The clerk to the magistrates very properly ruled that Mr. Williams was not disqualified from hearing the case. It is reported that there have been granted in Monmouthshire 407 certificates of exemption from vaccination since the passing of the Vaccination Act in 1898.

Notification of Measles.

At the last meeting of the Neath Rural District Council it was decided to delete measles from the list of notifiable diseases in spite of the strong protests of Mr. T. P. Whittington, the medical officer of health, and of Mr. James Elias, a medical member of the council and who is also the medical officer of health of the borough of Neath. The only districts in Glamorganshire in which this disease is now notified are Swansea and Neath borough.

Bequests to Medical Charities.

The late Mr. Richard Lewis of Hereford has bequeathed £300 to the Cardiff Infirmary and £150 to the Porthcawl rest.

Sanitation at Oystermouth.

The Oystermouth District Council, which includes within the area of its administration the popular Welsh health resorts known as the Mumbles and Langland Bay, has never displayed very conspicuous energy in carrying out its duties as a sanitary authority; indeed, upon more than one occasion members of the council have resented what they have been pleased to call the unnecessary interference of the medical officer of health of the county of Glamorgan. It is hoped that the appointment of Mr. A. Lloyd Jones, who holds the Diploma in Public Health of the University of Cambridge, to the vacant post of medical officer of health, is an indication that the council has at last become alive to its responsibilities.

Quack Literature.

The high wages prevailing in the colliery districts of Monmouthshire and of South Wales are being taken advantage of by the vendors of quack medicines. The "stomach pills" and the cough lozenges which are disposed of in large quantities on market days probably do little harm if they do no good. This cannot be said, however, of certain literature which is now being distributed broadcast throughout the most populous parts of the country. The vicious character of the publication may be gathered from the use of such expressions in a column headed "How to be happy though married" as "cures obstinate cases" and "regulator of the monthly courses," in connexion with certain lotions and suppositories the mode of application of which is described in considerable detail. Since every right-minded person is agreed that such broadsheets can only do harm there ought not to be much difficulty in securing their suppression.

Aberystwith Rural District Council.

The election of an inspector of nuisances by the Aberystwith Rural District Council was the occasion of some rather unusual proceedings. There were 40 candidates for the appointment, the salary of which is £105 per annum, and included in the number of applicants were the chairman and the vice-chairman of the council. These two gentlemen having been out-voted returned to their places in the council where one proposed and the other seconded the resolution appointing the successful candidate.

Lunacy in Wales.

Dr. R. S. Stewart, the deputy medical superintendent of the Glamorganshire County Asylum at Bridgend, has recently given some interesting details relating to the prevalence of lunacy in Wales. The Welsh counties having the largest proportionate number of lunatics are Brecknockshire, Radnorshire, Montgomeryshire, and Cardiganshire. In Glamorganshire the rate of lunacy is low and in the several unions of that county the rate per 10,000 of the population is in Neath, 24; Swansea, 22; Merthyr, 21; Cardiff, 20; Bridgend, 18; Cowbridge, 18; and Pontypridd, 10.

Newport and Monmouthshire Hospital.

The Newport and Monmouthshire Hospital has received a donation from an unusual source. It appears that the owner of a licensed house, the lease of which is expiring, offered to pay £2000 to the hospital funds in addition to a ground rent of £50 per annum for the lease of a block of buildings on land belonging to the Newport Corporation on condition that he should be allowed to erect a licensed house upon the land. The licensing magistrates having sanctioned the transfer the amount was formally voted to the hospital at the last meeting of the Newport Council, although some of the members protested and urged that it should be paid over to the borough fund or given to the technical instruction committee.

Pembrokeshire and Haverfordwest Infirmary.

This infirmary, an institution containing 34 beds, has been closed in order that the drainage system may be overhauled and reconstructed. The occurrence of a case of diphtheria among the patients led to an examination of the drains, resulting in the discovery of certain defects.

Jan. 14th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Dietaries of the Poor in Edinburgh.

UNDER the auspices of the Scottish Society of Economists Dr. D. Noel Paton delivered a lecture on the evening of Jan. 9th in the Accountants' Hall, Queen-street, Edinburgh, on "Dietaries of the Poor in Edinburgh." Dr. Paton has lately been conducting investigations on somewhat similar lines to those so largely carried on in America with the object of ascertaining the energy-producing power of the food used among the people and also the proper amount of food for the average working man. Dr. Paton at this meeting gave an account of the researches which he had conducted. The conclusion which he arrived at was that the poorer classes of working people in the city of Edinburgh did not receive the food necessary for what had been estimated as the amount of energy which an ordinary labourer should be able to expend on his work. In the daily diet of some of the poorest classes whose wages were irregular it had even been found that the free labourers did not receive so much energy-producing food as did the inmates of asylums, hospitals, and prisons in this country. Oatmeal, that maker of Scots' bones and brains, came far down the list of articles of food in the dietaries which Dr. Paton had investigated. Bread, potatoes, milk, vegetables, and beef preceded it. In concluding his lecture Dr. Paton suggested that a first step towards remedying this state of matters might be taken by distributing simple tables among the people showing the amount of work-producing power which could be got for a pennyworth of the various ordinary articles of diet. Some discussion followed Dr. Paton's paper, after which a cordial vote of thanks was given to the lecturer.

Scottish Natural History Society.

At a meeting of the Scottish Natural History Society held on Jan. 10th Dr. David Hepburn delivered a lecture on "The Skull as a Basis for Race Classification." There were various methods of classifying the human race, such as the colour of the skin, the character of the hair, geographical distribution, &c., and Dr. Hepburn showed that the information derived from careful examination of the skull might be similarly utilised. He described the method of obtaining the measurement of the cranial box and showed how a classification of skulls might be made on the figures so obtained. He also pointed out the differences between the human skull and that of apes in that particular. He described the method of measurement by tapes and callipers and the system of calculating "indices." Subsequently he discussed the signification of the various results derived from skull measurements apart from their value as aids to a system of classification. He showed that at the time of birth a human infant had a distinctly human brain, while in the rest of its body, notably in its joints and bones, it presented striking resemblances to the anthropoid apes. From the fact that the brain was so clearly in advance of the rest

of the body he argued that the growth of the brain was the primary factor determining the growth of the skull. The lecture was illustrated by limelight illustrations from photographs and also by specimens of various types of skulls.

Cremation in Scotland.

The report of the directors of the Scottish Burial Reform and Cremation Society, Limited, for 1900 states that the number of cremations shows a steady increase every year. Every satisfaction continues to be expressed with the arrangements at the crematorium. The progress of the cremation movement is, however, slow in Scotland, only 75 cremations having taken place since the opening of the crematorium. The operation of the Act which was passed in 1900 granting to local authorities in England power to expend public moneys in erecting crematoriums has not yet been extended to Scotland. Various municipal authorities in England propose to exercise the powers thus given them, and at Hull a municipal crematorium has lately been opened. The directors regret that in spite of the express desire of the health authority the bodies of those who died from plague in the recent outbreak in Glasgow were not cremated, it is believed mainly owing to the opposition of the Roman Catholic clergy. The report goes on to urge that, as the wishes of many persons with regard to cremation have been disregarded after death, the forms of request issued by the society be signed in duplicate.

University of Edinburgh: Annual Report.

The annual report of the University of Edinburgh which has just been published shows that the total number of matriculated students for the past year was 2754. This includes 252 women. Of the total number 842 (including 215 women) were enrolled in the faculty of arts, 161 (including three women) in the faculty of science, 40 in the faculty of divinity, 348 in the faculty of law, 1338 (including 13 women) in the faculty of medicine, and 25 (including 21 women) in the faculty of music. Of the students of medicine 592. or 44 per cent., belonged to Scotland; 332, or nearly 25 per cent., were from England and Wales; 111 were from Ireland; 68 were from India; 209, or 15½ per cent., were from the British colonies; and 26 were from foreign countries. The number of women attending extra-academical lectures with a view to graduation in medicine in the University was 92. The following degrees were granted during 1900:—Master of Arts (M.A.), 125 (including 25 women); Doctor of Philosophy (D.Phil.), 1; Bachelor of Science (B.Sc.), 26; Doctor of Science (D.Sc.), 3; Bachelor of Divinity (B.D.), 3; Bachelor of Laws (LL.B.), 7; Bachelor of Medicine and Master in Surgery (M.B., C.M.), 15; Bachelor of Medicine and Bachelor of Surgery (M.B., Ch.B.), 180 (including 18 women); and Doctor of Medicine (M.D.), 53. The General Council of the University now numbers 8883. The schoolmasters' diploma was conferred on 14 candidates. For the first time in the history of the University the honorary degree of Doctor of Laws (LL.D) was conferred on a woman, Miss E. A. Ormerod, F.R.Nat.Soc., F.E.S., of St. Albans. The local examinations were to be discontinued after the examinations in June. 1901. The total annual value of the University Fellowships, scholarships, bursaries, and prizes now amounted to about £17,820. The first ordinance of the University Court which related to the separation of the teaching of forensic medicine and public health had been approved by the Queen in Council and arrangements were being made to bring its provisions into operation at an early date. The re-cataloguing of the University library for which a portion of Sir William Fraser's bequest had been set apart, was now being carried out under supervision by a special staff of eight cataloguers. By the end of November over 106,000 volumes had been catalogued in more than 90,000 entries and 11,000 cross references. This is believed to be about half the contents of the library. A large special fund for the purchase of standard works was a pressing necessity, it being at present almost impossible to purchase expensive volumes in many branches of science which a well-equipped university library ought to possess. The want of funds was also much felt in connexion with the increasingly large number of works and periodicals connected with scientific research. Three vacancies in the professoriate had occurred during the year through the death of Sir Thomas Grainger Stewart, for 24 years professor of medicine and of clinical medicine; the death of Mr. George Frederick Armstrong, M.A., C.E., professor of engineering and the resignation of Professor John Philip Wood, W.S., of the chair of Conveyancing. The chair of Medicine had been filled by the appointment of Dr. John Wyllie, and Mr. John Little Mounsey, W.S., had succeeded Professor Wood. The chair of Engineering had not yet been filled up. Sir John Batty Tuke had been elected as member of Parliament for the universities of Edinburgh and St. Andrews, in room of Sir W. O. Priestley, whose death had occurred in April. The construction of "The John Usher Institute of Public Health," for which the University was indebted to the munificence of Sir John Usher of Norton, Bart., had during the year made considerable progress. In connexion with the war in South Africa the University had accepted the invitation of the Secretary of State for War to nominate candidates for commissions in various branches of the military service. The Senatus had granted special privileges to students who volunteered for active service and proposed to erect a memorial tablet in the M'Ewan Hall to those who fell in the war. Professor John Chiene had been given leave of absence to enable him to proceed to South Africa as consulting surgeon to Her Majesty's forces and a number of graduates and undergraduates of the University had been on the staff of the Edinburgh and East of Scotland Hospital which had been stationed at Norval's Pont.

Glasgow Royal Infirmary.

The decision of the committee concerned with the rebuilding of the infirmary in reference to the selection of a plan not advised by the assessor continues to excite some comment in the city, but the affair must now be regarded as a *chose jugée*. At a meeting held on Jan. 11th a report from the newly-appointed architect regarding the order and method of reconstruction was received and adopted. This involves the postponement of the re-erection of the front of the infirmary in the form of a Jubilee memorial until after the main part of the new hospital has been built, a decision demanded by the necessity for providing accommodation for patients, though certainly to be regretted on sentimental grounds. Concerning the financial aspect of the new undertaking it was stated that the committee had already nearly £100,000, and that with this they proposed to proceed with the erection of the north or surgical block. This it is calculated will occupy fully two years, after which a further appeal for funds will be necessary. Before the entire scheme is completed it is calculated that some eight or 10 years will have elapsed, and thus the claim upon the charitable public will assume a less severe front than if an attempt were made to raise the entire £240,000 at one time.

Glasgow Samaritan Hospital.

It has been decided by the medical staff, with the approval of the directors, to further develop the clinical teaching opportunities of the hospital by the institution of courses of lectures on gynæcology. The first course is to be given by Mr. J. Stuart Nairne, F.R.C.S. Edin., and is to commence on Jan. 23rd. The lectures are open to all medical practitioners.

Glasgow Sewage Disposal.

The town council of Glasgow, with a view to cultivate public interest in municipal undertakings, has instituted a course of popular lectures on the work of the several corporation departments and the fifth lecture of the series was delivered on Jan. 13th by Mr. A. B. M'Donald, city engineer. The subject dealt with was the disposal of the city sewage. Amongst other interesting items it was stated that there are at present 297 miles of subterranean sewers in the city, the greater part of which discharge into the harbour. The volume of sewage amounts to 55,000,000 gallons each day and it is calculated that each million gallons contribute 40 tons of pollution to the river. The sewage works constructed six years ago at Dalmarnock deal with some 16,000,000 gallons of sewage daily and in this proportion diminish the objectionable matter introduced into the Clyde, which still, however, receives daily some 1560 tons of sewage sludge. It has now been decided by the construction of 30 miles of river sewers to intercept the whole drainage which at present enters the river and to carry it beyond the city boundary where it is to be purified by the precipitation and filtration method now in operation at Dalmarnock. The works designed to effect this will, with the sole exception of the London main drainage area, be the largest in the world, and will serve an area of 29 square miles, which is to include not only Glasgow but a number of neighbouring towns. The

volumes to be dealt with, including rainfall, are estimated at 160,000,000 gallons daily.

Glasgow University.

The memorial window to the late Principal Caird which has been placed in the Bute Hall was unveiled on Jan. 12th in the presence of a large company. Among those taking part in the ceremony were Principal Story, the Master of Baliol (Dr. Edward Caird), Sir William T. Gairdner, K.C.B., and Mr. James A. Campbell, M.P. The scheme for the extension and better equipment of the University is about to take definite shape and the public will shortly have an opportunity of sending in their subscriptions. It is announced that a sum of £21 000 has already been promised. The executive committee has been appointed and includes the names of Professor J. G. McKendrick, Professor J. Glaister, and Professor R. Stockman as representatives of the medical faculty. On the motion of Dr. D. C. McVail the University Court has approved of the principle of the institution of a summer session in the faculty of arts and has requested the Senate to consider and advise on the question.—Professor De Burgh Birch, of the Yorkshire College, Leeds, has been appointed an examiner in physiology and Dr. James Ritchie, of Oxford University, an examiner in pathology. The Gifford lectures on Natural Religion during the present session are being delivered by Dr. Edward Caird, formerly professor of moral philosophy in the University.

Jan. 14th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Noxious Gases in Dwelling-houses.

THE simultaneous deaths of two persons well known in the fashionable world of Paris from some cause which remains as yet undiscovered (I will say at once that either suicide or homicide is out of the question) has turned the attention of hygienists to the escape of toxic gases either from a stove in the house itself or in that of a neighbour. Cases of asphyxiation by carbonic oxide, which were very common when slow-combustion stoves of the Choubersky type were so much in use, have of late become less frequent since this kind of stove has been less in use. But they probably throw a light on the decease of certain persons found dead and cold in bed whose deaths might easily be put down to a ruptured aneurysm or some such cause but which medical men too often recognised as due to carbonic oxide coming from a stove in the room or, more treacherously still, through faults in the chimney of a neighbour's house who used this method of warming. It is true that the experts have not so far irrefutably demonstrated that the deaths of Monsieur and Madame T—— were due to carbonic oxide poisoning, and experiments are still being made with animals placed in the room with the suspected stove alight. But owing to the position of the victims widespread excitement has been aroused, and the fatality has done more to cause the subject to be threshed out than all the reports of engineers for 20 years. As a matter of fact I may say that a scandal of any kind does more to bring about administrative or moral improvement than anything else. The Prefect of Police has accordingly just nominated a committee composed of engineers, hygienists, and architects whose duties are altogether novel. If any tenant complains of noxious smells from the chimney and the landlord maintains that these are quite usual, that everything is in perfect order, and that no alteration is necessary, the committee will examine into the tenant's case, and if they find his complaint justified the landlord will have to carry out the necessary repairs. If he refuses the committee will order the work to be done and will charge the expense to the landlord.

The Association of Medical Men of the Seine and Hospital Reform.

The last meeting of the Association of Medical Men of the Seine was extremely interesting and some very important decisions were arrived at. After an admirable paper by M. Jamin, the President, entitled "Optima Medicorum Concordia," had been read, M. Philippeau, the treasurer, read his report, which, among other things, showed that the association had a balance in hand of 10,000 francs. The association then elected 125 new members and also nominated its council for 1901. The yearly subscription was reduced from 15 to 10 francs, and it was agreed that fresh blood should be introduced into the council, only members of the managing committee being eligible for re-election. The sitting then became very animated over the discussion on the report of M. Thiery on hospital abuse and gratuitous medical advice, and in reference to these questions M. Dorison presented the demands of the medical men attached to the Bureaux de Bienfaisance. These were as follows. The Medical Society of the Bureaux de Bienfaisance, considering that the system of out-patient hospital relief (1) does not practise a proper sorting out of the persons who apply for relief so that only the poor, who alone have the right to gratuitous advice and medicine, are selected; (2) is not now justified as formerly by the presence of the senior medical officers; and (3) is simply since the creation of the dispensaries a replica (*double emploi*) of the work carried on by the Bureaux de Bienfaisance, except that it does not supply medicine (a fact which is equivalent to saying that the hospital out-patient system only provides for persons who can pay for their medicine and therefore for those very people for whom gratuitous advice was not provided)—the association, taking all this into consideration, resolves: (*a*) that the out-patient departments of hospitals should be done away with; and (*b*) that admission orders for the hospitals should only be provided by the medical officers of the Bureaux de Bienfaisance, except of course in cases of urgency as laid down in the regulations. M. Dorison was unable to be present and so could not defend the views brought forward by him or reply to questions, while the members of the association not having all the facts before them could not discuss the matter with full knowledge. These questions of charitable relief are difficult for anyone who has not studied them carefully and much more so when they are suddenly sprung upon an audience. Some of the members present had but the scantiest knowledge of the questions at issue; others went off into the discussion of parallel questions such as the right of the Assistance Publique to sell or buy sites, sanatoria, &c., all questions excellent in themselves but beside the mark on this occasion. Finally, however, the meeting, asked for its opinion upon the report of M. Dorison, unanimously passed the following motion:—

The Association of Medical Men of the Seine hereby resolves that the out-patient department of the hospitals should be done away with.

The question of admission to the hospitals, which was somewhat more delicate, gave rise to a long debate. Finally, the following motion, standing in the names of M. Mabec and M. Le Baron, was carried:—

The Association of Medical Men of the Seine assembled in general meeting resolves, that hospital treatment should be reserved solely for the poor and needy, and should be absolutely gratuitous.

A special committee was appointed to consider ways and means for bringing about this result.

Total Gastrectomy; Recovery.

At a meeting of the Academy of Medicine held on Jan. 8th, M. Boeckel read a paper upon the case of a woman, aged 38 years, upon whom he had performed total gastrectomy some months ago for a malignant growth supervening upon an old ulcer. This is the first operation of the kind which has been performed in France, and M. Boeckel remarked that the operation was not only compatible with life, but it brought about a great improvement in the condition of the patient. If the new growth were well defined and the neighbouring organs were healthy the operation might well be successful. Whether absolutely so M. Boeckel could not at present say, but that it would be successful for a certain time the three cases which had been reported in other countries and that by M. Boeckel himself showed without doubt. After the opening of the abdomen the operation was divided into five stages, as follows: (1) the freeing of the greater curvature by division of the gastro-colic ligament; (2) the freeing of the upper pole of the stomach by dividing the cardiac end when clamped between two pairs of forceps; (3) the freeing of the lesser curvature by division of the gastro-hepatic ligament; (4) the freeing of the lower pole of the stomach by dividing the first part of the duodenum clamped in the same way as the cardiac end; (5) the union of the cardiac end with the duodenum. Stitching the abdominal wall, no drainage being employed, finished the operation. M. Boeckel's patient made an uninterrupted recovery. The wound united by first intention, no fistula resulted, and the patient got up on the twenty-second day and left the hospital on the thirty-third day. The

digestive functions were soon re-established and were satisfactorily performed so long as the patient was fed with small quantities of easily digested food at frequent intervals. As showing that assimilation was properly carried on he would mention that the patient gained 20 pounds in weight.

Jan. 16th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Case of Professor Neisser.

THE incident in which Professor Neisser figured prominently, as mentioned in THE LANCET of March 31st, 1900, p. 970, seems now to be closed. It will be remembered that he was censured both in Parliament and in the daily newspapers for having, as his detractors alleged, performed inoculations of syphilitic virus on patients in his clinic; the actual facts, however, were of a much less culpable nature, for the experiments in question were in reality injections of the sterilised blood serum of syphilitic persons given to prostitutes and to two children in the hope of producing immunity. In the Parliamentary debate which took place some months ago the Minister of Public Instruction stated that the experiments had not been lightly undertaken but had been prompted by an eminently humane motive. Professor Neisser had, however, made the injections without the consent of the patients, and a prosecution was therefore resolved on, but as the alleged offence had been committed six years ago proceedings could not be taken in an ordinary court of law. Another way was accordingly found. Professor Neisser holds an appointment at a State university, and being therefore an official responsible to the Government the Government prosecuted him before a court of discipline. Several patients and some of the students and members of the medical staff of the clinic who had assisted at the experiments were summoned as witnesses, but owing to the long period which had elapsed since the occurrences in question much time was consumed before the addresses of all the witnesses could be ascertained, so that the decision of the court was given only a few days ago—namely, more than eight months after the debate in Parliament. The proceedings before a court of discipline are never public, so that no particulars can be given except that the accused was declared guilty of conduct unbecoming his position as a professor at a State university; he has not been removed from his appointment as professor, but he has been ordered to pay a fine and has been severely reprimanded. It is to be hoped that the matter is now at an end and that public feeling, which was at one time greatly excited by the misrepresentations that were current, will now be appeased. The Minister of Public Instruction has also addressed a circular to the principal officers of clinics, whether in connexion with universities or not, drawing their attention to the case of Professor Neisser, advising them to abstain from experiments which are not directly concerned with the cure of disease or the production of immunity, and stating that the law does not allow any dangerous treatment or operation to be undertaken without the patient's consent. He also makes the principal officers responsible for any misdemeanour in this respect that may be committed by their assistants or other members of the staff.

An Unauthorised Necropsy.

Another alleged medical scandal has been reported lately by the Berlin daily newspapers. Dr. Hebold, the chief medical officer of the Berlin Municipal Asylum for Epileptics at Wuhlgarten, is said to have made a post-mortem examination of an inmate of the asylum although the parents of the deceased had expressly declined to allow the body to be opened. The deceased was described as being one of the worst cases in the asylum, having sometimes as many as 50 fits in a day. Dr. Hebold removed the brain immediately after death and ordered a wreath to be put on the head to conceal the traces of the necropsy. But his most blameable action was that he exhumed the body on the night after the funeral and removed the head, which was afterwards preserved in alcohol. These facts were disclosed by an attendant who had been dismissed by Dr. Hebold and who in this way revenged himself upon his former master. Dr. Hebold, together with two attendants at the asylum who had assisted him, will be prosecuted, and the municipal council will perhaps be forced by public opinion to dismiss him from his office. Apparently Dr. Hebold has been misled by his scientific zeal to commit a grave misdemeanour repugnant to the majority of the medical profession.

Plica Polonica.

A collective investigation on the frequency of plica polonica in the eastern districts of Prussia has been made by the medical department. The localities which formed the subject of inquiry were the districts of Posen, Bromberg, and Marienwerder, where the greater part of the population are Poles. It was stated that people suffering from plica polonica were found in 385 towns and villages of the district of Marienwerder, in 582 of Bromberg, and in 820 of Posen. The number of patients was 1372, 1858, and 2507 respectively, of whom 682 were males and 5055 were females. The great majority were Poles. It is very difficult to eradicate this repulsive disease because the general ignorance of the population is a serious impediment to the adoption of hygienic measures. Moreover, some of these people are of opinion that plica polonica is a kind of prophylactic against certain diseases and that it would be dangerous to clean the hair in these cases.

Disinfection of Sponges.

A new method for the disinfection of sponges has been described by Dr. Elsberg of New York in the *Centralblatt für Chirurgie*. He maintains the impossibility of disinfecting sponges by boiling or by steam, as is done in the case of other surgical materials, and proposes the following method. The sponges are put for 24 hours in an 8 per cent. solution of hydrochloric acid to clear them from calcareous matter and dirt and are then washed in water. They are afterwards boiled for from five to 20 minutes in a solution of 10 parts of potash and 20 parts of tannic acid in 1000 parts of water and washed again in sterilised water or in a solution of carbolic acid till the brown colour of the tannate of potash has disappeared. They are finally preserved in a solution containing from 2 to 5 per cent. of carbolic acid. By this treatment the sponges do not lose any of their good qualities; they remain porous, elastic, and soft, even although they may have been boiled several times. By bacteriological examination it was found that large sponges infected with streptococci and the bacillus of anthrax and its spores proved to be absolutely sterile after five minutes' boiling in the above solution. Dr. Elsberg therefore recommends a return to the use of sponges which have of late almost disappeared from operating-rooms owing to the fear of their conveying infection.

Jan. 14th.

Obituary.

ARCHIBALD HAMILTON JACOB, M.D. T.C.D., F.R.C.S. IREL.

DR. ARCHIBALD HAMILTON JACOB died on Jan. 12th at his residence, Ely-place, Dublin, from an attack of bronchial asthma, from which disease he had been a sufferer for some years. By his death at 63 years of age his medical friends and colleagues in Dublin and the medical profession all over Ireland have lost a surgeon and colleague whose place it will be very difficult to fill. Dr. Jacob obtained the M.D. of Trinity College, Dublin, in 1862, and has been a prominent Fellow of the Royal College of Surgeons in Ireland for 37 years. He filled the position of professor of ophthalmology in that College for many years, was a senior of its Council and in 1882 was unanimously elected its secretary. In 1866 he succeeded his eminent father as ophthalmic surgeon to the City of Dublin Hospital and in 1872 he opened the Dublin Ear and Eye Infirmary, acting as its chief surgeon, while he subsequently filled the office of ophthalmic surgeon to the House of Industry Hospitals. For some years, while chief surgeon to the Dublin Eye and Ear Infirmary he was also ophthalmic surgeon to the Richmond, Whitworth, and Hardwicke Hospitals and to the City of Dublin Hospital as well.

In 1880 he had the honour of being appointed oculist in ordinary to his Excellency the Lord Lieutenant of Ireland—Earl Cowper—a position which he has filled under all succeeding Viceroys to the present time. There was no position of honour in Dublin medicine to which Dr. Jacob could

not have attained, but he always preferred largely to devote his talents and his unselfish energies to the advancement of his profession in public paths. He served as President of the Irish Medical Association, and during his term of office and ever since he devoted much of his time to the interests of his poorer brethren of the medical profession and to the advancement of their just claims. He was chief editor and proprietor of the *Medical Press and Circular*, and for many years he proved a fearless and able advocate of the rights of the Poor-law medical practitioners of Ireland to an adequate salary, independence, and pension in old age. He inherited the ability and public spirit of his father, and in advocating a cause by eloquent speech and pen never stayed to think whether he was serving his own personal interest and his own professional welfare. Those for whom he did so much cannot soon forget him, and his memory will long be held in high repute in medical and private circles in Dublin, not only for his eminent ability but for his fearless, upright, and kindly character. The Council and Fellows of the Royal College of Surgeons in Ireland attended his funeral on Wednesday, Jan. 16th, when his remains were removed from the house where he and his father lived for so many years at Ely-place.

EUGENE GODDARD, M.D. DURH.

A WIDE circle of friends and patients will be grieved to hear of the death of Dr. Eugene Goddard of Highbury New Park, N. After a morning's hard work he was seized with a rigor followed by faintness, frequent vomiting, and indications of abdominal mischief which ultimately developed into general peritonitis resulting in death on Jan. 13th, the seventh day of his illness. Those who had the pleasure and advantage of Dr. Goddard's acquaintance will severely feel their loss. To a mind generally well stocked were added remarkable clearness and fluency of language and a fund of humour which never failed to give point to his words. Thorough in all he undertook, prompt and decided in action, scrupulously upright and fearless, he was always a courteous gentleman. He seemed to impart brightness to all around him and most of all to those who sought his professional aid, and great was the confidence which his patients placed in him and the esteem with which they regarded him. Dr. Goddard recognised the gravity of his illness and met his death at the comparatively early age of 60 years with cheerful resignation and courage.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Ephraim Ingals, formerly Professor of Materia Medica and of Forensic Medicine in the Rush Medical College, Chicago.—Dr. Dubrueil, a well-known Montpellier surgeon.—Dr. Duclos of Tours, Corresponding Member of the Paris Academy of Medicine.

Medical News.

EXETER WATER SCHEME.—It is estimated that the new water scheme for Exeter will cost about £48,000.

IN MEMORIAM.—For the endowment of a bed, in memoriam, the treasurer of Guy's Hospital has received £1000 from "G. R."

APPOINTMENT OF A MEDICAL OFFICER OF HEALTH.—At the meeting of the Rhondda District Council held on Jan. 11th Dr. D. J. Jenkins, assistant medical officer of health for Bethnal-green, was appointed medical officer of health for the Rhondda district. There were 29 candidates.

HEALTH OF BRISTOL.—At the meeting of the Bristol Health Committee held on Jan. 8th Dr. D. S. Davies, the medical officer of health, reported that 8972 births were registered during 1900, giving a birth-rate of 27·8 per 1000, compared with 29 per 1000 for 1899. This is the lowest birth-rate which Dr. Davies has recorded in Bristol. The number of deaths was 5397, equal to a rate of 16·6 per 1000, as against 18·2 per 1000 for 1899. The infantile mortality under one year per 1000 births was 182, which is the lowest recorded for the past ten years. The deaths registered from the principal zymotic diseases were equivalent to a rate of 1·8 per 1000, the same as recorded in the previous year.

LUNACY IN GLOUCESTERSHIRE.—At the meeting of the Gloucestershire County Council held on Jan. 7th it was reported that 243 patients had been admitted to the Gloucestershire County Lunatic Asylum in 1900, against 292 in 1899; the average number resident in the asylums were 1054, against 1066 in the preceding year. Profit to the amount of £2651. which had accrued from private and other patients, had been applied to the reduction of the county rate. The charge for patients was now 9*s*. per week.

PLYMOUTH ROYAL EYE INFIRMARY.—The annual meeting of the supporters of this institution was held on Jan. 9th, under the presidency of Mr. H. Serpell. The report stated that 2289 patients had been treated during 1900, including 249 in-patients. 1980 patients were treated in 1899. The financial statement showed that the income was satisfactory and that the expenditure amounted to £1073, against £813 in the previous year. The cost of the new buildings amounted to £16,569. The committee acknowledged £1000 from Sir Massey Lopes towards the endowment fund and mentioned that a similar amount was given by him in 1899. As the necessary expenditure in carrying out the work of the new infirmary will be great the committee appeal for increased subscriptions.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the directors of this society was held on Jan. 9th, at 11, Chandos-street, W., the President, Mr. Christopher Heath, being in the chair. 16 new members were elected, and the deaths of Dr. Potter, acting treasurer, and Dr. Stewart were reported. Mr. Christopher Heath proposed from the chair, seconded by Dr. C. J. Cullingworth, as follows:—

> The quarterly court of directors of the Society for Relief of Widows and Orphans of Medical Men desires to record its great regret at the recent death of Dr. Potter, acting treasurer, a most energetic officer of the society, and also desires to express to Mrs. Potter its deep sympathy with her and her family in their bereavement.

Fresh applications for relief were read from two widows and grants at the rate of £50 per annum were made to them. It was resolved that a sum of £1229 10*s*. be distributed among the 49 widows, 12 orphans, and six recipients from the Copeland Funds now in receipt of grants. The Christmas present, amounting to £531, had been given on Dec. 17th. The expenses of the quarter were £78 9*s*.

ROYAL METEOROLOGICAL SOCIETY.—The annual general meeting of this society was held on Dec. 16th at the house of the Institution of Civil Engineers, Great George-street, Westminster. Dr. C Theodore Williams delivered the presidential address, taking for his subject "The Climate of Norway and its Factors." He considered that the meteorology of Norway should prove an attractive study for the society as having much in common with that of our country, both the Norwegian and the British shores being influenced by the same Gulf Stream and having their winters and summers tempered by the same equalising agency. The factors which influenced the climate were (1) the insular character of the country; (2) the distribution of the mountain ranges, which explained to a large extent the rainfall; (3) the waters of the ocean, which from a variety of circumstances came into close connexion with much of the country and thus tempered extremes of climate; and (4) the sun, which in that latitude remained in the summer long above the horizon and in the winter long below it. The address was illustrated by a large number of lantern slides of Norwegian scenery, embracing mountains, glaciers, floods, &c.

THE ROYAL COMMISSION ON SEWAGE DISPOSAL.—Sir Michael Foster, M.P., F.R.S., Major-General Phipps Carey, Colonel Harding, and Mr. J. J. Willis, the visiting members of the Commission, recently visited the Reigate Corporation sewage works at Redhill to inspect the Candy-Caink Revolving Sprinkler System and Polarite Oxidation Bacterial Bed which have been in operation there for over two years. They were met at Redhill by the mayor, the borough engineer (Mr. W. H. Prescott), Mr. Frank Candy, and Mr. F. Pullen Candy, and they made a careful investigation of the system. It is claimed for this system that by means of the

polarite oxidising aerobic bed, fed in an intermittent continuous manner by the Candy-Caink Revolving Sprinklers, with about half an hour's treatment a very strong sewage containing tannery and brewery refuse can be converted into a bright, odourless, and oxygenated effluent. After the inspection the members of the Royal Commission adjourned to the Town Hall to take the evidence of Mr. Frank Candy, General Manager of the International Purification Syndicate, and of the borough engineer, Mr. Prescott, who explained the working of the system and tendered analytical results showing an average purification of 97 per cent.

PRESENTATIONS TO MEDICAL MEN.—A large number of the residents of Llandovery assembled on Jan. 3rd in the principal public thoroughfare of the town to witness the unveiling of a massive granite fountain erected to the memory of the late Mr. Frederick W. Lewis, M.B. Lond., of Stoke Newington-road, by his devoted friends, the Rev. Thomas Evans, J.P., and Mrs. Evans, formerly of Henllys, at a cost of £500.—On Jan. 1st Mr. John Moorhead, M.D.R.U.I., M.R.C.S. Eng., of Weymouth, on his retirement and in recognition and appreciation of his 43 years' valuable services to the Weymouth Royal Hospital, was presented by the Mayor of the borough on behalf of the subscribers with a silver epergne and candelabrum, accompanied by an album containing an artistically illuminated address. Dr. Moorhead was the first honorary medical officer to the institution.—Mr. Hunter U. Walker, L.R.C.P., L.R.C.S. Edin., and Mrs. Hunter Walker of Clapton, have been the recipients of a silver inkstand and pens from the ladies of the Clapton Presbyterian Church in acknowledgment of their services in conducting a course of ambulance lectures connected with the St. John Ambulance Association. All the members of the class obtained the Red Cross certificates.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

ALEXANDER, JOHN DAVEY, L.R.C.P. Ed., L.F.P.S. Glasg., has been re-appointed Medical Officer of Health for the Porthcawl (Glamorganshire) Urban District.

BAILEY, BERNARD E. G., M.R.C.S., L.R.C.P., has been appointed House Physician to the East London Hospital for Children and Dispensary for Women, Shadwell, E., vice Oswin Shields.

BEESLEY, CLARENCE, L.R.C.P., L.R.C.S., D.P.H. Cantab., has been appointed Medical Officer of Health to the Budleigh Salterton Urban District, vice A. W. Kempe, resigned.

CONSTANT, FREDERICK, L.D.S. Eng., has been appointed Honorary Dental Surgeon to the Gravesend Hospital.

CULLEN, J. J., L.R.C.P., L.R.C.S. Irel., has been re-appointed Medical Officer, Castleknock and Blanchardstown District, county Dublin.

DICKENSON, G. O. M., M.B., B.S. Durham, has been appointed Assistant Medical Officer, Northumberland County Asylum, Morpeth.

EDWARDS, W. LLOYD, L.R.C.P. Lond., M.R.C.S., has been appointed to the Medical Charge of the troops at Barry Island, South Wales.

FORREST, J. G. S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Workhouse, Thingoe Union, vice C. E. Priestley, resigned.

INGLE, CHARLES DURBAN, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the No. 2A district of the Langport (Somerset) Union.

JONES, M. P., L.R.C.P. Lond., F.R.C.S. Eng., has been appointed Honorary Consulting Physician to the Royal Infirmary, Alfreton.

LISTER, THOMAS DAVID, M.D. Lond., M.R.C.P. Lond., has been appointed Assistant Physician to the Royal Hospital for Children and Women, Waterloo-road, London.

MACNAMARA, J. P., L.R.C.P. Lond., L.R.C.S. Irel., has been appointed Medical Officer of the Ladywell Workhouse, St. Olave's Union.

MARTIN, JOHN MIDDLETON, B.A., M.B., B.Ch., D.P.H. Cantab., L.S.A., has been appointed Medical Officer of Health for the Nailsworth Urban District Council (Gloucestershire), vice Thomas Partridge, resigned.

NIALL, EUGENE M., M.B. Lond., has been appointed House Surgeon to the West London Hospital, Hammersmith-road.

PENNY, FRANCIS, M.R.C.S., L.S.A., has been appointed a Medical Officer with the troops in South Africa.

PERCIVAL, BEAUMONT, M.B. Cantab., M.R.C.S., has been appointed House Surgeon to the Northampton General Infirmary.

RIGBY, HUGH MALLINSON, M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Surgeon to the Poplar Hospital for Accidents, London.

ROSS, H., M.B., C.M., Aberd., has been appointed Medical Officer, Stratford-on-Avon Hospital.

SARGENT, P. W. G., M.B., B.C. Cantab., L.R.C.P. Lond., M.R.C.S., has been appointed Surgical Registrar, St. Thomas's Hospital, London.

SHIACH, SAMUEL ALLEN, M.D., C.M. Edin., has been appointed Medical Officer and Public Vaccinator for the St. Mellons District by the Newport (Mon.) Board of Guardians.

SPARKS, C. E., M.B., B.C. Cantab., has been appointed, *pro tem*, Medical Officer for Hersham District, Chertsey Union.

STEUART, M. BABINGTON, M.B., C.M. Edin., has been appointed District Medical Officer for Bovey Tracey and Ilsington (North Devon). Corrected notice.

TURNER, T. W., L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer, Woodstock Union, vice H. Saunders.

WALKER, HUNTER URQUHART, L.R.C.P., L.R.C.S. Edin., has been appointed by the Home Secretary Divisional Surgeon of the Police for Hackney, N.E.

WARBURTON, W. P., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Workhouse and District Medical Officer, Skirlaugh Union, vice C. Soloman, resigned.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRKENHEAD BOROUGH HOSPITAL.—Honorary Dentist.

BIRMINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Medical Officer. Salary £100 per annum, with furnished apartments, rations (which do not include alcoholic liquors), coals, gas, laundry, and attendance.

BOLTON INFIRMARY AND DISPENSARY.—Senior House Surgeon. Salary £120 per annum, with furnished apartments, board, and attendance.

BOROUGH OF RICHMOND (SURREY).—Medical Officer of Health. Salary £450 per annum, and will be recommended for appointment as Visiting Medical Officer to the Borough of Richmond (Surrey) and Heston and Isleworth Urban District Joint Isolation Hospital at an additional salary of £50 per annum.

BRADFORD ROYAL INFIRMARY.—Dispensary Surgeon. Salary £100 per annum, with board and residence.

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY, Bridgnorth.—House Surgeon. Salary £80, with board and lodgings in the infirmary.

BRISTOL CITY HOSPITALS.—Resident Medical Officer at the Ham Green Fever Hospital. Salary £150 per annum, with board, lodging, and washing.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant, tenable for three months on payment of £8 8s.

CHORLTON-UPON-MEDLOCK DISPENSARY, Manchester.—Resident House Surgeon, unmarried. Salary £120 a year, with furnished rooms and attendance.

COUNTY ASYLUM, Shrewsbury.—Junior Assistant Medical Officer. Salary £130 per annum, rising by £10 a year to £150, with board, lodging, and washing.

DARLINGTON HOSPITAL AND DISPENSARY.—House Surgeon, unmarried. Salary £100 per annum, with board and lodging, and an allowance for cab hire.

DENTAL HOSPITAL OF LONDON AND LONDON SCHOOL OF DENTAL SURGERY, Leicester-square, W.C.—Demonstrator to superintend the teaching and work of the new students, &c. Honorarium £200 per annum. Also two Demonstrators to assist the Senior Students, one at an honorarium of £100 per annum, and one at an honorarium of £80 per annum.

DONCASTER GENERAL INFIRMARY AND DISPENSARY.—Assistant House Surgeon, unmarried. Board and residence provided.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark-bridge-road, London.—Senior Resident Medical Officer. Salary £70, with board and washing. Also Pathologist. Salary 100 guineas per annum.

FISHERTON HOUSE ASYLUM, Salisbury.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and washing.

GENERAL HOSPITAL, Nottingham.—House Physician for two years. Salary £100, rising £10 a year to £120, with board, lodging, and washing.

GUILDFORD UNION.—District Medical Officer and Public Vaccinator, Woking District. Salary £80 per annum and vaccination fees.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, W.C.—House Surgeon. Salary £20, with board and residence in the hospital.

HOSPITAL FOR WOMEN, Soho-square, London, W.—Assistant Physician, also Assistant Surgeon.

LEICESTER INFIRMARY.—Second Assistant House Surgeon. Salary £80 per annum, with board, apartments, and washing.

LINCOLN HOSPITAL FOR INSANE.—Locum Tenens for six weeks from about 6th of February. Three guineas a week.

LIVERPOOL STANLEY HOSPITAL.—Junior House Surgeon. Salary £70 per annum. Also Third House Surgeon as Ambulance Surgeon. Salary £70 per annum, with board, residence, and washing.

LONDON LOCK HOSPITAL.—House Surgeon to the Female Hospital. Salary £80 per annum, with board, lodging, and washing.

MILLER HOSPITAL and ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer, tenable for six months, with prospect of re-election as Senior. Salary at the rate of £60 per annum, with board, attendance, and washing.

MONKWEARMOUTH AND SOUTHWICK HOSPITAL, Sunderland.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Salary £140 per annum, all found except board.

OLDHAM INFIRMARY.—Senior House Surgeon. Salary £100 per annum, with board, residence, and washing.

PARISH OF ST. GILES, CAMBERWELL.—Assistant Medical Officer, twenty-one to thirty years of age, for the Workhouse at Gordon-road, Peckham. Salary £120 per annum, with furnished apartments outside the Workhouse, and an allowance of £1 1s. weekly in lieu of board and washing.

QUEEN ADELAIDE'S DISPENSARY, Bethnal-green, E.—Resident Medical Officer, unmarried, and under 35 years of age. Salary £100 per annum, with furnished apartments, coal, gas, and attendance.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Assistant Resident Medical Officer for four months. Salary at the rate of £50 per annum, with board, residence, and washing.

ROXBURGH DISTRICT ASYLUM, Melrose, N.B.—Assistant Medical Officer. Salary £110 per annum, with board, lodging, and washing.

ST. THOMAS'S HOSPITAL.—Assistant Surgeon. Must be a Fellow of the Royal College of Surgeons of England.

SCHOOL BOARD FOR LONDON—EVENING CONTINUATION SCHOOLS.—Lecturers and Examiners in First-Aid and Home Nursing. Qualified practitioners (men and women). Apply to the Clerk of the Evening Continuation Schools Committee, School Board for London, Victoria Embankment, W.C.

SEAMEN'S HOSPITAL SOCIETY.—Senior Dental Surgeon and also Junior Dental Surgeon. No salary, but first-class railway fare between London and the Hospitals will be allowed.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies for Certifying Surgeons under the Factory Acts at Bugbrooke, in the County of Northampton; at Petworth in the County of Surrey; at Nuneaton in the County of Warwick; and at West Linton in the County of Peebles.

TIVERTON (DEVONSHIRE) INFIRMARY AND DISPENSARY.—House Surgeon. Salary £80 and all found.

WESTERN GENERAL DISPENSARY, Marylebone-road, London.—Second House Surgeon, unmarried. Salary £75 per annum, with 10s. per month for washing, and board and residence.

WESTMINSTER HOSPITAL.—Obstetric Physician and also Assistant Obstetric Physician.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £110 a year, with board, lodging, and attendance.

Births, Marriages, and Deaths.

BIRTHS.

ANDREW.—On Jan. 9th, at Hendon, N.W., the wife of F. W. Andrew, M.R.C.S., L.R.C.P., of a daughter.

COLLARD.—On Jan. 13th, at Croydon, the wife of Stuartson Collard, F.R.C.S. Eng., of a daughter.

FOUNTAIN.—On Jan. 12th, at Arlington-park, Gunnersbury, W., the wife of R. Osborne Fountain, M.D., of a daughter.

GEORGE.—On Jan. 8th, at Port Isaac, Cornwall, the wife of R. Julyan George, M.D., of a son.

McDOUGALL.—On Jan. 12th, at Woodcote-road, Wallington, Surrey, the wife of William Stewart McDougall, M.B., C.M., of a son.

MORGAN.—On Jan. 16th, at 24, Grove Park, Camberwell, S.E., the wife of W. Ellis Morgan, M.R.C.S., L.R.C.P., L.M., of a daughter.

NOBLE.—On Jan. 13th, at Grove-road, Walthamstow, the wife of W. G. Noble, Surgeon, of a daughter.

PANTING.—On Jan. 10th, at Harvey House, Watton, Norfolk, the wife of John Panting, M.A., M.D., of a son.

PENFOLD.—On Jan. 10th, at Brownhill-gardens, Catford, the wife of Surgeon E. A. Penfold, R.N., of a daughter.

SARGENT.—On Jan. 11th, at 300, Commercial-road, E., the wife of G. E. H. Sargent, L.S.A. Lond., of a daughter.

TEBB.—On Jan. 15th, at 226, Finchley-road, Hampstead, Bertha, the wife of Albert E. Tebb, M.D., B.S. Lond., M.R.C.S., D.P.H., &c., of a son.

WESTBROOK.—On Jan. 14th, at Old Town, Clapham-common, S.W., the wife of Ernest Westbrook, L.R.C.P., of a son.

WHITCHER.—On Jan. 11th, the wife of Dr. Charles Edgar Whitcher, of Hove, Sussex, of a son.

MARRIAGE.

BOYCE—JOHNSTON.—On Jan. 9th, at Bromborough parish church, Cheshire. Robert William Boyce, M.B., Professor of Pathology, Liverpool University College, to Kate Ethel Johnston, second daughter of William Johnston, of Woodslee, Bromborough, Cheshire.

DEATHS.

CLAPPERTON.—On Jan. 10th, aged 60, James Clapperton, M.D., Broughton, Hampshire.

GODDARD.—On Jan. 13th, at his residence, Highbury New-park, N., Eugene Goddard, M.D., son of the late Leonard Morse Goddard, M.R.C.S., of Clerkenwell, aged 60.

JACKMAN.—On Jan. 11th, at 19, Wood View-gardens, Highgate, Thomas Smith Harrison Jackman, M.R.C.S. Eng., and L.R.C.P. Lond., late of 11, Stoke Newington-road.

HALIDAY.—On Jan. 10th, at Thicket-road, Anerley, Saunders Barton Haliday, Surgeon-Lieutenant-Colonel, Indian Medical Service, aged 57.

LEUMANN.—On Jan. 7th, suddenly, Bernard Henry Frederick Leumann, M.B, of Stanley-park-road, Wallington, in his 32nd year.

SYMES.—On Jan. 14th, J. G. Symes, M.R.C.S., &c., Southfield, Weymouth, in his 76th year.

TINLEY.—On Jan. 10th, at Sandsend, near Whitby, Thomas Tinley, M.D., J.P., aged 55 years.

WAYLEN.—On the 10th inst., at Guildford, Western Australia, Alfred Robert Waylen, M.D., late Colonial Surgeon, eldest son of the late Alfred Waylen of Devizes, Wilts, and of Perth, Western Australia, aged 67.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

MEDICAL ATTENDANCE ON WORKMEN.

TWO medical men practising at Bromley were obliged recently to have recourse to the county-court in order to obtain payment from a firm of timber merchants for attendance in the case of a workman who was injured in the course of his employment. The medical men appear to have on a previous occasion asked some question as to who was to remunerate them in the case of such accidents and to have received som vague answer from a person not clearly authorised to give it to the effect that it would be "all right," and evidence of this having been given His Honour Judge Emden seems to have been satisfied with it as evidence of a promise to pay, while he appears to have expressed in pretty plain terms his view of the defendants' conduct and to have laid particular stress upon their duty to make a definite arrangement as to the medical aid to be afforded to their workpeople in the case of accidents. The case was eventually settled, the plaintiffs accepting five guineas and costs to prevent further delay in the conclusion of the matter. The trial points to the difficulty which besets the medical man called in on an occasion of some urgency without a definite understanding as to the payment of his fees. It is often almost impossible to obtain a satisfactory undertaking with regard to them at the time when the service is rendered. Self-respecting firms take steps to have the business side of the transaction completed before the necessity for medical help arises.

THE REAFFORESTING OF IRELAND.

THE part which the vegetable kingdom plays in the economy of the life of man is generally recognised, but the connexion between arboriculture and the prosperity of a country is not so widely appreciated. Dr. Robert T. Cooper has published a pamphlet which deals with the neglected condition of arboriculture in Ireland, and this he is prepared to regard as the real grievance of that country. He pleads for a better study of the question in order that the British Government may be induced to reafforest the 2,000,000 or more acres of mountain land which at the present time are unproductive and subserve in no way to human interests He points out that trees are a natural agency for the diminution and even for the prevention of the ill-effects of all kinds of climatic vicissitudes. Large portions of the upland surfaces, now practically bare rocks, might if grown over with trees be sheltered from rain and storm and form important catchment areas for the supply of rivers, &c. Moreover, the roots of the trees growing in such positions bring about the cleavage of rocks and cause fissures through which the rain finds its way to underground strata, which, becoming subcharged with moisture, discharge their overflow in the form of springs of naturally filtered water. The decay of the vegetation and the action of its contained acids upon the rock naturally form a rich manurial mould which is slowly washed down to the low-lying expansions of the country. Torrential streams would disappear and rivers would be purer, floods less frequent, and bog slides rare. We cannot endorse the suggestion that a Hibernian millenium would follow upon systematic tree-planting in Ireland, but we found Dr. Cooper's pamphlet, which was part of a lecture delivered in the Rotunda Rooms last autumn, very interesting reading.

"PROFESSOR EASTBURN, A.M.S."

THE crimp who used to swindle seamen out of their wages and clothing is, we fancy, nearly, if not quite, extinct; but there are worse swindlers than crimps who not only rob people of money but of their health in addition. We are led to these remarks by a letter which we have received from a medical man inclosing a letter which was received by a patient of his, a seaman who has been foolish enough to apply for treatment to a quack "practising" in Glasgow and calling himself Professor Eastburn, A.M.S. Eastburn's letter is adorned with a portrait, presumably of himself, together with an eagle and the Stars and Stripes, so we presume that he claims to be a citizen of the United States. Our correspondent informs us that his patient suffered from chronic gleet, that he wrote to Eastburn and received in reply a string of questions to answer, and that he paid £11 for four months' treatment. The medicine was always the same and upon the patient writing to say that he was not improving Eastburn replied, "Continue the same medicine and send more money to complete the £14 originally arranged for." Our correspondent adds that his patient received six bottles of medicine for his £11 and that Eastburn's fee to wealthy patients is from £40 to £50, but that the lowest sum for which he undertakes a case is £14. We cannot see why the legislature, which is rightly hard upon thieving should not find some way of putting down swindlers of this description. Such frauds are, in addition to their dishonesty, cruel to a degree. Eastburn is said to do a large business with seamen trading to and from Glasgow.

"VACCINATION FEES."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Dec. 22nd, 1900 (p. 1854), under your Answers to Correspondents, you have given a reply to "Public Vaccinator" which I think is hardly correct. You state that a public vaccinator is not entitled to charge 1*s* birth fee for children under four months vaccinated by himself. Upon reference to the Vaccination Order, 1898, Article III., Sec. 2, the law says: "The number of children in respect of whom payments are to be made under paragraph (*a*) of this article shall be the number of children in the lists to be sent by the vaccination officer to the public vaccinator as provided by paragraph 6 (*a*) of the Instructions to Vaccination Officers in the Fourth Schedule hereto, together with the number of children not included in such lists but vaccinated by the public vaccinator himself." This matter was pointed out to my guardians by the auditors and they have consequently paid me every quarter as above, and I should advise your correspondent "Public Vaccinator" to insist on payments being made to him. At the end of each quarter my guardians give me a list of children who have been reported by me on Form H as "postponed," with a request that I should continue to visit the children and report further. I maintain they have no authority to make this request and I have lately refused to observe the same. May I ask: 1. What should be done by the public vaccinator when a case has been postponed, say, one month? Is it his duty to call again, for there are no instructions in the Act for any other than the original visit? 2. What should be done by the public vaccinator if when he makes his pre-arranged visit he finds the door locked? 3. Have the guardians any authority to give orders to the public vaccinator which are not included in his original contract with them?

I am, Sirs, yours faithfully,

Jan. 9th, 1901. ANOTHER PUBLIC VACCINATOR.

THE PROGRESSIVE MEDICAL ALLIANCE AND OTHERS.

IN our issue of Sept. 29th, 1900, p. 981, we reprinted the greater portion of a four-page hand-bill issued by the Progressive Medical Alliance and suggested that the General Medical Council might take some notice of the graduates of British Universities whom the Alliance claims to have upon its staff and also of the lady physician. We have now received another bill of the Progressive Medical Alliance through a medical man who had it from one of his patients, the bill having been passed under the door of the patient's house. Coincidently we received from a second medical man the following bill emanating from an independent practitioner which had also been pushed under the door of the house of a patient of his:—

"Consultation, with or without medicine, One Shilling; Medicine 6*d.*
Examination, with or without certificate, Half-a-crown for Clubs, Insurances or other Societies.
At home Nine to Eleven o'clock every morning, at Three o'clock every Afternoon; and Seven to Eight o'clock every evening.
Sundays after 6 o'clock. Forenoon by Appointment.
Medicine and Attendance, Half-a-crown each week or part of a week.
No further charge for the remainder of the week. Seven days to the week, commencing at any time.
Vaccination, One Shilling; from Calf Lymph, Half-a-crown.
Teeth Extracted One Shilling each; Painless, Half-a-crown.
Teeth Stopped Half-a-crown each; and Artificial Teeth, One Guinea the Set.
Visiting Payments after Ten o'clock at Night, and before Eight o'clock in the Morning, according to time and distance.
Attendance includes Visits when patients are not able to attend at the Doctor's Surgery.
Midwifery, Accouchements, Confinements, Half-a-guinea. Fifteen shillings, One Guinea, and Two Guineas, according to agreement beforehand, when half the fee must be paid. The fee includes One week's after attendance and medicine.
Drugs, Medicines, and Proprietary Articles at Cash Prices.
Diseases of Women and Children attended.
Apply—
DR. ——,
Physician, Apothecary, Accoucheur and Surgeon.

Teeth Extracted, at any hour guaranteed painless.
The above are only for Cash payments, paid in advance."

Now, the Progressive Medical Alliance is obviously a quack association of the worst type and we think that no greater reproof could be given to a qualified man than to put on record the fact that he advertises himself in the same way as the Progressive Medical Alliance. We advise the correspondent who sent us the circular to communicate with the University from which Dr. —— received his degree. For this occasion we have withheld the offending practitioner's name, but we shall give him full publicity if his methods remain unaltered.

NEW DOMESTIC FILTERS.

WE have received from the London and General Water Purifying Company, Limited, of 157, Strand, W.C., two new designs in domestic water filters. One is described as a pump filter which consists of a pump connected with a filter tube of unglazed porcelain which has been shown to be in a series of severe bacteriological experiments germ-proof, yielding a filtrate absolutely sterile. The many valuable sanitary applications to which this portable filter may be put are obvious. The other filter is a main-service filter which may be connected directly with the supply. This consists of a small metal chamber, bell-shaped, packed with small pieces of marble and closed at the top with a disc of unglazed porcelain consisting of the same germ-proof material of which the pump-filter is made. Both filters are made in accordance with modern views on the subject, but we hope shortly to submit them to independent experiment with the view of being able to state their actual efficiency.

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—Can any of your readers inform me of a home or institution where a long-standing (four years) case of hysteria in a young man might be treated at a small expense? I shall be much obliged.

I am, Sirs, yours faithfully,

Jan. 8th, 1901. YOUNG PRACTITIONER.

"THE CASE OF DR. PATRICK QUINLIVAN."

THE following further subscriptions have been received towards the fund on behalf of the widow of the late Dr. Quinlivan. The fund is now closed. Dr. C. Y. Pearson (Cork), £1 1*s.*; Mr. W. A. Farebrother, £1 1*s.*; Mr. Holland Wright, £1 1*s.*; C. F. W., 10*s.*

G. P.—There can be no hard-and-fast rules in the matter. The medical officer to a medical aid association has to remember that he must not take advantage of the position to advertise himself in any way at the expense of his brother practitioners. Any wide publication of his titles on door-plates or in circulars must be avoided, and as all canvassing on the part of the association is apt to be an advertisement of the medical officer he must in his own interests use his influence to prevent such proceedings.

J. A. D. can make inquiry in our columns for such a home, giving a name and address where answers will reach him. We do not know of any institution exactly meeting his wants.

Leicester.—The address of the Medical Defence Union is 4, Trafalgar-square, W.C. Dr. A. G. Bateman is the general secretary.

J. R. B.—The reports are published by Messrs. P. S. King and Son, London.

ERRATUM.—In an advertisement in THE LANCET of last week for an additional surgeon to the out-patient throat department of the Great Northern Central Hospital the Secretary points out that the word "and" was wrongly interpolated between the words "out-patient" and "throat department."

METEOROLOGICAL READINGS

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 17th, 1901.

Date	Barometer reduced to Sea Level and 32° F	Direction of Wind.	Rainfall	Solar Radiation in Vacuo.	Maximum Temp. Shade	Min Temp	Wet Bulb	Dry Bulb	Remarks at 8.30 A.M.
Jan. 11	30·03	SSE	...	51	46	41	43	43	Foggy
,, 12	30·27	N.	...	53	44	40	40	40	Foggy
,, 13	30·49	S.E.	...	52	44	40	42	42	Cloudy
,, 14	30·44	E.	...	60	46	36	36	37	Foggy
,, 15	30·22	E.	...	53	40	33	33	35	Foggy
,, 16	29·85	E.		55	48	34	37	38	Hazy
,, 17	30·03	SSW	0·03	51	48	38	46	47	Overcast

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

WEDNESDAY (23rd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

THURSDAY (24th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

FRIDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

SATURDAY (26th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (22nd).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—Adjourned Discussion on Address by Dr. E. S. Reynolds (Manchester) on Some Recent Cases of Arsenical (Beer) Poisoning (with lantern demonstration).

WEDNESDAY (23rd).—HUNTERIAN SOCIETY (London Institution, Finsbury-circus).—8.30 P.M. Paper:—Dr. A. Chaplin: The Treatment of Pleural Effusions.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND (20, Hanover-square, W.).—4.30 P.M. Informal Exhibition of Cases 5 P.M. Meeting.

THURSDAY (24th).—NEUROLOGICAL SOCIETY OF LONDON (11, Chandos-street, W.).—8.30 P.M. Annual General Meeting. Election of Office Bearers. Dr. W. J. Mickle: Mental Wandering. (Presidential Address).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (21st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. M. Morris: Consultation. (Skin.)

TUESDAY (22nd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. R. L. Bowles: Consultation. (Medical.)

WEDNESDAY (23rd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—5 P.M. Clinical Lecture:—Dr. A. Newsholme: The Prevention of Tuberculosis.

THURSDAY (24th).—CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Mr. Lennox Browne: Intra-Nasal Obstructions; Hard—Deviations and Outgrowths of the Septum.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

CHARING-CROSS HOSPITAL.—4 P.M. Dr. Galloway: Dermatological Demonstration. (Post-graduate Course.)

LONDON TEMPERANCE HOSPITAL.—2 P.M. Dr. S. Fenwick: Clinical Demonstration.

ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. Mr. A. Willey: The Origin of Vertebrate Animals.

FRIDAY (25th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—2–3.30 P.M. Dr. J. Taylor: Class: Clinical Examination of the Nervous System. 4 P.M. Dr. StClair Thomson: Consultation. (Throat.)

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1900, which was completed with the issue of Dec. 29th, and the Title-page to the Volume were given in THE LANCET of Jan. 5th.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1900, bound in cloth, gilt lettered, price 18*s.*, carriage extra

Cases for binding the half-year's numbers, cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, MR. CHARLES GOOD, THE LANCET Office, 423, Strand, London, W.C.

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An Address

ON

THE SELECTIVE INFLUENCE OF POISONS IN RELATION TO DISEASES OF THE NERVOUS SYSTEM.

Delivered before the Nottingham Medical Society on Oct. 10th, 1900.

By FREDERICK W. MOTT, M.D. Lond., F.R.S.,
PATHOLOGIST TO THE LONDON COUNTY ASYLUMS; PHYSICIAN IN CHARGE OF OUT-PATIENTS TO CHARING CROSS HOSPITAL.

GENTLEMEN,—When your President did me the honour of asking me to give an address to the Medical Society of this city I accepted upon the condition that he should suggest a subject. He kindly replied that he thought something concerning the "new neurology" would be acceptable.

The term "new neurology," however, is correct and it is incorrect. It is correct inasmuch as this science is progressive, yet it is incorrect because the new neurology began half a century ago with the cellular theory of Virchow and the neuron theory foreshadowed by Waller, and within the last 20 years again revived, expanded, and applied, as Waller had indicated it would be, to the explanation of disease. With the revival of the theory of the trophic and genetic independence of every nervous unit or neuron has grown up a new pathology of the nervous system, depending not only upon the neuron theory but also upon the fact that every cell possesses a bio-chemical sensitiveness to its lymph-environment termed "chemiotaxis." It is the failure of the neuron under the influence of an altered environment, or owing to inherent vital prostration to carry on the processes of assimilation and dissimilation which are essential for the well-being of every cell, that is the essential cause of a class of diseases of the nervous system which include functional diseases and primary degenerations. These are primary diseases of the nervous system as distinct from diseases within the nervous system; and by the latter I mean those diseases which arise primarily from affections of the blood-vessels supporting and inclosing tissues, causing secondary changes in the nervous elements—familiar examples of which are afforded by the destruction of nervous tissue caused by hæmorrhage, thrombosis, and embolism, by tumours, injury, and diseases of the membranes and neuroglia tissue. The symptoms are usually coarse, random, and dependent upon mechanical disturbances of the circulation—often sudden in onset, and in most of these conditions non-progressive; whereas the primary intoxications and degenerations are, as a rule, symmetrical, related rather to the functions of groups, systems, and communities of neurons, and occasioned directly or indirectly by some general toxic condition of the blood or lymph. It is to this latter class of affections of the nervous system that I shall particularly draw your attention this evening.

Although the toxic substance circulating in the blood must come into contact with all the neurons equally, yet we find that in a great number of instances particular groups, systems, and communities of neurons, subserving special functions, are especially and, indeed, not infrequently solely affected by particular poisons. It is this selective action of certain poisons which impresses upon our minds a clinical picture that enables us in a great number of instances to recognise the cause by the character of the symptoms. In illustration thereof I need only cite tetanus and rabies. Although it must be admitted that in every form of intoxication of the nervous system individual temperament may vary the complexion of the symptoms to some extent, poisons like tetanus and strychnia have a specific action upon the spinal motor neurons and act upon all individuals in practically the same manner, whether such contributory factors as inherited neurosis, or psychosis, stress, or vascular congestion be present or not.

There are, however, a great number of functional and organic diseases of the nervous system in which poisons circulating in the blood act as contributory, predisposing, or exciting causes to persons with a neuropathic or psychopathic heredity, also to persons who have subjected their nervous system to excessive functional activity or stress. These three factors, *toxæmia*, *stress*, and *hereditary neurosis or psychosis*, combine to form a vicious circle in a majority of cases—a vicious circle which is continually extending its limits and which can alone be broken by removal of one or more of these three factors. Obviously, in the individual, only the first two are capable of withdrawal. The fundamental biological principles underlying all protoplasmic activity, whether it be that of a single independent unit, or the marvellous aggregation of cells or derivatives of cells constituting the human organism, are (1) the preservation of the individual, and (2) the perpetuation of the species, and this is a truism even when applied to the most complex psychical phenomena. Just as the individual is continually striving to adapt himself to his environment, so every individual component cell of the body is striving to adapt itself to its fluid lymph environment. This can only be effected by the harmonious coöperation of the whole, insuring a constant stream of blood of uniform quality whereby physiological metabolic equilibrium is maintained. The nervous system not only serves in maintaining the relation of the individual to his external environment in response to present or past stimuli from without, but it also serves to correlate all the internal activities of the tissues and organs of the body by stimulating here, inhibiting there, and distributing the blood to the tissues in proportion to their activity. The nervous system is enabled to control the activities of all the tissues of the body by impressions conveyed to and from them by nerve fibres to and from various centres; but we also know that the nerve centres themselves are bio-chemically sensitive to the state of the blood occasioned by an organ which is diseased, when all the nervous paths from the organ have been interrupted. The essential property of the nervous elements or neurons is excitability; and poisons act upon the nervous system by increasing or diminishing the excitability of the nervous elements or neurons. Thus poisons which produce motor phenomena produce exciting or convulsive and paralytic or depressing phenomena. Whether a given poison will excite or depress function largely depends upon the dose. Many exciting poisons in small doses produce convulsive effects, but in larger doses depressing effects. The converse is also true of many depressing poisons. Directly or indirectly all poisons act injuriously upon the organism through the nervous system, and nature has provided many defensive means to combat the introduction of poisons from without. Taste and smell are special senses which stand as sentinels to the alimentary and respiratory tracts and generally enable us to avoid the introduction of poisons into the body, although they do not allow us to avoid auto-intoxication or the escape of poisonous products into the blood owing to perverted function of the organs or tissues of the body. One of the most important and dangerous sources of poisons acting upon the nervous system is that due to the growth of microbes, and while the products of microbial growth are usually such as to give rise to unpleasant smells, a certain number of pathogenic organisms—e.g., cholera, typhoid, bacillus botulinus, and enteritidis—may enter the body without being detected by taste or smell. The chemical substances elaborated by the growth of some pathogenic organisms absorbed into the blood provoke vomiting and diarrhœa of central origin—an attempt on the part of the body to eliminate the noxious agent; but these defensive measures, which are of a reflex nervous nature, are insufficient, and another mode of defence is provided by the vital activities of the tissues themselves—viz., the secretion of antitoxins, which not only serve to neutralise the chemical products of the organisms but to paralyse and destroy the vital activities of the microbes themselves. Another defensive action on the part of the tissues is a gradual tolerance of the tissues to perform their functions even with a poisoned environment, and as we shall see later in considering the *habit poisons* the toxic environment of the nervous elements may be in time the condition under which they can best perform their functions. I have already remarked that the functions of the neuron depend upon its excitability—i.e., a bio-physical property by which it is capable of a molecular vibration which is propagated through its protoplasmic substance along definite lines. We speak of a nerve impulse being "cellulipetal" or "cellulifugal," according as the impulse is conducted to or from the cell. Every neuron or nervous unit consists of a cell body and processes, one of which only becomes the axis-cylinder

of a nerve. The whole nervous system consists of these independent cellular units, and although there may be differences of opinion as to whether one nervous unit is connected with another by its branching processes—i.e., a direct protoplasmic continuity—there can be no doubt that each neuron was developed from a separate cell and is therefore genetically independent. The degenerations arising either from injury or disease being limited to definite systems and groups of neurons show, moreover, that they are nutritionally independent. Therefore we are justified in supposing that every neuron acts as an independent organism, has a specific vital energy, and possesses a store of potential upon which the function of excitability depends. If the nervous system is in a normal physiological condition the protoplasm of the neurons is in a state of bio-chemical stability whereby the processes which underlie conversion of potential into active energy under the influence of stimuli are so adjusted that the response is apportioned and appropriate to the stimulus, and there is no tendency for the impulse to act as a fulminant.

Potential energy depends upon the activity of the protoplasm and the maintenance of the balance between constructive and destructive metabolism, but the balance of potential varies in every individual, according to the bio-chemical stability of the nervous elements as a whole or in part. Thus, in neurasthenia, potential is low because the processes of assimilation do not bear a proportional value to dissimilation. The nervous elements suffer essentially only from two morbid conditions—viz., increase of excitability and tendency to fulminate or spread, and diminution or loss of excitability. In the case of motor neurons the two conditions are exhibited respectively by convulsive or tonic muscular spasm and paralysis; in the case of sensory neurons by hyperæsthesia and anæsthesia; but every group of neurons is functionally correlated with other groups, and paralytic phenomena occurring in one group will allow the opposing correlated group to overact; in fact, as Dr. Hughlings Jackson has pointed out, it is not too much to assert that one-half of the symptoms of nervous disease are due to physiological overaction of unopposed nervous influences, and if a poison entering the system has a selective action upon some particular group of neurons, paralysing their function, then an opposing group, which may be functionally depressed, will appear to be over-active. We shall see that this applies not only to such physical phenomena as double vision, a consequence of squint, and of contracture on account of paralysis, but the truth of the dictum may be applied to perverted mental processes—in fact, there is a similarity between a fixed idea and a limb in contracture.

Poisons are either introduced into the body from without or produced within (exogenetic or autogenetic). In either case it is the toxic state of the blood or lymph which causes the morbid nervous phenomena, and the symptoms which arise are dependent upon conditions of either increased excitability or depressed excitability of the nervous elements. We have seen that in one case the selective influence of the poison upon particular nervous structures is dependent upon the chemical properties of the poison itself. It has a specific action, whereas in the other case the poison selects particular structures in the nervous system owing to an inherited or acquired low potential of the nervous elements or an instability of their protoplasm. The poisonous alkaloids, such as strychnia, curare, atropine, muscarine, and pilocarpine, show that they owe their toxic properties to the chemical affinity which certain nervous structures have for these poisons, causing excitation or depression of their function.

But I will particularly call your attention to a series of poisons which have served human beings in various lands to satisfy a strange need of altering and transforming the physiological processes of the mind and of withdrawing themselves from the real world in which they live, by the abuse or daily indulgence of various intoxicant substances introduced into the body in various ways—viz., alcohol, opium, haschish, morphia, cocaine, tobacco, and absinthe, each of which may be characterised by perversion or disturbance of the higher functions of mind, although each drug shows by the specific toxic effects which it produces a different mode of action. As, however, I have previously indicated, individual temperament may impress a special colour on the complexion of the symptoms. The features of acute alcohol poisoning are but too well known. As Maudsley aptly says, "A man in the process of getting drunk displays an abstract and brief chronicle of insanity, going through its successive phases in a short time." In every mental process the whole cerebral cortex is engaged, but it appears probable that certain projection fields or identification centres may under the influence of different toxins be excited or their functions disturbed and perverted in a characteristic manner. Thus visual and auditory hallucinations of a horrid or terrifying character are especially frequent in acute alcohol poisoning, whereas alcohol is indulged in by a large number of people to banish sorrowful recollections, to drown dull care and present troubles. How often it is extremely difficult to decide whether a patient is suffering from *mania à potu*, pure and simple intoxication, or true mania with alcoholism—and especially does this apply to the mania of general paralysis. No doubt such cases have presented themselves to most of the busy practitioners forming my audience, but perhaps I may be permitted to describe the symptoms of an unusual case, for they illustrate this peculiar toxic influence of alcohol.

A man was admitted to an asylum who presented all the symptoms of alcoholic delirium. He had visual hallucinations in the form of black devils which came and perched upon his nose and which emitted foul smells and introduced bitter poisons into his mouth. He would continually move his hand as if to flick them away. The pupils were unequal and there was reflex iridoplegia, with syphilitic chorioretinitis. I therefore came to the conclusion that it was general paralysis with acute alcoholic intoxication, for the patient smelt of drink and there was a very marked history; in fact, he was admitted as a drink case. A week later when I saw him the toxic effects of the alcohol had had time to pass off and he now had an exalted expression and said that angels came and sat on his nose and moistened his lips with honey and breathed sweet perfumes into his nostrils. Possibly an autotoxin may be the cause of the grandiose delirium of this disease.

The mental process by which time and spacial relationship is estimated, depends primarily upon the kinæsthetic sense, although higher controlling centres, existing in the pre-frontal lobes probably coöperate. The primary kinæsthetic ideation centres are situated in the frontal and central convolutions, in which are located not only the efferent neurons which preside over voluntary movements of all the muscles of the body, but also they are the seat of the terminal neurons of the afferent projection system, in which every movement and change of position by muscular action is registered by means of tactile motor sensations coming from skin, muscles, joints, and tendons. Haschish, a poison which is used in Eastern countries and is a common source of insanity, has, it is said, very curious characteristic effects upon perception in this tactile motor ideation centre, for it may produce the most remarkable illusions relating to the notion of space and time. External objects appear extremely enlarged in all their dimensions and time appears indefinitely prolonged. Morphia, like alcohol and absinthe, leads to increased ideation and loss of control of ideas, only much more marked; in fact, control entirely disappears and one idea succeeds another with extraordinary rapidity, each one calling up another without the possibility of staying them. It is persistent and uncontrollable ideation; the highest level centres are depressed, the middle level centres are exalted. It has been affirmed that the weirdly vivid imagination of De Quincey was in a measure due to the opium habit in which he indulged. An interesting physiological fact in connexion with these psychical poisons is that habit renders the abnormal toxic environment of the neuron the normal. Morphia, which has been the best studied and offers the best example in this respect, shows that through long use the state of morphia intoxication may become the normal state of the brain of the individual, so that under this condition only are the nervous elements able to carry on physiological processes of assimilation and dissimilation and perform their functions, for sudden withdrawal of the poison can bring about delirium, hallucinations, and other mental symptoms. There is thus an analogy between the intoxication of the normal brain and the sudden non-intoxication of a brain which, habituated for a long time to a morphinised environment, has adapted itself accordingly.

Of all the extrinsic causes of nervous and mental diseases the abuse of alcohol is the most widespread and potent, for at least 20 per cent. of the inmates of the London county asylums are suffering directly or indirectly from the effects of the abuse of alcohol. Most of these patients, however, have an inherited neuropathic or psychopathic taint, and my

experience as pathologist during the last five years supports the conclusion that alcohol may, in comparatively small quantities or indulged in for comparatively short periods of time, produce in people with an unstable mental organisation marked toxic effects. The effect on the nervous system of chronic alcoholism is dementia, a very characteristic manifestation of the mental degradation being absence of knowledge of time and place and loss of memory, especially for recent events, with personal illusions, indicating a failure of receptivity and the formation of memory pictures in the higher ideation centres. A certain amount of improvement may occur when total abstinence is enforced, which shows that the poison has damaged, but not entirely destroyed, the nervous elements. In cases, however, where the dementia is permanent organic changes may be found in the brain—viz., an atrophy of the tangential, super-radial, and inter-radial association fibres, structures which are usually found damaged in all cases of organic dementia. Besides mental symptoms of alcoholic poisoning there is very frequently, and especially in women, paralysis affecting the lower limbs, although the upper limbs, and even the heart and respiratory muscles—in fact, all the muscles of the body—may be affected in severe cases. The patient becomes helpless and bedridden and death occurs frequently from heart or respiratory failure. Characteristic features of this affection are great tenderness on pressure, especially of the calves, absence of reflexes, a variable degree of skin anæsthesia affecting especially the apices of the limbs, wasting of muscles, alteration of the normal electrical reactions, and frequently pyrexia, but there is no loss of control over the sphincters unless there is dementia. This complex of symptoms points to a peripheral polyneuritis, although marked changes may be usually found by certain methods of staining in the ganglion cells from which the axis-cylinders take their origin. I have endeavoured in the Croonian Lectures to give an explanation of why the extremities of the limbs are most affected as regards movement and sensation and why the effects of the poison as they become more marked lead to the defect in sensation and movement, travelling up the legs towards the centre in the manner one puts on a stocking, and as the effects of the poison wear off sensation returns in the manner one takes off a stocking.

Many other poisons—lead and arsenic, toxins of the acute specific fevers, and toxic states of the blood due to imperfect metabolism, such as occurs in diabetes and gout—may produce, or become an important factor in producing, peripheral neuritis. It is asserted that the toxic amblyopia with central scotoma of tobacco poisoning is due as much to the alcohol as the nicotine, but although it cannot be denied that alcoholic intemperance tends to induce this condition, yet it is certain that tobacco taken in any form by certain individuals has a selective toxic action upon the neurons of central vision. An argument in favour of this is in the case recorded of horses which had eaten the tobacco plant and suffered with amblyopia. Lead is peculiar in selecting the nerve which supplies the extensor muscles of the wrist and fingers, so that dropped wrist is almost characteristic of this form of toxic neuritis; but lead also produces changes in the brain, encephalitis saturnina, a complex of symptoms including dementia, loss of memory, weakened intellect, paresis, and epileptiform seizures, hallucinations of sight and hearing, and mental exaltation or depression. Large numbers of people in Northern Italy and Egypt suffer with pellagra, an affection of the skin associated with degenerative changes in the brain and spinal cord. The people so affected suffer generally from a fatuous melancholy and suicidal impulses, and sometimes from mania. It is supposed that this disease is due to the bad maize upon which the people at times have to subsist. There is also ergotism, a disease which is due to poor people in Russia and Northern Germany being obliged, owing to the failure of the rye crop, to subsist upon bread made from grain which has been attacked by the ergot fungus. The poison thus introduced into the system produces progressive degenerative changes in the brain and spinal cord, which are manifested by psychical disturbances, such as slowness of thought, weakness of memory, dulness of perception, sometimes delirium and incoherence, and other symptoms such as blunted sensibility, dilated pupil, muscular spasms, ataxy, and epileptiform fits, frequently terminating in stupor, coma, and death. The symptoms in both these diseases are due to progressive degenerative changes in the brain and spinal cord, the changes in the latter being closely allied to the changes met with in cases of pernicious anæmia and grave anæmia, which I shall have occasion to refer to later. An acute disease, the symptoms and fatal results of which are due doubtless to the action of a specific toxin upon the neuron, is botulism, which arises from eating meat and fish infected with the bacillus botulinus. It was described first by Ermenghen, who discovered the organism in the food eaten by people who had died with a characteristic group of symptoms in which paralysis of the ocular muscles was an important symptom. The toxin produced by this organism has been separated by Ehrlich, and it is extremely virulent, the most minute dose being sufficient to produce fatal results. I shall show you the changes in the nerve-cells produced by this poison, and also the fatty degeneration of the muscle which occurred after an extremely small fatal dose had been administered, so that an animal was able to survive the effects of the poison for eight days, thus allowing this change to take place. I could cite a number of other poisons which may enter the system from without and which would give rise to characteristic complex of symptoms did time permit.

I shall now pass on to the consideration of those poisons which are produced within the body (1) by the perverted functions of the organs or tissues, and (2) by the action of micro-organisms upon the living fluids and tissues of the body.

Certain normal constituents of the blood, e.g., carbonic acid, sarco-lactic acid, and the series of nitrogenous waste products, the highest oxidised, most soluble, and least harmful of which is urea, may accumulate in the blood, owing either to excessive production or defective elimination, and toxic environment of the neuron may supervene. Take, for example, uræmia, the nervous manifestations of which are headache, drowsiness, or unconsciousness, epileptiform convulsions, and sometimes symptoms of polyneuritis, showing, therefore, that the normal excitability of certain neurons (higher controlling) has been depressed, while that of others is increased through the effect of the poison. Graves's disease is possibly an example of an increased functional activity of a gland, giving rise to an increase of its secretion which, although essential, as myxœdema shows, for the proper metabolism of the body as a whole and of the brain in particular, yet when the secretion is in excess causes nervous phenomena in the form of exophthalmos, fine tremors, palpitation, tachycardia, and sometimes pyschical phenomena in the form of mania or melancholia. In the process of digestion a number of toxic albumoses and other substances are produced which, although absorbed in the alimentary canal, are prevented by the vital action of the lining epithelium and the bio-chemical processes occurring in the liver from entering the systemic circulation. If these structures are prevented by functional depression, inflammation, or disease from performing their normal functions, toxic conditions of the blood may arise and be a source of morbid nervous phenomena. Excess of uric acid in the blood is associated with high arterial pressure, probably owing to vaso-motor irritation, accompanied by deposits of lithates in the urine, headache, and nervous irritability; it is an indication of imperfect metabolism, as shown by the fact that marked improvement occurs by suitable diet and treatment. Phosphoruria, oxaluria, and glycosuria are all tokens of deranged metabolism and the circulation of blood of impure quality, and may be associated with various nervous disturbances. Cholæmia resulting from obstructive jaundice gives rise to psychical depression and may even be attended by stupor. The term "melancholia," signifying "black bile," indicates the importance which has long been attached to the liver as an organ, the derangement of which causes nervous depression. The rapidly fatal result preceded by delirium, motor irritation, delusions, stupor, and coma occurring in acute yellow atrophy of the liver demonstrates the important part which this organ plays in maintaining constant the normal quality of the blood. The delirium and coma which sometimes supervene in diabetes, heralded by acetonæmia, are another instance of auto-intoxication. Again, in pernicious anæmia and certain grave anæmias the characteristic combined sclerosis due to degenerative changes in the spinal cord found in many of these cases is due not so much to the defect in the red corpuscles as to some toxic agent absorbed into the portal blood from the alimentary canal which leads to hæmolysis and acts as a poison upon those nervous structures which are found in a state of degeneration.

Poisons circulating in the blood and lymph the products of infective micro-organisms which have established themselves in the body.—In the course of the acute infectious diseases and also the last stage of many general diseases delirium is a frequent complication. It may be explained by the fever, but I do not think, unless there is hyperpyrexia, that the rise of temperature is the cause so much as the toxic condition of the blood. "The last to come and the first to go" is an axiom which can be applied to the effects of toxic conditions of the blood in the production of delirium. The highest specialised controlling functions of the brain depend upon cortical systems of neurons, which are evolutionally and morphologically the latest developed, therefore are most readily affected by a poisoned environment, and vascular congestion or anæmia of the brain tissues observed post mortem and considered by some authorities to explain the symptoms are in reality merely accidental or concomitant conditions. Shakespeare, whose psychology will last for all time because it is the breath of humanity in all its varied aspects of health and disease, clothed in his own poetic language the cause and fateful omen of delirium in an infective disease:—

> The life of all his blood
> Is touched corruptibly: and his pure brain
> (Which some suppose the soul's frail dwelling house)
> Doth by the idle comments that it makes
> Foretell the ending of mortality.

Again, in his description of Falstaff's death he indicates the mental state of impending dissolution, for Dame Quickly says:—

> After I saw him fumble with the sheets and play with flowers and smile upon his finger ends I knew there was but one way, for his nose was as sharp as a pen and a babbled o' green fields.

Likewise the struggle between the poison and the defensive action of the tissues culminating in a supreme effort of the latter and the advent of the crisis was recorded in the words:—

> Before the curing of a strong disease,
> Even in the instant of repair and health,
> The fit is strongest: evils that take leave
> In their departure most show evil.

It does not always happen, however, that evils take their departure without leaving a scar, and various nervous and mental diseases may date their origin from an acute specific fever. Sometimes it may be a persistence of the nervous derangement which manifested itself during the course of the disease; more often, however, the toxæmia has produced a state of low potential or a state of bio-chemical instability in certain nervous structures; or it may happen that the poison may have contributed to the development of a scar in some inherited *locus minoris resistentiæ* of the nervous system, the result being that certain groups or systems of neurons are in a state either of depressed or increased excitability—i.e., there is a morbid condition in which the normal stimulus will not produce a response, or there will be a tendency for the tissue when acted upon by slight abnormal stimuli to fulminate. A certain number of cases of puerperal insanity, which usually occurs within a few days of delivery, are due to septic blood-poisoning in psychopathic or neuropathic individuals. Moreover, acute specific fevers occurring in persons suffering with epilepsy, whether idiopathic or from chronic brain disease, are ushered in by convulsive seizures, indicating the bio-chemical sensitiveness and instability of certain nervous structures in the brain to the altered state of the blood. Again, children in whom the higher inhibitory controlling centres are imperfectly developed, especially if there is any family neurosis, manifest he onset of an acute disease by convulsions.

The best examples of selective action of microbial toxins are afforded by rabies and tetanus. In rabies, although the whole nervous system is charged with the poison, the medulla oblongata, as shown by the symptoms and the microscopical evidences of degeneration of the neurons in that region, is especially affected. In tetanus the characteristic bacilli are only found in the wound. They must, therefore, be comparatively few in number, but they elaborate a virulent poison which affects particular groups of neurons. The fact that lock-jaw nearly always occurs first shows that the poison selects the motor nucleus of the fifth nerve, but it is remarkable that experiment has shown that the tetanus toxin, if mixed with an emulsion of nervous matter before injection into an animal, loses its toxicity, showing its affinity for nervous matter, also a power of absorption of the poison by some chemical substance in the nervous matter. Again, it is probable that some toxic agent absorbed from the alimentary canal having an affinity for the motor neurons, all of which are not equally susceptible to it, is the cause of tetany. It is generally believed that in diphtheria a neurotoxin is produced by the local action of the bacilli, for they do not become freely generalised in the blood and tissues. Whether the poison is a direct product of the bacilli themselves or is an autotoxin created in the body itself by an influence exerted on the living fluids and tissues by a ferment-like product of the bacilli has not been determined, but whateve may be the source of the toxin its effects show a selective affinity for certain nervous structures, as shown by the complex of symptoms which arises. Some people assert that chorea is due to a microbial infection and the result of the action of their toxic products upon certain systems of neurons in the brain, but the evidence is probably as yet insufficient, although the hypothesis is plausible, especially if (as seems now probable) it be shown that rheumatic fever, with which this disease is so frequently associated, is due to that cause. Influenza has, it seems, a specially depressing influence upon the nervous system. The frequency with which this disease is followed by anosmia is doubtless due to the primary seat of infection being the nasal mucous membrane. Many severe neuroses and psychoses date their origin from an attack of influenza.

Finally, I shall refer to a poison which is responsible for a large proportion of the organic nervous diseases which are met with in practice—syphilis, the virus of which may act in two ways. It may produce disease within the nervous system, attacking the supporting and nutrient vascular tissues. It shows a predilection to attack certain structures, especially the inner coat of the cerebral arteries of the base of the brain. Moreover, if it attacks the membranes, it is the base which is especially liable to be affected. There is an explanation for this, for probably the syphilitic organism or contagious particle finds the abundant cerebro-spinal fluid in the subarachnoid space in this situation a favourable region for its multiplication, but why the third nerve should be especially picked out by the poison, and in the great majority of instances on one side alone, has received no adequate explanation. So frequently is this nerve affected in syphilitic disease of the base of the brain that Ricord and Fournier designated paralysis of the third nerve, especially ptosis, "*la signature de la vérole.*" Syphilis, also, is the most important factor in the production of two primary progressive degenerations of the nervous system, one affecting especially the posterior spinal neurons, the central projections of which form the afferent systems of fibres of the posterior columns of the spinal cord—viz., locomotor ataxy—the other affecting especially the frontal and central convolutions of the cerebral hemispheres, general paralysis of the insane. Uhtoff found reflex rigidity of the pupils 492 times among 4000 insane; of these 421 (85·5 per cent.) were paralytic dements.[2] Uhtoff and Möli found the light reflex absent in about half the cases. A striking instance of the selective action of the syphilitic poison is shown in the fact first pointed out by Sir William Gowers, that only in persons affected with acquired or inherited syphilis is the symptom known as the Argyll-Robertson pupil found; indeed, it is sometimes the only symptom. Seeing that this is the most common objective phenomenon in the two diseases mentioned it strengthens the presumption, based on experience, that the syphilitic poison is the essential cause of the two diseases in the majority of instances. Again, in both these diseases a primary progressive degeneration of the optic nerve, in which the vessels have normal appearance—viz., grey atrophy—is frequently met with. I found in 130 consecutive post-mortem examinations made upon general paralytic patients at the Claybury Asylum naked-eye atrophy of the optic nerves in nine cases—nearly 7 per cent. In the Croonian Lectures I stated 10 per cent. as suffering with optic atrophy, but this calculation was based upon cases which I had especially investigated and included a number of juvenile and tabetic cases. The soft sore as a cause of these parasyphilitic affections is well known, and various theories have been put forward to explain why this should be so. To my mind it indicates, in the majority of cases, a mild attack of syphilis. Possibly the poison has been modified by inherited partial immunity, possibly by mixed infection, and both Hitzig and Buzzard have suggested that under such conditions as will produce a

[2] Berliner Klinische Wochenschrift, 1886, Nos. 16 and 17.

soft sore there may be several poisons, one of which is specially injurious to the vitality of certain structures in the nervous system. One finds an analogy in diphtheritic paralysis, for it is a matter of experience that the mild cases are very frequently followed by toxic symptoms affecting the nervous symptoms. In fact, they may be the first evidence of the disease for which the patient is seen by the medical practitioner who ascertains then that the patient (and several others in the house) had suffered from sore-throat. It is remarkable how very slight may be the symptoms of syphilitic poisoning in married women who suffer with miscarriages, premature births, and give birth to syphilitic children. I have investigated 30 cases of juvenile general paralysis. In 80 per cent. of these I found a history or signs of syphilitic infection. Although in 50 per cent. the children showed characteristic signs of congenital syphilis, yet the mothers seldom complained of any illness, nor could I obtain any evidence in the majority of cases that they had had any symptoms of the disease. I am rather inclined to believe that spermatic infection of the ovum from the syphilised father may in some of these cases have taken place, and it is conceivable that as the syphilised fœtus has developed gradually increasing doses of the toxin absorbed by the mother's blood have given her an immunity. Whereas in the adult form of the disease males are much more frequently affected than females, in juvenile general paralysis when the chances of syphilitic infection are equal the two sexes are affected equally.

A Lecture
ON
PLAGUE.

Delivered at the London Hospital on Nov. 22nd, 1900,

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LADIES AND GENTLEMEN,—I appear before you this afternoon at the request of the College Board that has done me the honour of inviting me to give you some of my experiences of this now widespread disease, plague. I would incidentally mention that it is 22 years since I was in this theatre as a student. London Hospital men wander far and wide, and it has been my fate to spend 13 years in the Far East, during which time I have practically had the management of three epidemics of this disease. During these outbreaks we have had the services of a staff of nursing sisters, no fewer than nine of whom hailed from the London Hospital. I feel it my duty as well as a privilege to pay a tribute in the college attached to this hospital to the noble services rendered by these ladies, in the performance of whose duties two unfortunately lost their lives.

I have been requested to speak to you on the diagnosis of plague and the measures necessary to prevent its extension. Plague may be defined as an acute infectious febrile disease caused by the introduction into the system of a specific bacillus. In order to diagnose the disease a knowledge of the symptoms and post-mortem appearances is necessary.

SYMPTOMS.

The disease commences suddenly, without prodroma, with a rigor, followed quickly by great prostration, fever, and marked pain at the place where the bubo subsequently appears. After the onset there are headache, great thirst, vomiting, diarrhœa, marked weakness, and, as a rule, intense mental depression. The skin is hot and dry and occasionally jaundiced. The facies is characteristic. The countenance is drawn, the conjunctivæ are injected, and the eyes are sunken. The patient presents a dull, heavy, stupefied look. Sometimes this is replaced by an expression of terror. The tongue is swollen, red, and coated with a greyish white fur. Occasionally the disease is ushered in with violent delirium, the patient being sometimes quite maniacal. At other times the patients are quiet and indifferent to their surroundings owing to a deadening of the mental faculties. Then appear the buboes or enlarged lymphatic glands, to which character the name "bubonic plague" is due. These are the most constant and characteristic signs of plague and they appear at any time in the first five days. The fever is generally high—from 103° to 105° F.—at the onset, lasting from six to 10 days and reaching its acme from the third to the fifth day. Gradually then it falls to the normal. After the first stage there is often a secondary rise due to suppuration. Occasionally we meet with petechiæ or pustular eruptions and carbuncular affections of the skin. These latter begin with ecchymoses, which increase in size and become covered with vesicles, the surrounding skin being swollen and brawny, due to the effusion of inflammatory serum, a central slough often forms which separates, leaving a gangrenous ulcer.

Buboes.—With reference to the buboes or glandular swellings. in 73 per cent. of the cases these appear varying from the size of a pigeon's egg to that of one's fist. In the remaining 27 per cent. the glandular swellings are much smaller, varying from the size of a pea to that of a bean. These smaller lesions occur most frequently towards the end of an epidemic when the symptoms generally are milder. These buboes are accompanied by a painful peri-glandular swelling which is so painful that on the least pressure the patient winces and cries out. The most frequent sites of the buboes are the groin, the axilla, the neck, and the submaxillary region. The relative frequency is as follows: in 60 per cent. they occur in the groin, in 16 per cent. in the axilla, in 15 per cent. in the neck, in 1·5 per cent. in the submaxillary region, and in exceptional cases they also appear in the elbow and popliteal space. In the groin the femoral glands are those most frequently affected. The swelling is rapid and accompanied by so much pain that the patient lies with his thigh flexed and abducted, there is inflammation of the surrounding peri-glandular connective tissue, the skin over the swelling is red and œdematous, very often a bleb forms on the surface, and in 90 per cent. of the cases the bubo suppurates. In addition to these changes in the external glands the internal lymphatic glands are frequently affected, more especially the mesenteric.

To particularise, one may say in regard to the alimentary tract that the lips are dry, the tongue at the onset is swollen and red and coated with a greyish-white fur; usually on the second or third day it has become dry and brown. This brown appearance, especially amongst the Chinese, is very characteristic. The mucous membrane of the pharynx is red and the tonsils are often congested. The appetite is diminished and there are frequent vomiting and intense thirst. Diarrhœa is common at the onset as well as in the later stages; during the fever constipation is the rule.

Respiratory tract.—As a rule there are no symptoms pointing to this tract, but there is occasionally a painful dry cough with signs of dry pleurisy. I am referring to the ordinary bubonic type of the disease.

Cardiac.—In severe cases there is evidence of implication of the heart muscle; the first sound is prolonged, the pulse is rapid and soon becomes soft and compressible, and as the end approaches it is very irregular.

Urinary system.—The secretion of the urine is frequently diminished or altogether suppressed at the onset. In 95 per cent. of the cases in the epidemic in 1896 we found albumin to be present at the commencement of the disease, but this disappears with the decline of the fever.

Nervous symptoms.—These are very marked and consist of deafness, distressing sleeplessness, muscular twitchings, and either delirium or apathic listlessness merging into coma. Pregnant women in many cases abort. Convalescence in favourable cases commences with the decline of the fever at the end of the second week, but it is always long and very often much delayed by suppuration.

Mortality.—There is no disease with such a high mortality. Amongst the Chinese not treated in the hospital the mortality was 90 per cent. Amongst those treated in the hospital it varied in different epidemics from 73 to 88 per cent. Of the Europeans attacked the mortality is much less, averaging from 40 to 50 per cent. During the height of an epidemic the cases are speedily fatal, death often taking place from quite unexpected collapse. At the end of an epidemic the cases are much milder in degree, so that we find the mortality of 90 per cent. at the beginning reduced to 45 per cent. at the close.

POST-MORTEM APPEARANCES.

To diagnose the disease it is necessary, as I have stated, to

have a knowledge of the post-mortem appearances, as the first case may be met with in the cadaver. There is no marked emaciation unless death occurs late in the disease, or from some secondary cause such as long-continued suppuration. Rigor mortis is not well marked. The expression of the countenance is usually calm. On the skin there are petechiæ occasionally found and carbuncular swellings; these show hæmorrhages and infiltration into the subcutaneous tissue. With regard to the brain the cerebral membranes are always congested and œdematous and in most cases clouded; there are small ecchymoses here and there. In the brain substance there is no marked change. As to the chest, in the pleura are small hæmorrhages, with some moderate effusion into the pleural cavities; the mediastinal glands are sometimes enlarged and the lungs are congested and very œdematous, the lower lobes especially so. There is occasionally pneumonic infiltration. The bronchial glands are sometimes enlarged. The pericardial area presents punctiform ecchymoses, the right side of the heart is generally distended with blood, and the heart muscle is pale and flabby, the parenchyma being clouded or in a state of fatty degeneration. As to the abdomen, the omentum and peritoneum present small or large extravasations of blood; these are sometimes very extensive. The mesenteric and retro-peritoneal glands are in nearly all cases enlarged and they present a bluish-red appearance. Occasionally, in severe cases, extensive hæmorrhages can be traced from the crural canal along the lymphatics of the pelvis to the perirenal connective tissue. The spleen is enlarged always to twice or even four times its usual size; it is soft and hyperæmic. The liver also is enlarged; there may be extravasations of blood under its capsule, the parenchyma is clouded, and in those cases in which there has been jaundice the organ is of a greyish-yellow colour. The stomach is often contracted; the mucous membrane is hyperæmic and is thickly coated with mucus and studded with small or large hæmorrhages. The intestines present the same appearances; in addition, the solitary glands are hyperæmic and Peyer's patches are enlarged and occasionally present hæmorrhages. The kidneys are enlarged and congested, with small ecchymoses under the capsule. Small hæmorrhages are found in the mucous membrane of the pelvis and coagula may be seen plugging the calices. The urinary bladder presents punctiform hæmorrhages in the mucous membrane and the urine occasionally contains blood. With regard to the glands, in the external lymphatics or buboes the changes are much more marked than they are in the internal lymphatics. The buboes are swollen lymphatic glands with the surrounding connective tissue œdematous and infiltrated with blood. The glands are red or bluish-red and are frequently studded with purulent foci; they often contain hæmorrhagic extravasations. In severe cases the glands are matted together to form one huge boggy mass which may extend up the crural canal to the pelvis. In severe cases the iliac and lumbar glands have been affected, so that there may be a chain of enlarged glands extending up to the diaphragm, and hæmorrhages into and around these glands are frequently found.

To sum up, the post-mortem changes met with in this disease are as follows: characteristic inflammatory swellings of the external and internal lymphatic glands, especially of the mesenteric glands, accompanied by enlargement of the spleen, by inflammatory changes in the structure of the liver, kidneys, and heart, by inflammation of the cerebral membranes, and by the production of diffuse small punctiform hæmorrhages.

VARIETIES OF PLAGUE.

The varieties of the disease are three: the bubonic, the pneumonic, and the gastro-intestinal.

1. *Bubonic.*—With regard to this variety, it is the one which I have been describing. 70 per cent. of the cases come under this heading. Infection occurs through the skin.

2. *Pneumonic.*—Fatal as is the bubonic variety, the pneumonic is still more so; indeed, nearly all who are attacked by it die. It is induced in animals by applying the bacilli or the sputum of a pneumonic case to the mucous membrane of the nostrils of, say, guinea-pigs, by means of a brush. The sputum of patients attacked by this variety presents almost a pure culture of plague bacilli. Infection occurs by means of the air-passages, and it was from this form that the two sisters in the Government Civil Hospital at Hong-Kong died in the epidemic of 1898. The onset is marked by a rigor, attended by cough and some dyspnœa with slight fever. The temperature soon rises to 103° F. or higher, and in a few hours the patient commences to spit up a quantity of thin blood-stained sputum. The dyspnœa rapidly becomes more marked, there is much cardiac depression, the pulse is rapid and compressible, and there are extreme restlessness, want of sleep, and early delirium; the auscultatory signs are those of catarrhal pneumonia. The disease in this form runs a very rapid course, and is almost invariably fatal within three days.

3. *Gastro-intestinal.*—This variety, like the pneumonic, has no external buboes and the cases are, as a rule, rapidly fatal. Post mortem the changes already described in the mesenteric and retro-peritoneal glands are the most constant; the solitary glands are also enlarged and inflamed and the mucous membrane of the intestines is thickly coated with mucus and studded with small hæmorrhages. In 21 fatal cases of this variety in the epidemic of 1896 plague bacilli were found in the fæces.

BACTERIOLOGY.

It was at Hong-Kong in 1894 that Kitasato and Yersin discovered the bacillus in the buboes and organs of those who had died from the disease and also in the blood of patients who were suffering from the disease. That this bacillus is the cause of the disease is now universally held, the reasons being: (1) the presence of the bacillus in the blood and organs of a person suffering from, or who has died from, the disease; (2) that if a culture of the bacillus obtained from one suffering from the disease be inoculated into a susceptible animal this animal contracts the disease and dies; (3) the bacillus can be obtained from the spleen and other organs of the infected animal; and lastly, (4) the bacillus thus obtained will infect other susceptible animals. This distinctive micro-organism is found in fresh bodies in the spleen and buboes in great numbers, in smaller numbers in the affected lymphatic glands, in the heart, lungs, liver, and kidneys, in the walls of the stomach, in the intestines, and in the blood; in the last-named it is also found in the interior of the blood corpuscles. It is likewise to be detected in the fæces, in the urine, in the vomit, and in the saliva. The bacillus is a short thick rod with rounded ends. On an average it is about one millimetre in length and 0·3 μ in breadth. It is stained by basic aniline dyes, the ends of the bacillus taking the stain more deeply than the centre, thus presenting a bipolar appearance. It is not stained by Gram's method. Examined in media kept at 37° C., which is that at which it thrives best, it is motile. Spore formation has not been observed. In some specimens the appearance of a capsule can be made out. To find the bacillus, a small quantity of blood is obtained by puncturing the finger or lobe of the ear, after carefully washing the skin with soap and water and afterwards with a solution of corrosive sublimate. The blood is then spread on glass slides and dried and stained with some aniline dye, carbol fuchsin by preference. Blood obtained by puncturing the buboes or glandular swellings nearly always contains the bacilli in large numbers.

In 1896, out of 273 cases treated in the hospital, in 221 the presence of the bacilli in small numbers was found in the blood microscopically. As a rule only four or five in any one field of the microscope are found. If the bacilli are free and numerous the case is a serious one. If the bacilli are not found microscopically a more exact opinion is obtained by culture experiments on animals. The most favourable culture medium for this growth in Hong-Kong was found by Wilson to be a 2 per cent. alkaline solution of peptonised bouillon containing 1 per cent. of gelatin. After injection the bouillon remains clear and transparent; the bacilli grow on the surface in the form of a slight whitish clot. The fluid remains clear if undisturbed, but the least movement causes the growth to sink to the bottom of the tube, or for a time the fluid appears cloudy. The urine or the blood may also be examined on agar plates. If the bacilli are present small round greyish-white colonies appear within 24 hours. To make the diagnosis still more precise inoculations of the blood into a susceptible animal, such as the rat, the mouse, the guinea-pig, the rabbit, the pig, or the monkey should be made. The mouse or the guinea-pig is the animal which is most suitable. To communicate the disease to either it is only necessary to prick the thigh with a needle which has been dipped into the culture. The animal refuses food, it staggers, the respirations become hurried, and it dies in from 36 to 48 hours. It

is essential to use a recent culture, otherwise the virulence is lowered. The characteristic post-mortem changes are found in the animal—e.g., at the site of inoculation there is inflammatory œdema, the lymphatic glands are enlarged, the spleen is enlarged and congested, and plague bacilli can be obtained from the spleen, the liver, and the glands.

Plague bacilli are also present in profusion in the sputum of pneumonic patients. In examining the pneumonic sputum advantage is taken of the fact that plague bacilli grow at a much lower temperature than normal microbes. In order to examine sputum for the presence of these bacilli the sputum is first diluted with a small quantity of boiled water; several tubes of bouillon are fertilised with this diluted sputum and are exposed to a temperature not higher than 23° C. At this temperature the pneumococci and streptococci will not grow. The plague bacilli will develop and in two or three days plague colonies will be seen. In order to obtain cultures in a pure state fresh tubes of bouillon should be inoculated. The introduction of pure cultures into the stomach, either by mixing them with food or by giving them with the stomach-tube, is always fatal to rats, guinea-pigs, and rabbits. and the same result occurs if fragments of the organs of animals dead from the disease are used. The post-mortem changes in the mesenteric glands and intestinal follicles are more marked in these cases than they are in the cases of those animals which have been killed by subcutaneous injection. also the external glands are much less swollen. Wilson found at Hong-Kong that guinea-pigs and monkeys fed with pure cultures died from the disease. A pig fed with the spleen of a man who had died from plague succumbed to this disease in three weeks. It is found then by microscopical and bacteriological examination that plague is a disease in which the blood, the organs, the saliva, the urine, and the fæces of those affected with, or who have died from, it contain a specific bacillus, pure cultures of which inoculated into various animals produce in them the same disease. Hence its infectivity, a point which I cannot too strongly impress upon you. Medical men recognise this, but there is a tendency on the part of students to dwell more on the changes in the organs and on the pathognomonic symptoms of a disease. Bacilli have been demonstrated in the saliva and fæces of patients five days after the first onset of the fever; in blood obtained by puncturing the connective tissue of the bubonic swellings and in urine plague bacilli have also been detected from four to six weeks after the onset of the disease. Mice, guinea-pigs, and rabbits when inoculated by cultures attenuated either by cultivation through several generations in artificial media or by heat are gradually rendered immune against inoculation with virulent cultures; from this arises the treatment by antitoxic and preventive serums. Serial inoculation diminishes or destroys the virulence of the bacillus; this may account for the spontaneous subsidence of the disease, also for the smaller death-rate at the end of an epidemic.

DIFFERENTIAL DIAGNOSIS.

The diseases for which plague may be mistaken are typhoid fever, typhus fever, and splenic fever, and in the pneumonic variety it may at its onset be mistaken for influenza. It is distinguished from typhoid fever by its sudden onset, by the absence of the rash and the abdominal symptoms, and in a few days by the appearance of the bubo. Typhus fever has a longer fever stage—viz., 14 days. The difficulties chiefly occur in the severe cases without buboes and in the mild cases with slightly enlarged glands which simulate adenitis, the so-called pestis minor, or pestis ambulans; in all cases, however, the diagnosis can be established by finding the characteristic bacillus.

METHODS TO BE USED TO PREVENT EXTENSION OF THE DISEASE.

In order to prevent the extension of plague we must know how the bacillus is conveyed. Plague bacilli exposed for four hours to sunlight at a temperature of 108° F. no longer grow on bouillon. Similarly exposure for four and a half days to sunlight at a temperature of from 84° to 88° F. (the ordinary temperature at Hong-Kong in the summer) produces the same result. In the exsiccator the bacillus succumbs in three hours. From these facts, and because it has never been found in the air, it is most improbable that plague is an air-borne disease. It is conveyed by men suffering from the disease, by clothing contaminated by urine, fæces, or expectoration of patients suffering from it, and by animals such as mice, rats, and pigs coming from infected districts.

The channels of infection are (1) the skin, (2) the respiratory tract, and (3) the gastro-intestinal canal. The skin is by far the most common source of infection by means of wounds, abrasions. or insect bites. Yersin and other observers have confirmed the fact that it is communicated by fleas. In the respiratory tract infection occurs by the discharge from the nose or mouth. Experiments have proved that guinea-pigs may be infected by simply daubing the nostrils with the sputum from a case of pneumonic plague. With regard to the gastro-intestinal tract, although this is not the usual way of infection, to prove that it may occasionally occur I would call attention to Wilson's experiments in feeding pigs with plague bacilli. It is also just possible that in the epidemic of 1896 the disease may have been introduced to Hong-Kong by infected pigs. In August of that year a number of pigs died on a steamship coming from Pakhoi to Hong-Kong; plague was then prevalent at Pakhoi. Wilson examined some of these animals and found that the post-mortem appearances were similar to those met with in plague. A bacillus was obtained from the organs of these pigs which was not to be distinguished from the bacillus of man; the injection of cultures of this bacillus in animals produced the same pathological changes met with in plague. In 1899 Cheung Chau, a small island some 15 miles from Hong-Kong with 1000 inhabitants, was almost decimated by plague. On inquiry I found that preceding the outbreak there had occurred an epidemic amongst the pigs on the island and during that time diseased pork was selling at about one-third the usual price. The Chinese eat sun-dried pork—that is, pork which has not been cooked. Wilson found that plague bacilli remained active for three days in pork which had been boiled if it had not undergone decomposition. It might be said that the human gastric juice would kill the bacillus, but that has not been proved. Wilson found that the bacillus lived for three days in a one-half per cent. solution of hydrochloric acid. Another point in favour of food infection is that in infected houses frequently members of only one family are affected. As with cholera so with plague, the water from an infected area must be regarded as dangerous, seeing that this may be contaminated with plague bacilli by means of the urine and fæces from patients suffering from this disease.

Having dealt with the methods by which it is conveyed we are better able to state the measures required to combat the disease. I will divide these into two: first, public hygiene; and second, the precautions necessary for the individual, or private hygiene.

HYGIENIC REGULATIONS.

Public hygiene.—The importation of the bacillus must be prevented as far as possible. This is the duty of the port medical officers of health, supervised by other medical officers and the inspector of the Local Government Board. If a person arrives from an infected port suffering from plague, or from an illness suspected to be plague, he must be isolated and his dejecta must be rendered harmless. The cabin occupied by the patient, and the ship generally, must be disinfected. All fomites belonging to the patient should be destroyed. All those who have been in contact with the infected person must be kept under medical supervision for 10 days as this is supposed to be the incubation period. As with cholera so with plague, all water from an infected port should be regarded as dangerous. Should the disease occur on shore those suffering from it should be isolated, the dejecta should be burnt, and the house and the articles belonging to the patient should be thoroughly disinfected. All persons who have been in contact with the patient must be segregated under medical supervision for 10 days. The hygienic condition of privies, drains, &c., must be attended to, and a house-to-house visitation of the infected neighbourhood should be made. Meat from infected ports should be inspected. Rats should be destroyed, as it seems that they have played an important part in the production of some epidemics. In China dead infected rats are frequently precursors of outbreaks and are found lying dead in the streets. Patients who have died from the disease should preferably be cremated.

Private hygiene.—During the prevalence of the disease those in attendance on the sick should maintain perfect cleanliness of the person; the hands should be frequently washed and watch should be kept for the slightest abrasions or wounds of the skin. All attendants on the sick should not eat in a sick room and should be most careful to disinfect their hands and face. All food should be well cooked and the dishes should be cleansed with boiled water. Houses

known to contain, or suspected of containing, cases of plague should not be visited unless at the call of duty.

I have necessarily only dealt briefly with the measures to be taken in dealing with this disease. In conclusion, I will give you briefly the procedure adopted in Hong-Kong in dealing with the outbreaks of this disease.

MEASURES ADOPTED IN HONG-KONG.

House-to-house visitation.—The disease is notifiable in Hong-Kong and has been so since 1895, but as this notification is universally evaded by the Chinese, immediately on the receipt of information that the disease has reappeared a house-to-house visitation of the infected districts is made. The sanitary authority has the power to institute such visits in any districts in which the disease may prevail. It must define the limits of such districts and this house-to-house visitation is effected by officers of the board assisted by the police. The removal of the sick and dead is conducted in ambulances provided for the purpose and kept at the hospitals and police-stations. The dead bodies are taken to the public mortuary and there they are examined by a medical officer; those who have died from plague are buried in the cemetery set apart for that purpose, the coffin being packed with chloride of lime or carbolised sawdust.

Segregation of contacts.—At the outset arrangements are made for the isolation of all those who have been in immediate contact with cases of the disease in the infected houses. It will be remembered that in the recent outbreak in Glasgow this measure was employed. When the daily number of cases increased greatly the continuance of this system was found to be impracticable, and the following method was adopted in Hong-Kong. Sheds were erected in various parts of the city to which occupants of the houses were taken whilst their clothing and effects were being disinfected, after which the persons were allowed to return to their own homes.

Isolation hospitals are provided. In my opinion these are better if made of wood—temporary structures which can be destroyed.

Disinfection of infected premises.—This consists in spraying the walls with a solution of corrosive sublimate (1 in 1000) or fumigating with free chlorine gas. The floors and furniture are then scrubbed with a solution of Jeyes fluid, and the walls are limewashed.

Latrines.—Special attention is paid to the disinfection of all public latrines by means of chloride of lime.

Sewers.—Extra flushings of the sewers are carried out by increasing the frequency of the discharges of the flushing tanks which are placed at the heads of all the main sewers.

Destructor.—The night soil at the isolation hospitals and all dressings of the patients are burnt in the hospital compound after having been mixed with sawdust.

Antitoxin.—A supply of Haffkine's antitoxic serum is kept and supplied free of cost.

Rats.—A reward is given for each rat brought to the sanitary authority; in this way 25,000 rats were collected and destroyed in 1900 from January to July.

Anyone acquainted with the conditions of overcrowding, filth, and ignorance that exist in China cannot fail to see that it will be years before plague can be stamped out of that country. To show the overcrowding that exists in some parts of Hong-Kong I may mention that in one health district in that city there are 975 people to the acre. In England, of course, these conditions do not exist, but still there are many localities where, if this bacillus obtained a footing, it would grow and spread. Therefore one must be on the look out in order that if the disease should be introduced it may, by active measures, be checked at the onset.

[Dr. Atkinson then showed lantern views of the plague bacillus and of the plague operations in Hong-Kong, of search parties, and of native plague hospitals, &c. Dr. Bulloch gave a short account of the plague bacillus and the dangers to be feared from inexpert tampering with buboes, and especially the danger arising from the pneumonic form.]

ENLARGEMENT OF BROCKWELL PARK.—For this praiseworthy scheme public companies and private donors have contributed £63 350 of the £66,700 required for the proposed addition of 43 acres to this park at Herne Hill and the necessary legal confirmation of the recent provisional contract for the purchase has been obtained. The acquisition of this additional land will provide for a greatly felt want.

A SUGGESTED METHOD OF PREVENTING WATER-BORNE ENTERIC FEVER AMONGST ARMIES IN THE FIELD.[1]

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EVERYONE is aware that our troops in the South African campaign have suffered very severely from enteric fever—notably in the Bloemfontein outbreak following Lord Roberts's march from Paardeberg. Numerous questions arise in connexion with this outbreak and with the very general prevalence of enteric fever during the campaign which we may hope to see answered when the whole conduct of the war has been under review. In the meantime these questions may be briefly summarised as follows:—1. Has the number of cases of enteric fever proportional to troops employed exceeded that characterising other campaigns in similar climates with similar disadvantageous sanitary surroundings? 2. Was the likelihood of enteric fever becoming epidemic amongst the troops foreseen by the military authorities? 3. Were the best practicable and available means taken to safeguard the army both in stationary camps and when on the march? The answers to these questions will be awaited with immense interest not only by the medical profession but by nearly every person of intelligence who has followed the various incidents of the war.

There can hardly be any doubt on the point as to whether the infection of enteric fever was introduced into South Africa by British troops or was conveyed to the latter from pre-existing sources in the country which was the seat of warlike operations. Enteric fever is endemic in South Africa and prevails in many parts of the country every summer season, whereas the troops leaving England, and probably those also from India and the British colonies, were subjected to medical inspection before embarkation and were no doubt very free from the disease on arrival at the Cape. It is evident, therefore, that the British Imperial forces must have become infected in South Africa by local conditions and did not carry the disease with them from their homes. Again, it seems highly probable from what is known of the mode of spread of enteric fever that the first cases amongst the troops arose from the consumption of water infected with the enteric virus, derived either from the civil population with whom the troops were brought into contact or more probably from the Boer combatants, amongst whom it is generally supposed the disease was present from their first taking the field. Once established amongst our own forces by means of infected water it is quite likely that the subsequent spread was largely due to personal infection from the necessarily prevailing conditions of camp and veldt life—that is to say, common latrines, uncovered and undisinfected excreta, flies carrying contagion from the excreta to the food, dust-storms depositing infective material on food and drink, absence of isolation of the sick, and the want of proper hospital appliances.

Inasmuch as troops on the march are always very careful to choose camping grounds which have not been previously in use unless strategical reasons render such a course necessary, whereas they are often dependent for their water-supply on sources which have been already defiled, either by the enemy or by advance columns of their own side, the assumption would appear to be warranted that if it were possible to render all water used in drinking by the troops innocuous there would be no general development of enteric fever on a large scale sufficient to cripple an army such as has been the case during the present campaign.

We await information as to what has been the practical experience with the South African army of the attempts made to sterilise water for the use of troops, either by boiling or by filtration. Even now, however, it is almost safe to assume that such methods can only have a practical application at stationary camps, and are impossible of

[1] A paper read before the Epidemiological Society on Jan. 18th, 1901.

attainment during the rapid marches and swift changes of position that war conducted on modern methods necessitates. The feature of the wars of the future will probably be, as the result of recent experience, the employment of highly mobile forces. Troops, both foot and mounted, will be expected to move with great rapidity and with very short intervals for rest; transport will be reduced to a minimum; and the filtration or boiling of water for troops on the march will be impracticable. We have not yet heard the full medical details of the march of Lord Roberts's army from the Modder to Bloemfontein, but it seems certain that the infantry outmarched both their regimental and brigade transport and were dependent for their drinking water upon the polluted streams or dams which they crossed and which in many instances had been already grossly fouled by the retreating enemy. Even if filters or boiling apparatus can be made to accompany a rapidly moving column it is very doubtful if men parched by long marches performed under a fiery sun and in clouds of dust can be restrained from slaking their thirst as soon as they arrive at water. It is more than can be expected from human nature under such circumstances to await the tedious delivery of the sterilising filter or the cooling of the water that has been heated to a boiling temperature. The agonies of thirst are intense and at the time far outweigh any such considerations as those of prospective illness from the consumption of a germ-tainted water.

Failing, therefore, the sterilisation of water by boiling or filtration, is there any substance which can be added to water which will destroy the virulence or inhibit the growth of the bacillus typhosus whilst not rendering the water unpalatable or injurious to the health of the consumer? It is evident that the ordinary poisonous, or even non-poisonous, disinfectants are inadmissible for this purpose, as if added to the water in quantity sufficient to exert a germicidal action they would undoubtedly prove harmful to the consumer, if not at first at any rate after repeated doses.

There are other substances, however, which might be expected to prove beneficial as regards their effect upon bacillus typhosus whilst not harmful to the consumer. Such are the dilute mineral acids—dilute sulphuric acid, B.P., and dilute nitro-hydrochloric acid, B.P.—and the organic acids, citric and tartaric, which are largely used in the manufacture of lemonade. Other substances with which we have experimented are acid bisulphate of soda, acid phosphate of soda, and sulpho-vinate of soda. All of these are bodies of which the human system is tolerant, whilst in the proportions which we have found to be required (after contact of from 15 to 30 minutes) to inhibit the growth and activity of bacillus typhosus they are quite palatable, imparting a sub-acid flavouring which is agreeable to the taste and would materially aid in quenching thirst.

As regards previous investigation of this subject, sulphuric acid has been shown by A. Stutzer to be fatal to cholera bacilli in 15 minutes when used in the proportion of 5 parts to 100,000 of water (0·05 per cent. solution). Hydrochloric and nitric acid are probably equally efficacious, but it does not appear that any sufficiently detailed experiments have been made on the destructibility of the organism of enteric fever. Dr. Christmas in 1892 showed that citric acid, although fatal to the cholera bacillus when used in the proportion of 8 parts in 10,000 parts, did not destroy the bacillus of typhoid fever in a less strength than 1 in 1000. Reinsch[2] states that 0·028 per cent. of tartaric acid in water "began to diminish the bacteria and 0·2 per cent. killed them." Tartaric acid has also been employed in filters and its use has recently been suggested in Italy for sterilising salads before consumption.

Schumberg's[3] bromine process for purifying water is specially advocated for army purposes, for sterilising water in the tropics, for use on ship-board, and in the case of waters derived from suspected or infected barbours. It consists in adding 0·06 grain of free bromine dissolved in potassium bromide solution for every litre of water. The excess of bromine is removed by adding an equivalent quantity of ammonia which renders the water palatable. Pfuhl states that the small quantity of bromide present is entirely devoid of the possibility of injury to health and that the taste can scarcely be distinguished from that of the water before treatment. In July, 1897, Braithwaite suggested the use of a mixture of bromide and bromate, added to the water in the form of a tabloid, to be followed by a tabloid of acid sulphate of soda or potash. A similar mixture is sold under the name of "bromidine." The quantity of bromine recommended was that obtained from two grains of bromide, or about one grain per quart, which gives only about one part in 17,500 of water. This quantity is much smaller than the authorities recommend for sterilisation. About one part in 2000 seems to be a safe quantity to use, or nine times the amount suggested above; and this would render the quantity of bromide finally formed and remaining in the water rather too high for dietetic use.

[2] Centralblatt für Bakteriologie, 1891, vol. x., p. 415.
[3] Pfuhl: Zeitschrift für Hygiene, 1900, 53.

EXPERIMENT I.—*750 Cubic Centimetres of Tap Water Infected with One Drop of a 24 Hours' Broth Culture at 37° C. of Bacillus Typhosus (J. 1).*

Agar plate cultures made with 1 cubic centimetre of mixture, and colonies counted after 48 hours' incubation at 37° C.	Results obtained after contact of infected water with acid solution for periods of—			
	5 mins.	15 mins.	45 mins.	24 hours.
Sodium bisulphate.				
1 gramme per pint of infected water.	Bacillus typhosus killed.	Sterile.	—	—
½ gramme per pint of infected water.	—	Marked reduction.	Bacillus typhosus killed.	—
¼ gramme per pint of infected water.	—	—	No reduction.	—
Tartaric acid.				
20 grains per pint of infected water.	—	Sterile.	—	—
10 grains per pint of infected water (A).	Marked reduction.	Three colonies.	—	—
10 grains per pint of infected water (B).	—	Bacillus typhosus killed.	Sterile.	—
5 grains per pint of infected water.	—	—	No reduction.	One colony.
Citric acid.				
20 grains per pint of infected water.	—	Sterile	—	—
10 grains per pint of infected water.	Slight reduction.	30 colonies.	—	—
5 grains per pint of infected water.	—	—	—	No reduction.
Nitro-hydrochloric acid, B.P. dilute.				
20 minims per pint of infected water.*	—	Sterile.	—	—
5 minims per pint of infected water.	—	—	—	No reduction.
Sulphuric acid, B.P. dilute.				
20 minims per pint of infected water.	—	Reduction.	Bacillus typhosus killed.	—
5 minims per pint of infected water.	—	—	—	No reduction.

* The acidity of this solution is equal to 4·8 cubic centimetres $N_{10}NaOH$ per litre and the corresponding H_2SO_4 solution 5·8.

The tabular statement of Experiment I. shows that the substances therein given, when used in sufficient strength and allowed to remain for a sufficient time in contact with the infected water, are capable of preventing any further growth of bacillus typhosus when some of the infected water is agar plated. In the case of tartaric, citric, and nitro-hydrochloric acids it does not appear that anything less than the maximum British Pharmacopœia dose per pint of water is efficient to sterilise if the contact is not to last longer than 15 minutes. Half the maximum dose (10 grains) per pint is inefficient in the case of citric and tartaric acids after 15 minutes' contact, whilst the minimum dose (five grains) per pint of citric acid has no effect after 24 hours' contact; and in the case of tartaric acid the minimum dose did not completely sterilise after the same period. Of the two tartaric acid appears to be the mos

potent in its destructive action upon bacillus typhosus. The pint has been taken as a standard, as this is the quantity of water which a man might be expected to drink off at once. One gramme to the pint is equivalent to 1 in 568.

As regards the dilute acids, nitro-hydrochloric and sulphuric, the former appears to be more efficient than the latter; but no further experiments were made with them, as it was considered essential that the substance to be carried by individual soldiers in the field should be a solid, which could be made up into small tabloids, and not a liquid, which would have to be carried in a bottle and be measured out with some exactitude when required for the purpose of sterilising the water to be used for drinking.

Acid sodium bisulphate is not a British Pharmacopœia medicinal substance. It probably has no purgative effect, as the astringent properties of its free sulphuric acid would tend to counteract any laxative action of the sodium sulphate. The minimum purgative dose of sodium sulphate is a quarter of an ounce, and as we only suggest the use of 15½ grains of the bisulphate to every pint of water a man would have to drink seven pints of water before a quarter of an ounce of a salt, not known to be purgative, would be taken. Even if this quantity of water was drunk in a day there is no evidence that a quarter of an ounce of the bisulphate would exert any harmful effect. There is evidence from the table in Experiment I. that the bacillus typhosus is killed by only five minutes' contact with sodium bisulphate in the proportion of one gramme (15½ grains) per pint of infected water; but in our opinion it is better that contact should be made for fifteen minutes in order that sterility may be insured.

As regards acidity the same amount of acid, as measured by decinormal soda solution, appears to be required to produce a similar result in nitro-hydrochloric acid (dilute B.P.) and sulphuric acid (dilute B.P.), sodium bisulphate in the proportion of one gramme to the pint contains about two and a half times the acidity of 20 minims of sulphuric acid (dilute B.P.). If anything, the nitro-hydrochloric acid appears to be most efficient *quâ* acidity; and this is intelligible when it is recollected that there is likely to be a small quantity of free chlorine in this acid, chlorine having very marked disinfectant properties. The citric and tartaric acids to be efficient must contain at least three times the amount of acid as measured by decinormal soda solution that is sufficient for nitro-hydrochloric and sulphuric acids.

Experimental trials were also made with acid sodium phosphate and with sodium sulphovinate, but they were found to be inefficient.

In order to show that the presence of one cubic centimetre of the acid solution in the agar does not affect the capacity for growth of the bacillus typhosus an experiment was made by adding some of the blank infected water directly to agar tubes containing one cubic centimetre of the acid solution. After 24 hours' incubation at 37° C. the plates showed very numerous colonies in every instance.

EXPERIMENT II.—*800 Cubic Centimetres of Boiled Tap Water Infected with Two Drops of a 24 Hours' Broth Culture of Bacillus Typhosus at 37° C.*

Agar plate cultures made with 0·2 cubic centimetre of the mixture.	Results obtained after contact of infected water with acid solution for periods of—	
	5 mins.	15 mins.
Sodium bisulphate, 1 gramme per pint of infected water ...	Six colonies.	Bacillus typhosus killed.
Tartaric acid, 1 gramme per pint of infected water	120 colonies.	50 colonies.

The tap water was boiled and then cooled before infecting in order to kill the few organisms present capable of growth at blood-heat in the agar and so facilitate the subsequent counting of the typhoid colonies.

Experiment II. is confirmatory of Experiment I., but the typhoid bacilli in this experiment were either more numerous or more resistant than in Experiment I., as the results are not quite so good. The water was infected with two pipette drops of the broth culture instead of with one; on the other hand, only one-fifth cubic centimetre was used for plating the agar instead of one cubic centimetre, as in Experiment I. The inferiority of tartaric acid to sodium bisulphate (equal strengths of each being used) is well shown in this table.

EXPERIMENT III.—*100 Cubic Centimetres of Boiled Tap Water Infected with One Cubic Centimetre (approximately 20 Drops) of a 24 Hours' Broth Culture of Bacillus Typhosus at 37° C. Sub-cultures made into Broth Tubes (Incubated for 48 Hours) by Three Platinum Wire Loopfuls after Contact of Infected Water with Acid Solution for Periods of—*

—	7½ mins.	15 mins.	30 mins.	45 mins.	60 mins.	2 hours.
Sodium bisulphate.						
1 gramme per pint of infected water ...	+	+	+	–	–	–
0·75 gramme ,, ,, ,,	–	–	+	+	±*	–
0·5 gramme ,, ,, ,,	–	–	–	+	+	+
Tartaric acid.						
1 gramme per pint of infected water ...	+	+	+	+	–	–
0·75 gramme ,, ,, ,,	–	–	+	+	+	–
0·5 gramme ,, ,, ,,	–	–	–	+	+	+
Sulphuric acid, dilute B.P.						
20 minims per pint of infected water ...	+	+	+	+	–	–
15 minims ,, ,, ,,	–	–	+	+	+	–
10 minims ,, ,, ,,	–	–	–	+	+	+

* Growth after 48 hours somewhat inhibited in the sub-culture.

Experiment III. shows that when a water is heavily infected with culture of bacillus typhosus (to the extent of 1 per cent.) the time of contact must be very materially increased to prevent subsequent growth of the bacillus in broth. Sodium bisulphate (one gramme per pint of infected water) is then only effective if contact has been made for 45 minutes. Tartaric and sulphuric acids in similar strengths did not prevent the subsequent growth of the bacillus after 45 minutes' contact.

EXPERIMENT IV.—*500 Cubic Centimetres of Boiled Tap Water Infected with One Drop of a 24 Hours' Broth Culture of Bacillus Typhosus. Four Different Cultures were used, marked respectively J 1, R, B, and M, thus making Four Infected Waters. The one marked J 1 was found to contain 9120 Colonies of Bacillus Typhosus per One Cubic Centimetre.*

Agar plate cultures made with one cubic centimetre of the mixture.	Results obtained after contact of infected water with acid solution for periods of—				
	3 mins.	7 mins.	10 mins.	15 mins.	30 mins.
Sodium bisulphate.					
1 gramme per pint of infected water, J 1...	Numerous, but greatly reduced.*	50	3	0	0
1 gramme per pint of infected water, R. ...	Very numerous.	200	24	0	0
1 gramme per pint of infected water, B. ...	Numerous.	140	14	0	0
1 gramme per pint of infected water, M....	Very numerous.	200	Plate spoilt.	0	0

* Greatly reduced when compared with the blank (control experiment.)

Experiment IV. was made to ascertain if any variation arose from the use of broth cultures of bacillus typhosus of different origins. The one marked J 1 was used in the preceding experiment. The others, marked R, B, and M, were kindly forwarded to us by Dr. W. G. Savage of Cardiff. The results, on the whole, show but comparatively little divergence, having regard to the fact that the waters were infected with four different cultures of varying degrees of remoteness from their original stocks.

It may be used as an argument against the deductions which we think that we are entitled to draw from our experiments that in broth cultures of bacillus typhosus the organisms are living under artificial conditions, and that waters infected by natural means derive the living virus directly from the fæces or urine of an enteric fever

patient. There would be reason in such a line of argument if it could be shown that the bacilli on emerging from the human body are more resistant to adverse agencies, such as our chemical solutions are, than those which have been cultured and sub-cultured in broth. That this is not generally held to be so is now recognised, for the probabilities are in favour of the view that pathogenic organisms by propagation in artificial media outside the human body tend to become saprophytic, and whilst very probably losing in virulence yet acquire higher resistant powers to agencies affecting their life and growth than they ever possessed when they flourished as parasites in the human body. The two properties of virulence and resistance to external destructive agencies must be clearly differentiated. We think there is every probability that the agency which proves fatal to the sub-cultured bacilli would have an equal, if not greater, effect upon organisms of high virulence immediately derived from the excreta of an enteric fever patient.

EXPERIMENT V.—*(1) 750 Cubic Centimetres of Boiled Tap Water Infected with Three Drops of a 24 Hours' Broth Culture of Bacillus Typhosus (approximately 0·2 of Broth Culture to 1000 of Water—1 Cubic Centimetre yielded 12,000 Colonies). (2) 500 Cubic Centimetres of Boiled Tap Water Infected with Five Drops of a 24 Hours' Broth Culture of Bacillus Typhosus (approximately 0·5 of Broth Culture to 1000 of Water). (3) 400 Cubic Centimetres of Boiled Tap Water Infected with Eight Drops of a 24 Hours' Broth Culture of Bacillus Typhosus (approximately 1·0 of Broth Culture to 1000 of Water—One Cubic Centimetre yielded 52,000 Colonies).*

Agar plate cultures made with 1 cubic centimetre of the mixture.	Results obtained after contact of infected waters (1, 2, 3), with acid solution for periods of—	
	15 mins.	22 mins.
Sodium bisulphate, 1 gramme per pint of infected water ...	Sterile.	—
Three 5-grain tabloids* per pint of infected water	100 cols.	2 cols.

* The tabloid took seven minutes to dissolve. It only contains 73 per cent. of the theoretical amount of acidity a five-grain tabloid of sodium bisulphate should contain, showing that about one-quarter of the tabloid is made with some inert substance. The experiment was made with No. 1 water only.

Experiment V. shows that sodium bisulphate in the proportion of one gramme per pint is effective after 15 minutes' contact, even for waters containing as many as 50,000 colonies of bacillus typhosus per one cubic centimetre. The tabloid of the same substance takes some minutes to dissolve; and as it contains some 27 per cent. of inert matter it is not surprising that the results obtained with it are less successful than those obtained with the pure chemical.

This experiment leads us to the consideration of the dose of the poison or the number of bacilli which must be imbibed in order to induce the disease—a subject on which practically nothing certain is known. On the one hand, waters which were believed on well-founded grounds to have been productive of outbreaks of enteric fever have been bacterioscopically examined—usually several weeks, however, after the period at which they were supposed to be infective—and no typhoid bacilli have been isolated; on the other hand, it is now known that in some 25 per cent. of all cases of enteric fever the urine during the later stages of the disease and during a prolonged convalescence may be teeming with bacillus typhosus, in some cases being actually turbid from the presence of many millions of these organisms per cubic centimetre. It will be easily understood how, if but a small quantity of such urine finds its way into drinking water, such water may become infected with bacilli exceeding in numbers per cubic centimetre any of those which have been artificially manufactured in the laboratory during the course of our research, although from Experiment III. it appears that sodium bisulphate has a considerable effect even when pollution to the extent of 1 per cent. has occurred.

It is reassuring, however, to know that it is only in about 5 per cent. of these cases of infective urine[4] that this liquid is rendered turbid by the presence of the bacilli, so that the condition is only actually present in about 1·25 per cent. of all cases of enteric fever. It is very doubtful also if the bowel excreta at any time contain bacilli at all comparable in numbers with those now known to be occasionally present in the urine of convalescing patients.

On the whole, it would appear as if we might be justified in assuming (1) that water naturally infected with the virus of the disease does not contain so very large a proportion of the bacillus; (2) that this organism is not by any means resistant to acids or other weak disinfectants; and (3) that the use of such simple means as here suggested by us for combating infection has possibly a future before it, more especially under conditions of life where the means of sterilisation by boiling and filtration are not readily available.

As regards the use of sodium bisulphate during a campaign we would recommend its being employed in the form of tabloids—each tabloid to contain five grains of the bisulphate. The tabloids should be made to dissolve quickly in water, and for this purpose the minimum quantity of gum arabic or other adhesive substance should be used in their manufacture. The tabloids should be put up in well-made light metallic boxes, to hold about a quarter of a pound weight—equivalent to about 350 tabloids—enough to sterilise over 100 pints of water at the rate of three per pint. One of these boxes should be carried by every soldier in his haversack. Supposing a soldier to consume five pints a day when on the march, the quarter of a pound tin would suffice for nearly three weeks, at the end of which time he will probably again be in touch with his transport. Instructions should be given by the medical officer to the rank and file as to the use of the tabloids, and more especially as to the desirability of allowing all contaminated water to remain in contact with the dissolved tabloids for at least 15 minutes before being consumed. The soldier of the future, it is now recognised, must have more intelligence and more individual initiative; and this should extend as much to the care of his health when in camp or on the march as to his action on the battlefield. The acid tabloids will be found to render the water much more effective in slaking thirst and there will in consequence be less inclination to drink large quantities of water, a smaller quantity when acidulated sufficing. The tabloids may also be used as thirst lozenges when water is scarce and will, we believe, be found to be useful by promoting the secretion of saliva and so preventing parching of the mouth. We are informed by an officer recently returned from the war that he found the "thirst lozenges" he took out with him from England most useful. There was an immense demand for them by the men of his company, and the men who took them were satisfied with much less water than those who failed to obtain any.

In a country such as South Africa, where the heat of the day is generally very great and water is scarce and often polluted, it seems very desirable that something should be done both to diminish the inevitable sufferings of our soldiers from thirst and to protect them from the ravages of water-borne disease.

[4] P. Horton-Smith: THE LANCET, May 20th, 1899, p. 1346.

NOTES ON ACQUIRED SYPHILIS OF THE NOSE AND PHARYNX.

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THE manifestations of syphilis are very frequently met with in the upper air-passages. If they are promptly recognised and suitably treated they may be classified amongst the curable ills to which mankind is liable. If, on the other hand, either through the patient's carelessness or through faulty diagnosis the disease is allowed to gain the upper hand there is hardly any limit to the amount of damage which may ensue. The following paper on the subject is based upon observations made chiefly at the Hospital for Diseases of the Throat, Golden-square.

In considering this subject I shall lay the most stress on such signs and symptoms as should lead to the prompt recognition of the trouble, for the diagnosis having been established the treatment is much the same in these cases as

it is in syphilis elsewhere. Primary and secondary lesions must be met by the internal administration of mercury in some form, and tertiary lesions must be treated with iodide of potassium. There is, however, one special feature in the treatment of tertiary syphilis of the throat and nose which must be borne in mind, and that is that very often iodide of potassium alone, even in very big doses, is inefficient, whilst the affection will readily yield to iodide of potassium and mercury combined. The best way of administering the mercury in these particular cases is by inunction. This should not be left to the patient, but poor folk should be admitted to the hospital and the well-to-do should obtain the services of a trained nurse. It is often surprising how rapidly improvement will result from this method even in cases where iodide of potassium has been taken for months without any benefit. As an example of this I may mention the case of a girl who came to the hospital with tertiary ulceration of the palate and vault of the pharynx. She was treated with iodide of potassium in doses ranging from 10 grains to 30 grains three times a day and iodoform was applied locally, but in spite of this the disease persisted and spread. The epiglottis was attacked and later the cords, and finally large gummatous deposits occurred below the cords giving rise to dangerous dyspnœa. I admitted the patient into the hospital with the intention of doing tracheotomy, but as she was under the constant supervision of the house surgeon I thought that I would first try the effect of mercurial inunctions. This was done and the necessity for tracheotomy disappeared. This case had been under treatment for about two years, during which time there had constantly been signs of active disease, occurring first in one place and then in another, and healing had never been perfect in any part; but directly mercurial inunction was adopted in addition to the internal administration of iodide of potassium the disease was kept under perfect control. The ulcers healed, the gummatous swellings below the cords disappeared, and the patient made an excellent recovery.

There is one other point to be remembered in the treatment of tertiary syphilis. When there is much stenosis of the larynx iodide of potassium must be given with great caution, for its first effect is often to cause rapid œdema of the laryngeal mucous membrane and so greatly to increase the obstruction. If, therefore, there is much obstruction to start with, iodide of potassium should only be given if the patient is within easy reach of help, for tracheotomy might become urgently necessary.

PRIMARY SYPHILIS IN THE NOSE.

Primary sore.—This is very rare, although there are several cases on record. Its seat is generally on the alæ or just within the vestibule, though cases have been seen where the sore was on the mucous membrane of the meatus. The following case gives a picture of the trouble. A male, aged 50 years, came to the hospital with the complaint that the left nostril was blocked and that there was some blood-stained discharge. On examination the whole of the nose was found to be swollen and œdematous, and within the left ala of the nostril there was a thickened indurated swelling, of about the size of a bean, extending on to the mucous membrane and covered with brownish-red crusts. The tumour was very hard, but it was not very tender or painful. The rest of the respiratory tract was quite normal. There were, however, very marked and hard swelling of the left submaxillary gland and slight enlargement of the occipital glands. Mr. Spencer Watson reports a case which occurred in a nurse in which there was a well-marked tumour just within the nostril causing stenosis and accompanied by swelling of the submaxillary gland of the same side. These symptoms were followed in due course by secondary syphilis. The tumour was caused by picking the nose with an infected finger.

Thus a hard swelling about the alæ or vestibules of the nostrils causing stenosis but comparatively little pain or inconvenience and accompanied by unilateral swelling of the submaxillary glands should arouse a suspicion that the trouble may be primary syphilis. The tumour has always a very hard base and bleeds easily. The disease with which this trouble is most likely to be confounded is sarcoma, especially if the chancre is on the true mucous membrane.

SECONDARY SYPHILIS OF THE NOSE.

The following manifestations of this disease are met with: (1) coryza; (2) mucous patches; (3) rhinitis erythematosa and rhinitis papulosa; and (4) superficial ulceration.

1. *Coryza.*—This is the earliest and commonest manifestation of secondary syphilis in the nose. It is, however, hardly distinguishable from an ordinary catarrh and is often overlooked. In syphilis the rhinitis is of a subacute type and lasts for a long time. The discharge is scanty and sometimes brownish in colour. The mucous membrane, especially that over the inferior turbinated body is dark and purple-coloured in appearance and looks dry. The coryza commences about the time of the appearance of the rash.

2. *Mucous patches.*—There is a great divergence of opinion as to the occurrence of mucous patches in the nose. I have never seen a case, though I have examined for them in cases where there has been a plentiful supply of them in the mouth and throat.

3 *Rhinitis erythematosa and rhinitis papulosa.*—These conditions are said to accompany the roseolar and papular eruptions of the skin respectively. They are undoubtedly seen round the nostrils and in the vestibules, but probably they never extend on to the true mucous membrane.

4. *Superficial ulceration.*—This is said to occur through the breaking down or erosion of mucous patches, and of necessity it must be extremely rare. Superficial ulceration when it does occur is generally an early tertiary symptom, and it will be described under that head.

From the foregoing remarks it may be gathered that secondary syphilis does not attack the nose in any very definite or serious way. The only symptom that one is likely to be called upon to treat is the coryza, which by producing stenosis of the nostril often causes distress and headache. If the coryza itself or any other accompanying symptom leads one to diagnose syphilis, mercury must be given internally, and such simple local remedies as would be employed for ordinary catarrh must be used.

TERTIARY SYPHILIS OF THE NOSE.

This may be met with in any of the following forms:—(1) gummata; (2) superficial ulceration; (3) deep ulceration and necrosis; or (4) scars, adhesions, and deformities.

1. *Gummata.*—In the nose these break down and ulcerate so quickly that they are seldom seen intact; yet it is most important to be able to recognise them, for appropriate treatment administered promptly may save the patient from all the distress of ulceration and necrosis which are sure to follow if the case is left untreated. The subjective symptoms of gummata are few. There may be some snuffling and slight pain, which is often of a deep boring nature and is worse at night, and there is more or less nasal obstruction. Such symptoms as exist are usually unilateral, at all events in the early stages of the trouble. The septum is the part by far the most commonly attacked, though the turbinated bodies, and especially the inferior turbinated body, may be the seat of the gumma. If the inferior turbinated body is attacked its appearance is very like that of ordinary turgescence; a gumma is, however, firmer and more resistant to probing, and it does not collapse on the application of cocaine. Occasionally the gumma is so small and situated so far back that it cannot be seen, and then the character of the pain and the history of syphilis must be relied on for arriving at a diagnosis. The septum may be attacked in one of two ways: either there is a circumscribed gumma, or the whole of it is infiltrated with gummatous material. The latter condition is by far the commoner. The circumscribed gumma is seen as a large prominent rounded mass projecting from the septum and often impinging on the inferior turbinated body, whilst in diffuse gummatous infiltration the septum is seen to be irregularly thickened and swollen. In some parts the swelling is so great as to block the nasal passages, whilst in other places it is a mere thickening of the mucous membrane. In both forms the mucous membrane is smooth and unbroken, but it may be paler than usual owing to its being stretched over the swelling. To the touch the gummata are hard or semi-elastic until they commence to break down, when they become gradually softer. In making a diagnosis spurs and deflections of the septum must, of course, be excluded, but this should not give any trouble upon careful examination of the nose. Then the circumscribed gumma, especially when softening has commenced, must not be mistaken for a chronic abscess. Here, again, the history of the case and a careful examination of the parts should render the diagnosis easy. The trouble, however, most likely to be confounded with gumma is sarcoma, but the latter is softer, it has a definite attachment which is generally high up on the septum, it becomes pedunculated and is then moveable, it

bleeds readily on being touched, and there is usually a history of frequent epistaxis. The gumma is, moreover, essentially an infiltration, whereas the sarcoma is an outgrowth. If there is any doubt iodide of potassium should be given internally, and if this does not determine the diagnosis a piece should be punched out and a microscopic examination should be made.

2. *Superficial ulceration.*—This is not at all common, but it occasionally occurs from three to five years after infection. As before stated, it is thought by some to be a secondary symptom and to be due to the breaking down of mucous patches, but it is more probably due to the breaking down of superficial gummatous infiltration. This form of ulceration generally occurs on the septum, though the inferior turbinated body is occasionally affected. On examination the ulcer is found to be quite on the surface and rather depressed in the centre. It is covered with a thick, stringy mucus, and on wiping this away the ulcer itself is seen to be of a pinkish colour. It is not very painful or sensitive, but bleeds readily on probing. It shows no tendency to spread. The treatment consists in the administration of mercury and iodide of potassium internally, and locally a cleansing nasal wash should be used.

3. *Deep ulceration and necrosis.*—This is a fairly frequent result of syphilis. The periods of greatest danger are from one year to three years and from eight to fourteen years after infection, from three years to eight years being the period of greatest freedom. As deep ulceration is seldom seen without necrosis, the two conditions must be described together. Whether the gummatous deposit is originally in the submucosa or in the bone the result is the same in either case—viz., ulceration and necrosis. The septum is by far the commonest seat of the deposit, and, as before stated, the trouble is usually unilateral in the first instance. The process, however, tends towards the destruction of both cartilage and bone with such rapidity that perforation may occur and the opposite side may become involved at an early date. Just as a gumma of the nose is seldom seen in its typical form owing to the rapidity with which it breaks down, so in like manner the typical punched-out deep crateriform ulcer of tertiary syphilis is seldom seen, for masses of granulations spring up all round the ulcer with equal rapidity and again alter the appearance. This is the stage in which tertiary syphilis most frequently comes under observation, and on examination the septum is seen to be ulcerated, and around and bulging over the ulcer there is a mass of red granulations on probing, amongst which bare bone is easily reached. Similar processes may attack the turbinated bodies, and rarely may be confined to them, and the floor and the roof of the nose may also be involved. The discharge is at first purulent and blood-stained and contains shreds of necrotic tissue, but later it dries and forms large crusts which are extruded from the nostrils with great difficulty. These crusts undergo putrefaction and give rise to a most unpleasant odour, which is increased by their preventing the escape of necrosed bone. This smell is as bad as that arising from ozæna, though it differs from it in character. At first the patient is himself conscious of the smell and is greatly distressed thereby, but as the disease advances all sense of smell is abolished and the patient is unaware of the offensive odour of the nasal discharges. Sometimes the crusts are discharged by the patient, but more often they have to be removed by the surgeon, and in either case they tend to re-form. As a consequence of these processes the patient's general health is apt to suffer and he gets the appearance and symptoms of chronic septic poisoning. As the disease progresses the septum quickly becomes perforated and around the perforation red angry granulations spring up. These conditions may be hidden by the presence of black crusts, so that they may be overlooked unless looked for. Later still, especially in neglected cases, large fibrous polypi may develop, which are sometimes sessile and sometimes pedunculated. They may spring from either the septum or the turbinated bodies, and they develop *pari passu* with the destruction of the muco-periosteum covering these structures. They are devoid of epithelium, very red, and extremely hard and firm, and are consequently quite unlike ordinary polypi. The great characteristic, however, of tertiary syphilis in the nose is necrosis. It nearly always occurs in cases which are allowed to go on untreated and very often will occur even in spite of every form of treatment. Any or every structure within the nose may be partially or completely destroyed. As a rule the vomer is the first part to suffer, large portions of it separating and coming away. The cartilaginous septum and the nasal bones suffer next in order of frequency, then the floor of the nose, and lastly, the turbinated bodies, and with any of these the roof of the nose may be attacked. Necrosis of the floor naturally results in perforation of the hard palate, and necrosis of the roof may prove a most serious complication owing to secondary cerebral troubles.

4. *Scars, adhesions, and deformities.*—When healing is established the contents of the nasal fossæ may be altered almost beyond recognition. Adhesions, overgrowths, bridges, and abnormal cavities may all help to destroy the usual appearances of the interior of the nostrils. And as within the nostrils so without. The shape of the nostrils and the whole nose may be completely changed, the amount of distortion depending on the particular structures which have undergone destruction. On the other hand, it must be remembered that there may be great loss within without any sign of it exteriorly. For instance, nearly the whole vomer and even part of the cartilaginous septum as well may disappear without any alteration in the shape of the nose, and the same holds good when the turbinated or ethmoid bones are destroyed. Should, however, the vomer and the nasal bones both be destroyed marked deformity will result. This deformity is known as the "saddle-backed" nose. The upper part of the bridge as far as the nasal bones extend sinks into the face, leaving the anterior portion prominent and upturned. This is the commonest form of deformity in congenital syphilis, but it is not so often met with in the acquired disease. Another very common deformity is the depression of the anterior third of the nose. This is caused by the destruction of the whole of the cartilaginous septum and perhaps part of the bony septum. A third deformity is called the "bulldog" nose and is the result of the other two combined. The whole nose sinks bodily into the face, leaving just two upturned slits for nostrils. This deformity is the result of the destruction of the vomer, the cartilaginous septum, and the nasal bones all together. Lastly, the cartilaginous alæ may be destroyed, which may lead to various deformities from loss of substance, contractions, and adhesions, and even complete closure of one or both nostrils may occur. Such deformities are very commonly met with.

Complications.—Various complications may occur in the course of nasal syphilis, of which middle-ear troubles are, perhaps, the most important and most frequent. In the early stages the middle ear may be attacked with acute catarrhal otitis; during the necrotic stage purulent otitis is very common and is due to infection, and later still deafness from stenosis of the Eustachian tubes due to the formation of adhesions may occur. Again there are considerable risks of suppuration occurring in the accessory sinuses of the nose, the walls of which may be involved in the necrotic processes, so that when the disease has quieted down in the nose it may be necessary to treat the sinuses before complete relief can be obtained. Finally, pharyngitis and laryngitis sicca are of very common occurrence. Perforation of the hard palate and cerebral complications have already been mentioned.

Diagnosis.—The diagnosis of tertiary syphilis of the nose is fairly easy. In the earlier stages of the ulcerative process lupus and malignant disease are the troubles with which tertiary syphilis may be confounded and in the later stages when crusts have formed it may be mistaken for ozæna. The following are a few of the chief points which must be borne in mind in arriving at a diagnosis. In lupus the patient is generally younger than in acquired syphilis, the ulceration is very sluggish, and the ulcers are numerous, small, and superficial, and surrounded by fungus-like red or pale granulations. They are also more diffuse and occur as frequently on the turbinated bodies as on the septum. The overgrowth is in excess of the ulceration and there are often signs of lupus either on the face, on the exterior of the nose, or in the throat. The discharge is scanty; crusts, if they are present, are small and without any offensive odour; and there is but rarely any necrosis. Finally, lupus does not yield to iodide of potassium, and if any doubt remains a microscopic examination will greatly help the diagnosis. In malignant disease the patient is generally older, the growth is in excess of the ulceration, and the ulceration is on the surface of the growth. There are no crusts, bleeding is readily induced, and there is a history of frequent epistaxis. Pain is marked and the growth is very friable. Finally, here, again, iodide of potassium is of no avail, and a microscopic examination of a portion of the tumour will generally determine the

diagnosis. In ozæna (limiting the term to atrophic rhinitis) the odour is different and characteristic, there is no ulceration and no granulations or necrosis, and there is marked atrophy of the inferior turbinated bodies. After clearing away the crusts there is but little possibility of a mistake. It must be remembered, however, that it is possible to get true ozæna as a sequel to syphilis in cases in which there has been great destruction of the parts causing too great a patency of the nasal fossæ and in which the mucous membrane has undergone extensive alteration. The ozæna is the result of syphilis, but not part of the syphilitic process. In cases of perforation of the septum the question may arise as to whether it is due to syphilis or to rhinitis sicca. Generally speaking, if the perforation is large and involves the bony septum it is the result of syphilis, but if the perforation is small, more or less circular, and confined to the cartilaginous septum, it is generally due to rhinitis sicca, signs of which are usually seen in the nose. Small perforations may also be occasionally due to trauma.

Treatment.—The general treatment must be on the lines already suggested. Locally the nasal passages must be cleansed and cleared as soon as possible of all crusts and necrotic tissue, sequestra must be removed with forceps, and the granulations must be scraped away with a curette, and the patient must afterwards keep the passages clean with an alkaline lotion. In obstinate cases after cleansing, heated calomel should be insufflated and the nose should be packed with double cyanide gauze. The gauze should be changed daily, about which there is no difficulty as the patient can easily be taught to do it for himself. Packing the nose has a marked effect in preventing the formation of crusts and in keeping the mucous membrane clean and moist.

SYPHILIS OF THE NASO-PHARYNX.

Primary and secondary syphilis of the naso-pharynx are very rare. The primary sore has been observed in this region, and is generally the result of careless instrumentation, especially with the Eustachian catheter. During the secondary period ulcerating papules and mucous patches may occur. They are usually discovered in patients seeking advice for the acute or sub-acute middle-ear catarrh which so often accompanies secondary syphilis.

Tertiary syphilis in this region is by no means rare, and though there are generally signs of the disease in the nose or pharynx as well, yet occasionally the naso-pharynx is the first place to be involved by tertiary syphilis, and may sometimes be alone affected. In such cases the symptoms are pain and aching at the back of the throat, deafness, tinnitus, and headaches, the presence of a discharge which is often blood-stained, and difficulty of breathing per nares. On examination there is seen either on the vault of the naso-pharynx or on the posterior surface of the velum a swelling with a sharply cut, deep ulcer in its centre. The shape of the ulcer varies and the size is anything from that of a threepenny-piece to that of a shilling. When the velum is attacked its whole substance is thickened, its anterior surface is much inflamed, and it is liable to become very quickly perforated.

The diagnosis is generally easy. The usual troubles may have to be excluded, but their differential diagnosis will have to be discussed when speaking of syphilis of the pharynx, so it need not be gone into here.

SYPHILIS OF THE PHARYNX.

The primary sore occurs in the pharynx fairly frequently and is generally located on one or other of the tonsils, the cryptic character of which lends itself to the retention and development of the poison. Seifert was able to collect 179 instances of chancre occurring in the pharynx. Of these 149 were on the tonsils and 30 were about the palate and arches. Infection seems to be generally conveyed through kissing or through the use of infected glasses, cups, tooth-brushes, pipes, &c. The symptoms may be thus tabulated:—1. Aggravated and prolonged sore-throat. 2. Painful deglutition, always referred to the affected side. 3. An indurated swelling of one tonsil. 4. A sluggish ulcer in the centre of the swelling, granular in appearance, covered with inspissated mucus, and of a greyish colour. 5. Early and unilateral swelling of the glands at the angle of the jaw, usually painless, though sometimes tender on pressure. 6. Sometimes marked febrile disturbance and headache. The diagnosis is difficult and often is not cleared up until the appearance of secondary symptoms, when the absence of a primary sore elsewhere will point to the case being one of tonsillar chancre. It may be mistaken for (1) mucous patch, (2) for epithelioma, or (3) for ulcerating gumma.

SECONDARY SYPHILIS OF THE PHARYNX.

The following manifestations of secondary syphilis are met with:—1. Erythema. 2. Mucous patches. 3 Superficial ulceration.

1. *Erythema*.—Erythema of the fauces occurs about the time of the appearance of the rash, though it sometimes precedes it. In appearance there is but little to distinguish it from ordinary sub-acute catarrh; the mucous membrane is, however, a little darker and more venous-looking than in ordinary inflammation, and there is a sharp line of demarcation between the affected and the healthy parts; the redness, too, does not extend forward on to the hard palate. Again, one often sees two crescentic patches of dusky redness, sharply defined, running up the anterior pillars and spreading over the velum, quite symmetrical, and meeting in the middle line at the junction of the hard and soft palates. This appearance is looked upon by many as almost pathognomonic of secondary syphilis, and certainly should lead to a most careful inquiry and investigation and to a sharp outlook being kept for any fresh development. Supposing these crescentic patches of dusky redness are accompanied by the slightest opalescence of the mucous membrane of the tonsils, even if only of their anterior edges or anywhere about the fauces, then the case may be diagnosed with certainty as syphilis and mercurial treatment should be commenced at once. It is not often, however, that one is called upon to diagnose syphilis from these appearances of the throat alone. The remains of a rash, or even of the primary sore, can almost always be found, and as a rule some enlargement of glands will be present which will remove all doubt. In syphilitic erythema of the pharynx there is more discomfort than real pain. Its course is protracted and it is sometimes ushered in by febrile disturbance, which renders the diagnosis doubly difficult.

2. *Mucous patches*.—The most usual time for the appearance of mucous patches of the pharynx is soon after the establishment of the rash, though they may precede the rash or appear quite late in the course of the disease. They may be seen on the tonsils, uvula, soft palate, or arches, and occasionally on the posterior wall of the pharynx. They appear as proliferations slightly raised from the surface and they vary in size from a split pea to a bean. They are covered with a bluish-white opal-coloured membrane, and are consequently called by some "opaline patches." They tend to run together and to become confluent, in which case a large area may be covered. In some cases in the earliest stages they are semi-translucent and present the appearance of a snail-track across the mucous membrane. Occasionally, again, cases are seen where the patches are much larger and resemble ordinary condylomata. Such patches present large flat elevations often standing up from the mucous membrane as much as one-eighth of an inch. They are in colour of a dirty yellowish-white and they have an uneven cauliflower-like surface. The whole of the tonsils and soft palate and even the roof of the mouth may be quite covered with them. Isolated mucous patches, seen perhaps most typically on the tonsils, are generally round and are surrounded by an areola of much inflamed mucous membrane. There are, as a rule, patches to be seen also on the buccal mucous membrane, the lips, or the tongue, as well as on the pharyngeal walls. They are very persistent and they show a great tendency to relapse; indeed, a fresh crop may appear quite late in the course of secondary syphilis. It is very important to remember that the discharge from a mucous patch is most virulently poisonous, more so than that of any other secondary manifestation, and almost as much so as that of the primary sore. Patients should be carefully warned of this fact and cautioned not to kiss others and to reserve glasses, cups, spoons, forks, pipes, &c., for their own use. I once treated a man for syphilis and before recovery he married, shortly after which I treated his wife for the same disease. Her mouth and pharynx were covered with mucous patches, and I suppose I was not explicit enough in my directions, for while she was still under treatment her sister came to me with a primary sore on the lip, which was followed by well-marked secondary syphilis. There is only one important subjective symptom of mucous patches—namely, dysphagia. This in aggravated cases is so distressing that the patient refuses food and consequently becomes ill and wasted. The diagnosis is as a rule quite easy when definite mucous patches have formed, but it is important to be able to

diagnose secondary syphilis of the pharynx in its early stages, for the sooner treatment is begun the better for the patient. The earliest sign of trouble is the appearance of small bluish white opalescent areas upon a congested mucous membrane. They are usually first seen on the anterior edge of one of the tonsils, possibly on the uvula or anterior arch, and if accompanied by the crescentic patches of erythema on the soft palate alluded to above secondary syphilis may be definitely diagnosed and treatment commenced. I lay very great stress on this opalescent appearance, for when once recognised it is an invaluable help to diagnosis, and I know of no other symptom more often overlooked than this is. Typical mucous patches seldom occur singly, but generally in groups, and very often such groups are absolutely symmetrical, which will at once suggest syphilis. Besides general treatment mucous patches should be treated locally. They may be readily induced to heal by the application of an aqueous solution of either bicyanide of mercury (10 grains to the ounce) or of chromic acid (30 grains to the ounce or more); but it is not enough just to paint it on, for if this is done the application never reaches even the surface of the mucous patch on account of the mucus covering it. Each patch must be treated separately, and before the drug is applied the surface must be thoroughly dried and freed from all secretion by means of blotting paper or absorbent cotton-wool. Two or three applications made in this way are generally sufficient. The great infectivity of the secretion must be borne in mind in carrying out this treatment. The hands should be carefully washed afterwards and the cotton-wool mops and blotting paper should be burned.

3. *Superficial ulceration.*—This is generally seen from one to three years after primary infection. It is often difficult to determine whether it should be classified as belonging to the secondary or to the tertiary period of syphilis, but pathologically it is probably due to the breaking down of a superficial infiltration of gummatous material, though the erosion of a mucous patch may also lead to ulceration. It occurs most frequently on the tonsils. In shape the superficial ulcer is round or oval, its area is limited, and its action is sluggish, and when once established it does not tend to spread either superficially or deeply. The symptoms are unimportant. There are some discomfort in the throat and some dysphagia. The diagnosis is generally easy. A superficial round or ovoid ulcer, limited in extent, sluggish in action, and not very painful, should suggest syphilis, and a general examination will usually reveal signs confirmatory of this diagnosis. Amongst the general signs I would draw attention to the almost invariable enlargement of the sub-occipital glands, and more especially to the swelling of the gland above the internal condyle of the elbow. Should this latter be found enlarged without any other obvious cause it is almost safe to form a diagnosis of syphilis. These glandular enlargements persist long after other signs of secondary syphilis have disappeared. The local treatment consists in the application of chromic acid in the same way as recommended for mucous patches.

TERTIARY SYPHILIS OF THE PHARYNX.

The following tertiary troubles are met with:—1. Gummata, (*a*) circumscribed and (*b*) diffuse. 2. Ulcerations. 3. Scars, contractions, and adhesions.

1. *Gummata.*—Just as in the nose so in the pharynx, it is very rare to see a definite gumma. Almost invariably the infiltration has commenced to break down and to ulcerate before the patient comes under observation. (*a*) Circumscribed gummata appear as swellings varying in size from a bean to a walnut and even larger. They are generally situated on the posterior wall of the pharynx or on the velum, often on its posterior surface, and sometimes on the tonsils. They are generally in the submucous tissue, though occasionally they infiltrate the mucous membrane itself. They are at first hard and somewhat ill-defined, but quickly become soft in the centre, as evidenced by the appearance of a soft yellow spot which rapidly passes on to ulceration. As a rule, gummata form, soften, and ulcerate with astonishing rapidity, though occasionally they assume a chronic form and remain as tumours for a very long period. Dr. Hunter McKenzie relates a case where there was an extensive gummatous swelling of the pharynx on its posterior wall which persisted for more than two months and was dissipated by iodide of potassium without ulcerating. Cheatle has shown a similar case before the Laryngological Society of London, and I have recently seen one at the Throat Hospital. The symptoms complained of are chiefly those which may be referred to mechanical difficulties of deglutition and phonation. There is a certain amount of aching pain, which is very often worse at night. The diagnosis is sometimes difficult, though the softening centre and the result of treatment soon clear it up. Occasionally, and especially when a tonsil is the seat of disease, there may be some difficulty in excluding malignant disease. (*b*) In diffuse gummata the posterior wall of the pharynx and the soft palate are attacked with about equal frequency. When the soft palate is attacked gummata are very commonly found, as already stated, on its posterior surface, and in consequence are often overlooked until perforation has occurred. Another variety of diffuse gummatous infiltration often attacks the lateral walls of the pharynx, causing large, red, painless swellings, generally on both sides, and very like ordinary hypertrophy, only that it is more pronounced and less painful. These swellings do not show the same tendency to soften and break down as do similar infiltrations elsewhere in the pharynx. They are very persistent, and when seen should always suggest the possibility of syphilis.

2. *Ulcerations.*—When the gummatous infiltration is in the mucous membrane proper the result of its breaking down is often a superficial serpiginous ulcer which is characteristic of early tertiary syphilis. Such ulcers are seen on the tonsils, soft palate, or anterior pillars. They are covered with dirty pus through which red granulations peep up. Sometimes there is seen, on the soft palate especially, a somewhat superficial form of ulceration, covering a large area, but taking a long time to destroy the deeper tissues and thus to cause perforation. Nevertheless, if untreated, it will in time destroy a great portion of the soft palate, though in doing so it pursues a very sluggish course. Deep crateriform ulcers are, however, the commonest form of tertiary syphilis in the pharynx. They are due, as before stated, to the breaking down of gummatous deposits. The soft palate is perhaps most commonly affected, but it attacks with almost equal frequency the posterior wall of the pharynx, whilst tertiary ulceration of the tonsils is by no means uncommon. The ulceration commences in the centre and quickly extends to the limit of the deposit. The occurrence of ulceration will greatly increase the discomfort complained of when the disease is still in the gummatous stage. The pain on deglutition becomes quite severe, and the presence of tenacious muco-pus, which is expectorated with great difficulty, is often very distressing to the patient. Directly the palate is perforated regurgitation of food and drink and alteration of the voice are complained of, and the patient's general health is apt to become much depreciated. As to diagnosis, a deep punched-out crateriform ulcer with a red areola and with its surface covered with greyish pus is characteristic of the trouble, and diagnosis should not be difficult. Occasionally the question may arise as to whether the ulceration is malignant, and sometimes, in the palate especially, the diagnosis may rest between lupus and syphilis. The single deep ulcer cannot well be mistaken for lupus, but in the more superficial type of ulceration mentioned above, which is very sluggish in its course, neither healing nor extending very rapidly, and taking a long time to cause perforation, it may be a matter of the greatest difficulty to determine whether the case is one of lupus or of syphilis. In lupus, however, the ulceration is very superficial and patchy and is surrounded by nodules characteristic of that disease. The affected area shows signs of healing in one place and of breaking down in another, and there is but little surrounding inflammation or pain, and finally, though scarring is extensive, adhesions are extremely rare. In superficial syphilitic ulceration, on the other hand, though the ulceration is not of the usual deep punched-out character, it is deeper than in lupus and there are no nodules and no attempt at healing. The ulceration is surrounded by an areola of inflamed mucous membrane, and as well as scarring there are generally adhesions.

3. *Scars, contractions, and adhesions.*—All tertiary syphilitic processes in the pharynx are followed by well-marked cicatrices when healing is established. These give the tonsils a hard lobulated appearance and the posterior wall of the pharynx a patchy or streaky look. The appearance of the soft palate varies with the extent of the disease. Sometimes the whole palate is a mass of cicatricial tissue, in which case its functions become impaired and both deglutition and articulation suffer. This is, of course, more marked when any great loss of substance has occurred. When there are large perforations

the voice assumes the cleft palate character and deglutition is, at first at any rate, very imperfect. Adhesions are a very common result of tertiary syphilis and are very important both from a diagnostic and surgical point of view. They may occur in many forms, of which the following are amongst the most common. 1. Adhesion of the posterior pillar of the fauces to the posterior pharyngeal wall, leading through cicatrisation to dragging of the uvula and palate over to the affected side. This causes practically no inconvenience as regards phonation and deglutition, but it may lead to deafness of the corresponding ear through dragging and pressure on the Eustachian tube and impairment of muscular action. 2. Unilateral adhesion of the palate to the posterior pharyngeal wall. This, again, does not cause much practical inconvenience, though it may lead to unilateral deafness in the same way as the above deformity. 3. Adhesion of almost the entire palate to the posterior pharyngeal wall. This is not at all uncommon and is sometimes the cause of much discomfort. It may result from deep ulceration of either the soft palate or the posterior wall, or both, but I think it is most common in connexion with disease of the palate. 4. Total atresia. This is fortunataly very rare, though there are a good many cases on record. The opening left, however, is often so small that the consequences may be the same as if complete closure had occurred. Such cases are accompanied by mouth breathing, complete nasal stenosis, inability to cleanse the nostrils of their secretions, loss of taste and smell, liability to attacks of laryngitis and bronchitis, and deafness. This last complication is by far the most important, for it tends to be steadily progressive and is often accompanied by attacks of the most intense earache. 5. Adhesions between the posterior pharyngeal wall and the base of the tongue. This deformity is very rare, about 30 cases only having been recorded. When they do occur the opening is often so small that it is amazing how air, and more especially food, can find their way through. Surgical treatment in these cases is sometimes absolutely necessary in order to establish an opening sufficiently large to admit of the taking of nourishment. 6. Adhesion of the velum to the base of the tongue. This again is very rare, there being only one or two cases on record.

Treatment.—In all forms of tertiary syphilis of the pharynx the combination of iodide of potassium internally and mercurial inunction is especially useful and should be employed at the earliest possible opportunity. In tertiary ulceration a good deal may be done locally to arrest the disease and to promote healing. The surface of the ulcer should be carefully cleansed and insufflated with iodoform, or in some cases with heated calomel, either of which applications will be found most useful. In cases in which there is much pain the insufflation of orthoform will be attended with results most grateful to the patient. One insufflation will often relieve pain for as long as 24 hours, so that daily application will keep the patient quite comfortable. Both nitrate of silver and chromic acid are also useful applications. The best method of applying either of them is to fuse a little of the pure drug on to a probe, and having cleansed the surface of the ulcer to paint it on. Lastly, the patient may be given for use at home a gargle composed as under: chlorate of potash, 10 grains; lotio nigra, half an ounce; water to one ounce. This is most useful for the relief of pain and for cleansing the throat. As regards the treatment of adhesions I should say that the less the operative interference the better for the patient. Universal experience teaches us that while it is easy enough to make a larger opening it is almost impossible to maintain that opening, and that the last state of the patient is likely to be worse than the first owing to re-adhesions and contractions leaving a smaller opening than before. It is, therefore, never wise to resort to operation unless there are very strong reasons for trying to relieve the obstruction, such as rapidly increasing deafness, constant and intense earache, or great discomfort to the patient arising from the nasal stenosis. Should operation be considered absolutely necessary every conceivable device will have to be tried for maintaining a larger opening. Cleverly devised plastic operations, the insertion of plugs, tubes, lint, &c., have been resorted to with occasional success, but as a rule, however great the ingenuity displayed, disappointment is only too apt to result, and of this fact the patient should be warned beforehand. From observation on a great number of cases I should say that it is most surprising how great an amount of contraction may exist and yet cause comparatively little discomfort, and that therefore it is seldom necessary to exercise the ingenuity which such cases undoubtedly require, if they have to be treated surgically. When the opening is so small as to cause symptoms it is generally sufficient to pass dilating instruments regularly and in increasing sizes in order to render the patient quite comfortable, and this the patient can be easily taught to carry out for himself.

Harley-street, W.

REMOVAL OF A FOREIGN BODY FROM THE BRONCHUS BY INTRATHORACIC TRACHEOTOMY.

BY H. MILTON, M.R.C.S. ENG.

IN THE LANCET of March 27th, 1897 (p. 872), I described a successful case of anterior median thoracic incision for a tuberculous tumour of the anterior mediastinum. I have now to record a second case in which the same operation was performed for a foreign body in the right bronchus, this time, unfortunately, with a fatal result. The different issues in the two operations were due in all probability to the fact that asepsis could be carried out in the first case, whereas in the second sepsis already existed at the time and place of operation.

The patient was a Fellah, aged about 40 years, on whom tracheotomy had been performed some years previously for syphilitic stenosis of the larynx. A short time previous to his re-admission to hospital the tubular portion of the outer silver tube had become detached from the shield and had fallen into the trachea. On admission the patient seemed in no ways incommoded except for a slight fixed pain behind the sternum. No signs could be detected by external examination and the laryngoscope showed nothing beyond the stenosis of the larynx. A long silver probe passed through the tracheotomy wound into the trachea as far as its bifurcation gave at first no indication; eventually, however, after bending its lip to the right so as to facilitate its introduction into the right bronchus a loud metallic click was produced, audible to the bystanders. During the following days many attempts were made to seize and withdraw the foreign body with various shaped forceps, blunt hooks, coin-catchers, slings, and mounted sponges without success, the patient being frequently inverted. The patient was then left some days without further interference, but his temperature began to rise and he was affected with a constant cough, accompanied by purulent expectoration, which gradually became fœtid. Examination of the chest showed that air entered both lungs freely and that there were many moist râles and bronchitic sounds over the lower half of the right lung. The gravity of his condition was explained to the patient as well as the serious nature of the operation proposed; he, however, expressed his anxiety to risk anything to obtain relief. It was evident that the tube could only be removed through a tracheal incision and that this incision could be made in three positions, either in the neck, through the anterior or through the posterior mediastinum. The opening in the neck existed already and all efforts to remove the tube through it had been unsuccessful. Of the two mediastinal routes the posterior seemed to present more technical difficulties and to offer fewer chances of reaching the foreign body; it would at the same time afford better opportunities for drainage. It was decided ultimately to follow the anterior route. The patient was chloroformed through the tracheal opening, warmed chloroform vapour being blown into it through a glass nozzle. The skin over the thorax was thoroughly cleansed and at this moment an accident occurred which was regrettable, but which did not, I think, affect the result of the operation. The soapy water from the front of the chest was allowed to run on to the front of the trachea and a small quantity of it was sucked into the tracheotomy hole. The greater part of it was expelled by coughing and by partial inversion of the patient. The anæsthetic was then re-commenced and the operation proceeded with.

An incision was made from the tracheotomy wound to the

ensiform cartilage, the skin on each side was reflected outwards, and the sternum and trachea were exposed. The tissues were then separated with the knife from the notch of the sternum, and the point of the forefinger insinuated as far down as possible on the posterior surface of the bone, displacing backwards the trachea, innominate artery, and left innominate vein. The sternum was then sawn through in the middle line, the incision commencing at the notch, where the deep structures were carefully protected by the forefinger and being gradually carried down as far as the ensiform appendage. A chisel was inserted into the incision and rotated sufficiently to allow the introduction of two powerful retractors with which the two halves of the sternum were dragged apart. The chief opposition to the separation was caused by the ligamentous fibres at the back of the sternal notch, and after their careful division with the knife the two halves could be freely separated, the distance between them at the sternal notch being fully four centimetres. The trachea was now fully exposed to the point where it was crossed by the innominate vessels, but even after these were well retracted the bifurcation could not be seen. A hook was therefore introduced into the tracheotomy opening and the trachea drawn strongly upwards; this manœuvre combined with the retraction of the vessels allowed the bifurcation to be plainly seen. An incision about 2 centimetres long was then made into the anterior wall of the trachea at the lowest part exposed—i.e., just above the bifurcation—and a teaspoonful of evil-smelling frothy mucus escaped and was carefully mopped up. The lips of the incision were drawn apart and a strong light thrown into the trachea towards the right bronchus; the hoped-for metallic gleam did not, however, appear. The little finger was then introduced and its tip inserted into the right bronchus at once impinged on the lost tube which had become blackened and practically invisible. Guided by the finger small forceps were introduced but failed to get a firm hold, the difficulty being caused by the position of the upper edge of the tube which lay imbedded in the thickened bronchial wall. Eventually the tube was made to partially rotate and was then seized and extracted without difficulty.

So far the operation had been perfectly simple and unaccompanied by difficulty or hæmorrhage. There had been no interference apparent with the circulation and respiration of the patient, and its immediate object, the removal of the foreign body, had been successfully effected. The remaining steps of the operation, the closure and drainage of the wound, were less satisfactorily performed and might easily be improved on. Before criticising them, however, it will be better to follow the operation to its completion and to give the subsequent history of the case.

Having removed the tube an attempt was made to close the tracheal wound. Owing to the depth at which this had to be carried out, and especially to the extreme tenuity of the tracheal walls between the rigid cartilages, this suture was imperfect and had been much better omitted, as the stitches could not fail to become septic. A drain of dermatol gauze was laid along the anterior mediastinum reaching up the trachea half-way to the tracheotomy opening, the gaping of the two halves of the sternum allowing of the introduction of a considerable quantity of gauze, and the skin flaps were loosely approximated with sutures. The incision immediately below the tracheotomy wound was tightly sewn up and a tracheotomy tube inserted. A dressing was applied all over the front of the thorax and neck up to the tracheotomy wound and the patient was removed to bed. His condition an hour later was excellent, his pulse was under 100, and his breathing, though shallow, was regular and not hurried. He was fully conscious and free from shock. He passed a good night and slept quietly. The next morning his general condition was good, but his temperature had risen and there had been much secretion from the tracheal wound, which had dirtied his dressings. His breathing was somewhat increased in frequency and there were moist râles in both lungs without consolidation. It was thought advisable to change the dressings on account of the contamination which had taken place. It was found that the two halves of the sternum were closely approximated, kept apart only by the edge of the gauze plug, which was tightly nipped between them. The plug was removed with great difficulty and with much pain to the patient, and vent was given to a quantity of fœtid fluid collected round the lower tracheal opening. This fluid was sponged away, the skin flaps were approximated, and the thoracic walls were supported by stopping, several wicks of gauze being introduced from the root of the neck towards the lower tracheal opening. After the dressing the patient was fairly comfortable, but towards the evening he began to show signs of heart failure, the pulse and respiration becoming very rapid and his temperature falling. Stimulants were freely administered by the mouth and hypodermically and the patient passed a fair night. The following morning the temperature was about 102° F., but the pulse and respiration remained very rapid. The dressings were changed frequently and the secretion, which remained fœtid, was sponged away from the tracheal openings. Towards evening the symptoms of heart failure became more pronounced, and in spite of free stimulation he died during the night.

Necropsy.—A post-mortem examination made shortly after death showed an acutely septic condition of the anterior mediastinum and commencing pneumonia of both lungs. There was no lesion or affection of the pleura, pericardium, or great vessels of the chest. There were two ulcers in the right bronchus from the pressure of the tube, and extreme cicatrisation of the larynx from old syphilitic changes. The fatal result of the operation must, I think, be attributed to one of two causes—(1) acute septicæmia; and (2) interference with the functions of the thoracic organs due directly to the operative lesions. The evidence is, I think, largely in favour of the first supposition. All the elements necessary for its occurrence were present, suppuration preexisted, the drainage and occlusion of the wound were imperfect, and the cellular tissue of extreme tenuity occupying the anterior mediastinum probably presented very little resistance to microbic invasion while affording a ready means of entry for the resulting toxins. To the other possible cause I shall refer later when considering the intrinsic dangers of the mediastinal operation.

Before quitting the particular case now reported it may be well to consider how its particular dangers might have been better averted. Had I to perform the operation again I should modify the procedure after the removal of the foreign body as follows. No attempt would be made to close the tracheal incision by suture, the difficulties of an effectual closure being, as already pointed out, very great. The greater part of the manubrium sterni would be removed subperiosteally, and through the large opening thus afforded a large gauze plug would be introduced down to the tracheal wound sufficiently firmly to occlude it. The two halves of the sternum would be firmly united below this opening by three or four strong silver sutures, leaving their ends projecting between the skin flaps sutured to the same extent. I would suture the skin from the tracheotomy wound down to the opening in the manubrium and occlude the whole of the sutured skin with collodion and gauze, thus rendering it very easy to maintain an effective dressing over the plug which might be changed every three or four hours.

Apart from the difficulties and dangers of any particular case it is necessary to make a careful analysis of the intrinsic dangers of anterior median thoracic section. They may be considered under four heads: hæmorrhage, shock, lesion to any vital function, and, lastly, sepsis. Of hæmorrhage there is practically no risk; no important vessel requires to be severed, and the great vessels lying below the sternum are quite easily protected. Shock has been completely absent in both my cases and there seems no reason to dread its occurrence. The vital functions which might be affected by the operation are two: circulation and respiration. In neither of my cases has the heart's action been appreciably affected and it is difficult to conceive of any wound or injury of heart or pericardium if due care be exercised. There are, however, in the immediate neighbourhood the cardiac plexuses, superficial and deep, through which pass the nerves controlling the heart's action. These plexuses lie in close relation with the arch of the aorta and are not likely to be cut or directly injured. The traumatism to which they are exposed produces no gross lesion comparable to section, and brain and spinal surgery have shown us that nervous tissues of the highest importance resist the gravest lesions short of destruction if sepsis be avoided. Cerebrum, cerebellum, and spinal cord have all proved their powers of resistance; the pneumogastric has been constantly exposed, pinched, drawn aside, and otherwise exposed to surgical insult with impunity; and the cervical sympathetic has been severed and its ganglia removed. The medulla oblongata is certainly still treated with the greatest respect, and it is, of course, possible that the thoracic plexuses so closely associated with it in the maintenance of circulation are equally sensitive to traumatism. This is a point which experience only can demonstrate, but I think it probable that

the slight traumatism to which they are of necessity exposed is not likely to affect them materially. The respiratory function can, on the other hand, hardly fail to be affected. The sternum is a very important element in the bony cage on whose movements respiration largely depends, but in neither of my cases has respiration been seriously interfered with. Ordinary respiration was perfectly well carried on by the diaphragm and it was only in spasmodic efforts such as coughing that any difficulty arose. So long as the lungs are unaffected the results of this operation on respiration need not be feared, but should pneumonia or severe bronchitis supervene the insufficiency of the expulsive efforts might gravely complicate the condition. An injury to the pleuræ at the time of operation is, of course, a possibility, but in my experience it has been very easily avoided, and did it occur it would at all events, if limited to one side, hardly produce any serious complication and the rent could be easily and at once repaired by sutures. To my mind the only real intrinsic danger of the operation is sepsis The mediastinum is occupied by very thin loose fibrous tissue, with imperfect blood-supply and probably very little vitality, affording, as before stated, very little resistance to microbic invasion and great facility for absorption. Moreover, the cardiac plexuses are very likely to be affected by septic inflammation occurring around them, much more so than by the traumatism to which they have been exposed.

Sepsis is, here as elsewhere, the great danger; every precaution must be taken to avoid its production and where it already exists to prevent its extension. The experience gained from the peritoneal cavity can help us but little here. The peritoneum is capable of dealing with a very considerable amount of septic matter, and its power of rapidly secreting large quantities of fluids makes drainage an easy matter either by tube or by gauze. In many cases of mediastinal operation it will, of course, be possible to insure asepsis and in such cases complete immediate closure of the thorax will be indicated. Where sepsis is unavoidable drainage will be necessary, and to my mind the sole difficulty of mediastinal operation lies in the provision of efficient drainage. Drainage may be attempted in three directions—forwards through the sternum, upwards to the neck, or backwards through the middle and posterior mediastina. Drainage through the sternum can only be efficiently provided through holes made for this purpose. The manubrium sterni might be removed almost entirely, the periosteum being left, or trephine holes be made when required, care being taken not to injure the internal mammary artery, which is well outside the sternal limits. Drainage holes having been provided the two halves of the sternum should be firmly reunited. Drainage through these openings might be afforded by gauze plugs or specially designed glass tubes. Drainage upwards to the neck might be sufficient in some cases, would be much simpler in its application, and would have the advantage that the sternal and skin flaps might be completely united over the gauze plug, leaving only a skin opening in the neck. Drainage backwards through the middle and posterior mediastina is quite prac icable and not so difficult as it seems at first sight. On the cadaver I have found it possible to insinuate my finger from the anterior to the posterior mediastinum and passing along the right side of the vertebræ to reach the third and fourth dorsal rib without injury to vein, nerve, or pleura, and by the resection of the rib from behind between its angle and tuberosity to create a practicable drainage route. There is, of course, considerable risk of tearing the pleura; a tear, however, in this position would be unlikely to produce any very serious effect. On the whole, I consider anterior drainage through special holes made in the sternum to be the best method, but experience only can decide the question, and undoubtedly the method employed must vary with the nature of the intervention.

The operation is not one to be performed without very evident indication or without due consideration being given to all other possible methods of relief. Until its technique is much more thoroughly worked out the operation is one that is only justifiable when life itself is in danger, when there is a good chance of being able to remove the *causus morbi*, and where no less dangerous route or method is available. Undoubtedly the splitting of the sternum affords the most perfect approach to the anterior and middle mediastina; it remains to be seen whether this approach is not all too dangerous to be admissible except in the most desperate cases.

Cairo.

A SINGULAR CASE OF EXTENSIVE DEPOSIT OF PHOSPHATE OF LIME IN THE LUNGS.

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PATHOLOGIST TO THE BRISTOL ROYAL INFIRMARY; PHYSICIAN TO OUT-PATIENTS AT THE BRISTOL HOSPITAL FOR SICK CHILDREN.

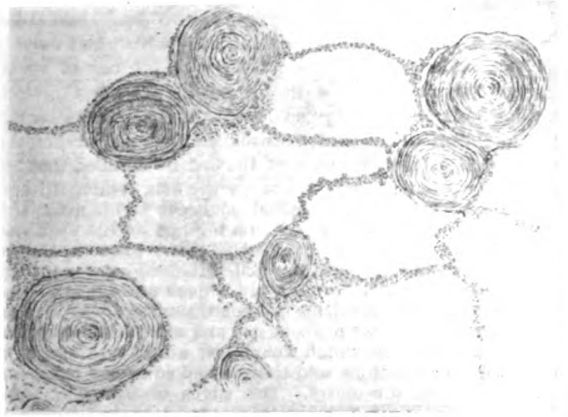
THE following case possesses some interest on account of its rarity. I have been unable to find any record of one that closely resembles it.

An unmarried woman, aged 32 years, was on June 10th, 1899, admitted into the Bristol Royal Infirmary under the care of Dr. Shingleton Smith for pneumonia and she died the same day. The following notes are abstracted from the report of the necropsy. The woman was well nourished and was of average height. Both lungs were universally adherent to the chest wall. The apices were pigmented and slightly scarred from the presence of local superficial tuberculous disease, but no fibroid or calcareous nodules were present in the thickened patches, and no old tuberculous nodules were present elsewhere over the pleuræ. The right lung was consolidated throughout. The left lung, though apparently free from recent consolidation, was abnormally resistant. Both lungs were cut with considerable difficulty and the cut surfaces presented a very unusual sensation to the touch. Everywhere they were extraordinarily gritty and small granules, in size and appearance like grains of sand, were left on the finger. Close inspection showed the substance of the lungs to be thickly studded from apex to base with these granules. In no part of either lung were they more numerous than in any other part. Both lungs were slightly pigmented and in some degree abnormally tough. The right lung was in a state of red hepatisation throughout and the lower lobe of the left lung showed some degree of commencing consolidation. The left lung may, however, be said to have been almost free from acute disease, and although almost free from consolidation the granules it contained caused it to readily sink in water. This lung weighed 45 ounces; the right lung weighed 57 ounces. In order to form a rough estimate of the amount of sand-like material in the lungs a cubic inch was cut out of one lung, and by tearing and repeated washing of this small portion most of the granules contained in it were removed. After being dried they weighed 98 grains. In drying they lost their sand-like appearance and became shrivelled and lustreless. The larynx, trachea, and bronchi were healthy. The mediastinal and bronchial glands were pigmented but presented nothing else noteworthy. The other organs showed nothing abnormal.

The following is a description of the granules and the result of analysis kindly made for me by a former pathological clerk, Dr. J. M. H. Munro: "The deposit consists of rounded transparent or translucent nodules which can be separated from the lung tissue by rasping it and washing the rasped material by elutriation or decantation with water. They are hard, fairly uniform in size, not affected by being kept in water for months, and only slightly affected by boiling-water. In a steam-oven they lose 8 per cent. of moisture but remain translucent. Under the microscope they appear to be built up of concentric laminæ, and the surfaces of many of them show markings corresponding in size and shape with the outline of pulmonary alveoli. The specific gravity is 2·325. On prolonged ignition they leave about 76 per cent. of ash which consists almost entirely of phosphate of lime. On treatment with dilute hydrochloric acid they give off a few bubbles of gas, showing the presence of a little carbonate, the phosphate of lime is dissolved out, and the concentric laminæ of organic matter become clearer in outline. The nodules answer the general tests for albuminoids and give 1·12 per cent. of nitrogen by Kjeldahl's process. Their general composition may be represented by moisture, 8 per cent.; albuminoid matter, 7 per cent.; phosphate of lime, 75·7 per cent.; non-nitrogenous organic matter, carbonates, and undetermined substances, 9·3 per cent."

Microscopical sections of decalcified portions of the left lung taken from areas apparently free from any of the lesions of acute pneumonia showed few abnormal changes. In places there was swelling with proliferation of the epithelium of the alveoli, but apart from the presence of the nodules there was

little evidence of chronic disease. The nodules generally lay in the walls of the alveoli which were of normal thickness, but here and there localised fibroid thickening was present in the immediate neighbourhood of a nodule. The outline of most of the nodules was a broad oval or slightly irregular circle. Lamination was very distinct and in most instances could be traced to the centre. Under as high a power as one-twelfth objective only in very few nodules could I trace any suggestion of a nucleus. In some a considerable portion



Calcareous granules in the lung.

in the centre appeared homogeneous, but comparison with other nodules showed gradations from this uniform appearance, through slightly marked lamination up to very definite lamination. The homogeneous aspect did not therefore appear to suggest a different origin for the central and peripheral portions of the nodules. In a few nodules small darkly-staining granules could be seen in the centre, but these were exceptional and in one or two instances at least appeared to be foreign bodies which had found their way into a central depression of the section of the nodule. The nodules stained blue with methyl aniline violet. There was no evidence that the nodules had arisen in the walls of the blood-vessels. The vessels were everywhere healthy and passed freely over the nodules without showing any connexion with them.

Inquiry into the patient's past history failed to throw any light upon the disease. She had for some years been a domestic servant and afterwards a shop assistant in a drapery establishment. Apparently her health had been moderately good. She had suffered from no serious illness, dyspnœa on exertion had not been marked, and apparently the exercise of the lungs occasioned by singing could not have caused discomfort since she was a member of a chapel choir. She had not been addicted to taking any medicine or medicinal food likely to contain phosphates.

Extensive calcification of other organs has occasionally been recorded. On mentioning this case to Dr. Rolleston he kindly drew my attention to the case of calcification of the liver recorded by Mr. Targett.[1] Another case of calcification of the liver has comparatively recently been recorded by Dr. Brill and Dr. Libman.[2] Both of these cases are. however, of somewhat different character from the above. In one the calcification occurred in large masses and in the other it was considered to have begun in the arteries. Cohnheim's Lectures on Pathology[3] contain a reference to extensive calcification of the lungs. Virchow is there quoted as saying that he has seen the lungs so infiltrated with deposits of lime salts that they felt like pumice-stone. A brief abstract of another case, recorded in *Le Mouvement Médicale*, is published in the *London Medical Record* (1879, p. 189). In this case the lungs contained 14 per cent. of lime and magnesium salts, but these salts were deposited as needle-shaped crystals, not in granules.

In this case calcification had obviously taken place in so-called amyloid bodies, and the presence of large quantities of phosphate of lime was secondary to the existence of amyloid bodies in the lungs in unusual numbers. The reason for the appearance of these bodies still seems to be in great measure a mystery. Dr. Ophüls in a recent article discusses their formation,[4] and considers them to be produced by the deposit of amyloid material around a nucleus of degenerating cells. Apparently bodies similar to amyloid bodies but of much larger size may arise by deposition of organic material around degenerating structures. I have met with a smooth ovoid mass in the mesentery of the size of a large pigeon's egg composed of layer upon layer of organic matter partially infiltrated with lime salts. In the centre of these layers was a hard, somewhat irregular, calcareous mass, without doubt a calcified lymphatic gland. Yet in the nodules from the lungs I could not detect a nucleus. If a nucleus of degenerating cells once existed it must have been small and have rapidly become absorbed at the time the first layers of amyloid material were being deposited. Although I can detect no nuclei in the nodules, that they were started by numerous localised centres of irritation seems to be as reasonable an hypothesis as any. The resemblance to acute miliary tuberculosis of the lungs is only superficial but it is in some degree suggestive. It is more easy to imagine the disease to have originated in general invasion of the lungs by some microbe of low virulence than to believe that the circumscribed morbid changes were produced by a toxin uniformly distributed through the pulmonary tissues by the blood.

In conclusion, I have to thank Dr. Shingleton Smith for permitting me to use this case and Dr. Munro for his careful analysis of the granules.

Clifton, Bristol.

[1] Transactions of the Pathological Society of London, vol. xl., p. 123.
[2] Journal of Experimental Medicine, September and November, 1899, p. 541.
[3] Vol. ii., p. 642.
[4] Journal of Experimental Medicine, vol. v., No. 2, p. 111.

NOTES ON A CASE OF POISONING BY COAL TAR NAPHTHA.

BY G. HERBERT DOUTHWAITE, M.R.C.S. ENG., L.R.C.P., L.R.C.S. EDIN., &c.

CASES of fatal accident in which coal tar naphtha acts as the poisonous agent appear to be few and far between. The Registrar-General's report for England and Wales for 1886–95 in giving statistics regarding the relative frequency of the commoner poisons divides into the three groups—(1) poison used by suicides, (2) poison taken by accident and negligence, and (3) poisons used by murderers. Under none of these headings is there any record of naphtha poisoning. Then, again, the third edition (1896) of the "Nomenclature of Diseases drawn up by the Joint Committee appointed by the Royal College of Physicians of London" makes no mention whatever of this product. Neither is it referred to in such standard works as Brunton's "Pharmacology, Therapeutics, and Materia Medica," Hare's "Text-book of Practical Therapeutics" (1897), Taylor "On Poisons," Mann's "Forensic Medicine" (1898), &c. In the fifth and sixth editions of Guy and Ferrier's "Forensic Medicine," however, we have, in the chapter on "Inebriants," the following brief description given: "*Coal naphtha.*—This product of the distillation of coal-tar has proved fatal to a boy 12 years old. It was taken in the large dose of three ounces and death happened in less than three hours. The first symptoms were those of intoxication and furious delirium, soon followed by insensibility, stertorous breathing, and cold skin; then, after partial recovery following vomiting, fresh symptoms of collapse. Four days after death the body was pervaded by the odour of the poison."[1]

Considering. then, the comparative rarity of known cases of naphtha poisoning attended with fatal results, and acting upon the suggestion of the county coroner (Mr. J. Hyslop Bell), I venture to bring the following details of such a case under the notice of the readers of THE LANCET.

On Dec. 21st, 1900, a little girl, aged five years, was taken to bed by her mother as usual at 6 P.M. The mother at the same time carried upstairs a pint bottle filled with coal naphtha and placed it on the bedroom floor inside the door,

[1] THE LANCET, August 23rd, 1856, p. 230.

intending to put it away in a cupboard at a more convenient opportunity. She then went downstairs and with the help of a neighbour began to decorate the living-room for the approaching festive season. At eight o'clock, on her neighbour inquiring as to the whereabouts of certain illuminated texts and mottoes, she ran upstairs to her child's bedroom in order to get them out of a box in which they were kept. Her attention was at once drawn to the little girl who seemed to be breathing with extreme difficulty. Being alarmed at her condition she cried out that the child was dying. Her husband immediately ran off to procure medical assistance and came to me as the nearest practitioner. The only information that could be obtained from him concerning the nature of the case was that his daughter had gone to bed in her usual health and that now she appeared to be dying. I at once returned with the father to the house. In the meantime the neighbour, detecting the peculiar odour in the breath of the child, had drawn the mother's attention to the fact that the naphtha bottle was not now so full as before. When I arrived at the house I found my patient in an almost comatose condition, breathing rapidly and with great difficulty. There was a strong, heavy, benzine-like odour in the breath which issued from the mouth and nostrils. The face was dusky and somewhat livid and the hands were clammy and rather cold. The pupils were dilated and the conjunctiva was insensitive to the touch. The pulse was rapid and small. On carefully examining the bottle which contained what remained of the liquid I concluded that the child must have taken from between two to three ounces. After injecting a small quantity of brandy with a glass syringe into the rectum the patient seemed to revive a little and she vomited. A mixture of table-salt and warm water was then administered which caused her to vomit freely three or four times. The vomited matter smelt strongly of the poisonous liquid and consisted of partially digested food together with a quantity of frothy mucus from the air-passages. The lower extremities of the child being next immersed in a foot-bath of hot water into which a small quantity of mustard had been thrown I flicked the face with a towel dipped in cold water and also at regular intervals dashed cold water into her face. Artificial respiration was then performed and when the livid discolouration had diminished to some extent the body was inverted for a few minutes in the hope of exciting the respiratory centre in the medulla. External stimulants were also applied to the nostrils. The characteristic odour of the breath persisted for some time, which was possibly due in part to the fact that at the time of her imbibing the naphtha a certain quantity would doubtless have found its way through the glottis. The intensely laborious respiratory efforts, together with the presence of frothy mucus in the air-passages, may to some degree have been ascribed to the same cause. After the expiration of one and a half hours of continued and persistent application of restorative treatment the child regained consciousness and began to cry. A teaspoonful of brandy in sweetened hot water was then administered and I left the house, instructing the father to let me know about 11 P.M. how the patient progressed. Later in the evening I learnt from him that his daughter appeared to be going on all right and seemed somewhat inclined to sleep. On the 23rd, at about 8 P.M., both parents called at my house and informed me that they thought the child had "a touch of bronchitis." I gave them an expectorant mixture, recommended poulticing with linseed-meal and mustard, and promised to call early next morning. I examined the patient the following day and found her to be suffering from acute general inflammation of the air-passages. The mouth and throat were likewise slightly inflamed, and an eruption—resembling sordes—had now broken out on the lips. The bowels being constipated, a dose of two teaspoonfuls of castor oil was prescribed. The chest was regularly poulticed; demulcent drinks—such as milk and barley-water, &c.—were ordered, and brandy in teaspoonful doses every four hours was prescribed. The patient, however, gradually succumbed to the acute bronchitis, dying at 1.15 A.M. on Jan. 1st, 1901. An inquest followed in due course.

Coal naphtha may be readily distinguished from wood naphtha by the heavy benzine-like odour characteristic of the former. I ascertained that the child's father was employed at the corporation gas-works and was in the habit of using this product as a detergent for the purpose of removing tar from his hands.

Stockton-on-Tees.

A CASE OF ANTHRAX.

BY ARCHIBALD KIDD, M.R.C.S. ENG., L.R.C.P. LOND., D.P.H.

THE following are the brief notes of a case of anthrax which was recently under my care.

On the evening of July 4th, 1900, I was asked to visit a man who was said to have a large boil on his neck. The patient, aged 27 years, stated that he had been a little out of sorts for a week or two and had been troubled with a crop of boils on his neck which had quickly got well after the matter had been squeezed out of them. The boil for which he sought my advice was first noticed on June 30th, and on July 2nd he squeezed some matter out of it and went to his work as usual on that day and on the 3rd, though on the afternoon of the 3rd he noticed that his neck was becoming swollen, and on the 4th, feeling ill and cold, he kept his bed and applied poultices to his neck, and these, he thought, had been put on too hot as his neck was blistered. At the time of my visit (8 P.M.) his temperature was 103·4° F. and his pulse was 120. His tongue was thickly furred. He complained of pain in his neck and chest and he looked very ill. On removing the poultices there was seen on the right side of the neck, about one and a half inches below the ear, a small hole which would just admit the end of a probe and from which he said that he had squeezed out some matter two days previously. The edges of this hole were indurated and almost black in colour, and it was completely surrounded by a ring of vesicles of various sizes, the largest, which was probably formed by the confluence of smaller ones, measuring about half an inch long and being raised a quarter of an inch above the surface. The vesicles covered an area of about the size of a sixpenny-piece. The surrounding skin was of a purplish-red colour and the tissues of the neck were brawny and œdematous; the œdema extended over the right half of the chest as far as the nipple. The appearance was so striking that the probability of the case being anthrax suggested itself at once, and on inquiry I elicited the information that he worked in an office in connexion with the hide trade and was certainly exposed to the risk of becoming inoculated.

I advised an immediate operation, to which he readily consented, and I thereupon excised the area covered by the vesicles, scraped the subjacent tissues with a Volkmann's spoon, and applied pure phenol, making a circular wound about an inch in diameter. On the morning of July 5th the neck was rather more swollen and the œdema had extended and now involved both sides of the chest down to a line midway between the nipples and ensiform cartilage. His general condition, though on the whole satisfactory, was not quite so good as it was on the previous evening. On the 6th there was some improvement in the local condition. The wound in the neck was covered by a thick, black scab, and the œdema of the left side of the chest was beginning to subside; at the same time, however, the patient's general condition was distinctly worse. The temperature was 104°, the tongue was dry, brown, and tremulous, with sordes on the lips, and the pulse was 130. For the next three days his condition was very critical, the temperature ranging between 103° and 104°. The local condition, however, continued to improve, and on the evening of the 9th all œdema had gone from the left side of the neck and chest, leaving the right side still brawny and œdematous and making apparent immediately beneath the right clavicle a soft and boggy swelling with an indurated, irregular base, and on the same evening his general condition first showed signs of improvement. About a week later chloroform was administered and an incision was made into the swelling beneath the clavicle, and at the same time the scab on the neck, which was beginning to separate, was removed. His subsequent progress was uneventful, and when I last saw him in September, on his return from the seaside, the wound in the neck had healed, though that on the chest had not quite closed; otherwise he was in very good health.

The case was an extremely interesting one and for some days I had very little hope of the patient's recovery. I am inclined to think that the swelling which formed beneath the clavicle was largely gummatous in nature. It was for that reason that I delayed opening it as long as possible, and it was more the hope of relieving the pain than the

expectation of finding pus that finally decided me to do so. The result, however, was not altogether satisfactory, as though the pain was relieved only a few drops of pus were evacuated, the swelling consisting almost entirely of soft and sloughy tissue which took a long time to separate and so allow the wound to heal.

I very much regret that I was unable to confirm the diagnosis by bacteriological examination, but I think that the typical appearance of the lesion, coupled with the obvious sources of infection to which the patient was exposed, leave very little room for doubt as to the true nature of the disease. It is probable that the man became inoculated on July 2nd, when he went to work with an exposed open wound. Though the constitutional disturbance in this case appears to have been considerably greater than in either of the cases reported by Mr. E. O. Bousfield[1] and Mr. E. A. Clarke[2] the precisely similar treatment which I adopted was followed by an equally successful result as in those cases.

Ilford.

SPLENO-MEDULLARY LEUKÆMIA: REMARKABLE TOLERANCE OF ARSENIC.

BY CHARLES HEATON, M.D. BRUX., M.R.C.S. ENG., L.R.C.P. LOND.

THE notes of the following case of spleno-medullary leukæmia will be of interest at the present time in showing the remarkable way in which arsenic is tolerated by some patients. The patient came under my care in July, 1899, with the disease in an advanced condition, the blood showing typical features and the proportion of red corpuscles to leucocytes being 12 to one. He was taking liquor arsenicalis in small doses (from two to three minims) twice a day, but even this caused gastric irritation and abdominal discomfort, and had to be omitted. In consultation with Dr. H. D. Rolleston hypodermic injections were advised, beginning with $\frac{1}{60}$th of a grain of arsenious acid (this was later changed to arseniate of soda). The following were the amounts injected.

Date.	Duration of treatment.	Amount of drug administered.	Duration of intervals.
1899.			
Sept. 29th to Nov. 19th.	51 days.	4 grains arsenious acid.	—
Interval, Nov. 19th to Dec. 5th.	—	—	16 days.
Dec. 5th to Dec. 12th.	7 days.	1½ grains arsenious acid.	—
Interval, Dec. 12th to Dec. 18th.	—	—	6 days.
Dec. 18th to Jan. 2nd.	15 days.	7½ grains arseniate of soda.	—
1900.			
Interval, Jan. 2nd to Jan. 8th.	—	—	6 days.
Jan. 8th to Feb. 12th.	35 days.	28 grains arseniate of soda.	—
Interval, Feb. 12th to March 5th.	—	—	22 days.
March 5th to March 13th.	8 days.	½ grain arseniate of soda.	—
Interval, March 13th to March 21st.	—	—	8 days.
March 21st to May 1st.	41 days.	34 grains arseniate of soda and 2 grains of sodium cacodylate.	—
May 1st to May 16th.	15 days.	8¾ grains sodium cacodylate and 9 grains of sodium cacodylate by mouth.	—
May 16th to June 26th.	41 days.	35 grains arseniate of soda and 1¾ grains of sodium cacodylate by mouth.	—

The total number of days was 271, including intervals amounting to 58 days, and the total amount of hypodermic administration was as follows: arsenious acid 5½ grains, arseniate of soda 105 grains, and sodium cacodylate 10¾ grains. In addition, 10¾ grains of sodium cacodylate were administered orally. The maximum dose administered at one time was 2¾ grains of arseniate of soda, equivalent to 4 drachms 26 minims of liquor sodæ arseniatis.

The progress of the case was very carefully watched and the patient was seen in consultation by Professor W. Osler. Weekly counts of the blood were made by myself and the urine was tested for arsenic. At no time were there any objective symptoms of poisoning, no pigmentation of the skin, no evidence of neuritis, no irritation of the conjunctivæ, the subjective symptoms being restlessness and feeling of "pins and needles" in the legs, this being the indication for an interval. Mucous diarrhœa occurred latterly, but as this is a frequent concomitant of leukæmia it was probably unconnected with the treatment. The patient had suffered before the commencement of the treatment from slight eczema at the flexures of the joints and a mild but worrying herpetiform eruption of the prepuce. Both these conditions continued unaltered during the administration. The influence of the treatment was for a time apparent in the blood, as shown by the differential count, the average number of red corpuscles keeping steadily about 3,000,000 per cubic millimetre. The arsenic was rapidly eliminated in the urine, Marsh's test showing large quantities for the next 24 hours after injection and then in rapidly diminishing amounts for several days afterwards, but for exactly how long I am not able to say precisely.

The solution used for the hypodermic injections was a 1 in 500 solution of eucaine hydrochloride B, 15 minims of which contained in solution one grain of arseniate of soda. The injections were made with a very fine needle and one of Down's "all metal" syringes, holding 20 minims; with this one is able to warm the fluid to blood heat by holding the syringe over a spirit flame. If the fluid is injected cold much local irritation ensues. The solution was filtered and boiled frequently and appeared to undergo some chemical change if kept for more than a week, when it caused a little irritation and was prone to grow a mould if contaminated. With the above precautions no local trouble at the seat of injection ensued.

I found that cacodylate of soda when hypodermically administered was followed by no apparent result of any kind, but that administration by the mouth was always succeeded by a complaint of a taste of garlic and of gastric disturbance.

Westgate-on-Sea.

[1] THE LANCET, Oct. 20th, 1900, p. 1133.
[2] THE LANCET, Nov. 10th, 1900, p. 1346.

RESULTS OF 35 PROPHYLACTIC INJECTIONS OF THE ANTI-DIPHTHERITIC SERUM.

BY PERCY R. BLAKE, M.R.C.S. ENG., L.R.C.P. LOND.,
LATE HOUSE SURGEON TO THE NORTH-EASTERN HOSPITAL FOR CHILDREN.

RECENTLY, at the Suntrap Convalescent Children's Home, High Beech, Essex, three consecutive cases of faucial diphtheria occurred. At the time there were 38 children in the home, so after the third case developed it was deemed advisable to try the effect of prophylactic doses of antitoxin. I think the result obtained may prove interesting. I may say that the three infected children were removed immediately the diagnosis was made to the sanatorium, situated about 50 yards distant from the home. Accordingly I started the injections on Dec. 5th, 1900, when I injected 15 of the children, finishing the remaining 20 the next day, Dec. 6th. The serum used was that obtained from the Jenner Institute of Preventive Medicine, and the injection was of the quantity and strength of one cubic centimetre containing about 334 units, the prophylactic dose prescribed on the bottles. In every case the strictest antiseptic precautions were observed and the skin of the flank was the site of injection. The following were the results obtained: in no case did any local lesion follow at the site of injection; no other case of diphtheria ensued; and in 31 cases no reaction followed. The following are the notes of the remaining four cases.

CASE 1.—The patient was a boy, aged five years, suffering from rickets and chronic tuberculous peritonitis. He was injected on Dec. 5th. On Dec. 9th the sterno-mastoid glands on the right side of the neck became slightly

enlarged, hot, and tender; there was no faucial lesion and the temperature was 101° F. On Dec. 10th the temperature was 98·5°, the glandular swelling, tenderness, and heat having subsided.

CASE 2.—The patient was a boy, aged six years, suffering from early spinal caries without abscess formation. He was injected on Dec. 5th. On the night of Dec. 10th and again on the night of the 11th he complained of pain in the left knee. The joint was a little warm but there was no apparent swelling or stiffness. His temperature was never above 99° F., and after the night of the 11th he complained of no more pain.

CASE 3.—The patient was a girl, aged five years, suffering from tuberculous hip disease with ankylosis of the joint. She was injected on Dec. 6th. On Dec. 9th she developed a scarlatiniform eruption all over the trunk, arms, legs, and face. Her temperature was 100° F. The child did not complain of feeling ill and the rash was evidently unirritating. On Dec. 10th the rash was only apparent on the thighs and abdomen. Her temperature was 99 6°. On Dec. 11th the rash had quite gone. Her temperature was 98·5°.

CASE 4.—The patient was a boy, aged five years, suffering from early tuberculous hip disease. He was injected on Dec. 6th. On Dec. 14th he developed a papulo-macular eruption on the abdomen, chest, and arms. His temperature was 98 6° F. I had no further opportunity of watching his progress.

The results obtained from these prophylactic injections are certainly encouraging. The three infected children undoubtedly contracted the disease from one another, but after the injections no further cases developed. The occurrence of antitoxin phenomena after quite small doses of antitoxin is also interesting to note.

Waltham Abbey, Essex.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

ELTHAM COTTAGE HOSPITAL.

A CASE OF PERFORATION OF THE STOMACH DUE TO GASTRIC ULCER; OPERATION, RESULTING IN RECOVERY.

(Under the care of Dr. J. D. RICE.)

THERE are three varieties of perforation in gastric ulcer. In the ordinary form an opening exists which is large enough to permit extensive extravasation of the stomach contents so that a general virulent peritonitis is rapidly set up. In a second form the extension of inflammation from the ulcer leads to the formation of numerous adhesions, limiting the extravasation which occurs subsequently, so that the peritonitis induced is confined to a small area, and a localised abscess results. In the third variety the perforation is minute, so that, although a general peritonitis is set up, it is not necessarily virulent in character, and the opening itself is soon closed by the effusion of plastic lymph. To this class the following case probably belongs. The virulence of a peritonitis varies greatly and is dependent on the form of micro-organism present. In all cases of peritonitis a bacteriological examination of the exudation is desirable.

On July 7th, 1900, Dr. J. D. Rice was asked to see a girl, a domestic servant, who had arrived from a distance in a vehicle and was said to be dying. He found she had such acute pain in the abdomen that she dared not cry out on account of the agony which it caused. Her temperature was 103° F., the pulse was 130, and the respirations were 24. Her history was as follows. For some time she had had pains in her stomach, with vomiting, accompanied by great pain, which always occurred after taking food. The ingestion of fluids alleviated the pain provided sickness was not caused. The vomited material she described as tasting sour; it occasionally contained blood, but never in great quantity; her bowels were irregular On the morning of July 6th she went to a medical man who gave her some medicine and some advice about her food. At 7 P.M. the same day she had an attack of sickness, during which she felt "something give way with a snap in her inside." The pain caused was so severe that she fell on the kitchen floor and lay there moaning until she was discovered after some time. As she believed herself to be dying the medical man whom she had seen that morning was sent for; he ordered her to bed and advised that her relatives be communicated with. They sent her to see Dr. Rice on the morning of July 7th.

On examination the abdomen was found to be distended, rigid, and immobile; it was painful to pressure on the epigastrium but not elsewhere. The liver dulness was absent. The patient refused to inspire deeply on account of the pain. Recognising the probability of a perforating gastric ulcer Dr. Rice suggested to her relatives that she should enter the hospital in order to undergo an operation as her home was by no means antiseptic. After two hours' deliberation they consented and she was removed to the Eltham Cottage Hospital at 8.30 P.M. Her temperature before removal was 104° and on arrival it was 102°. She was then rather collapsed and verging on the unconscious.

Mr. A. S. St. John and Mr. H. Sandford Smith saw the girl in consultation with Dr. Rice and confirmed his diagnosis, and he therefore decided to operate at once. Mr. St. John gave the A.C.E. mixture and Dr. Rice opened the abdomen in the middle line by an incision six inches in length. All bleeding points were secured by forceps. On opening the peritoneum in the usual way Dr. Rice thought that free gas escaped, though Mr. Smith was not of the same opinion. The stomach presented in the wound. Hot antiseptic sponges were placed round it and there was an escape of fluid which only differed from normal peritonitic fluid in containing some white flocculent particles. Contrary to expectations, on examining the stomach inch by inch no perforation was found, but a portion of its anterior surface was fixed by very fragile adhesions of lymph to the abdominal peritoneum. These adhesions, Dr. Rice believed, occluded the perforation, and as the patient was then breathing badly it was necessary to finish the operation rapidly. Hot saline solution was injected into the sub-mammary tissue and a hypodermic injection of ether and strychnine was given. The abdominal viscera were flushed with a solution of mercuric iodide and were sponged as dry as possible. The peritoneum was closed with interrupted silk sutures. The portion near the adherent stomach being partially digested gave way if any strain were put on the sutures. The abdominal wall was closed by strong silk passing through all its layers. No drain was used. The wound was dressed with iodoform gauze.

At 1 A.M. on the following morning the patient had recovered from the shock of the operation. The temperature had fallen to 100°, the pulse was 110, and the respirations were 20. The patient had an uninterrupted convalescence; on only one occasion did her temperature rise above 100°. She was nourished by nutrient enemata for six days and the wound was dressed on the sixth day. It healed by first intention. After four weeks she was discharged cured and went to a convalescent home. On Oct. 29th she was in perfect health and had no digestive troubles.

Remarks by Dr. RICE.—The points of interest in this case are that adhesions formed in about 27 hours of sufficient strength to occlude the perforation, and that operative interference in an apparently moribund patient prevented a general peritonitis which would doubtless have proved fatal.

ROYAL BERKSHIRE HOSPITAL, READING.

A CASE OF JEJUNAL INTUSSUSCEPTION; MULTIPLE GROWTHS IN THE JEJUNUM AND DUODENUM; LAPAROTOMY; DEATH; NECROPSY.

(Under the care of Dr. W. J. MAURICE.)

THE occurrence of intussusception in an adult is very rare, and it is in the majority of the cases associated with the presence of a new growth. Usually the new growth is at the apex of the intussusception, but sometimes it is found above the invagination,[1] and in these cases it may give rise

[1] THE LANCET, May 7th, 1892, p. 1028.

to the intussusception either by causing obstruction of the intestine or by interfering with the progress of peristalsis. For the notes of the case we are indebted to Mr. Arthur Stanley Green, late house surgeon.

A woman, aged 23 years, was on Feb. 10th, 1900, admitted into the Royal Berkshire Hospital under the care of Dr. W. J. Maurice. For a lengthened period the patient had been suffering from anæmia, vomiting after food, and vague pains in the region of the stomach. At 7 A.M. on Feb. 10th she was awakened by a pain in the epigastric region which was so severe that on attempting to stand she immediately fainted. She was seen very soon afterwards by Dr. J. A. P. Price, who gave her a small dose of morphia. At 12 noon Dr. Maurice saw the patient in consultation with him and it was decided to remove her to the hospital and to operate if her condition did not improve. On admission at 3.15 P.M. the pulse was rapid and small, the respirations were costal, and the abdominal wall was so rigid that nothing could be determined by palpation. The patient stated that her bowels had been opened on the previous evening.

The operation was commenced at 4 P.M. A median incision from the ensiform cartilage to the umbilicus (this was afterwards enlarged) revealed a purple-coloured tumour extending from just below the margin of the right lobe of the liver obliquely across the spinal column to the left sacro-iliac articulation; this proved to be a large intussusception of the jejunum. Very little difficulty was experienced in reducing the invaginated gut, which, although very dark purple in colour, immediately commenced to improve under warm sponges wrung out of saline solution. While returning the gut a small polypoid growth of about the size of a walnut was felt in the lumen of the bowel just above the intussusception; this was excised and the aperture was closed with two rows of silk sutures. The abdominal incision was sutured in three layers. The patient stood the operation well.

On Feb. 11th the patient had passed a comfortable night and was free from pain, but her pulse varied between 130 and 160 and she complained very much of thirst. On the 12th she said that she felt much better. She was quite comfortable during the day, but at 10.15 P.M. she had a severe pain in the left iliac region which she described as being exactly like her previous seizure. The abdomen was distended, tympanitic in front and dull in the flanks; the pulse was very rapid and small. As it was thought probable that either the intussusception had recurred or that leakage had taken place from the line of sutures in the bowel the patient was taken to the theatre and the abdomen was again opened. A considerable quantity of fluid escaped; the portion of intestine which had been invaginated was red and œdematous and the gut above was very much distended. There was no diffused peritonitis and the line of suture in the intestine (where the polypus was removed) was quite sound and had not leaked. The peritoneal cavity was flushed with sterilised water and the abdominal wound was closed. The patient died at 3 30 A.M.

Necropsy.—At the post-mortem examination it was found that the portion of intestine which had been invaginated was quite black and very much swollen; it was the upper portion of the jejunum 34 inches from the pylorus and was 14 inches in length. Ten polypi were found in the lumen of the bowel; the lowest was just above the intussusception and the uppermost was just below the pyloric opening. These polypi were all attached by thin pedicles to the valvulæ conniventes of the intestine, the point of attachment in the majority being nearly opposite the mesentery. They varied in size from that of a millet seed to that of a small walnut, the larger being lobulated; the surface of the small growths was quite smooth. Histologically they proved to be papillary adenomata.

Remarks by Mr. GREEN.—The principal features of interest in the above case are as follows:—1. The age and sex of the patient. The late Dr. Hilton Fagge[1] says: "In adults, however, it (i.e., intussusception) is infinitely more rare than might be supposed from the comparatively numerous cases that Hutchinson, Peacock, and others have collected from different medical works. Dr. Wilks used to say that he had only seen one case in a grown-up person." Intussusception is more common in males at all ages than in the female, the proportion being about two and a third to one (Dr. R. D. Brinton[2]). 2. The position of the invagination. Although enteric intussusception is much more common in adults than in young children the most frequent seats are the upper and lower portions of the ileum, only 4 per cent. being jejunal. Dr. Hale White[3] reports a case in an adult in which the invagination commenced two feet six inches from the pylorus and says: "It is very rare to get an intussusception in an adult; it is very rare for it to occur in the upper part of the jejunum and rarer for it to be due to a polypus." Dr. Thomas Peacock[4] records a case, in an adult female, in which the upper part of the jejunum formed the seat of the invagination. 3. The number and position of the growths. Cases in which a single innocent pedunculated tumour has been found in the small intestine are numerous, but I cannot find any record of a case where the pedunculated growths were so numerous and situated so high up in the alimentary canal as they were in this case. Leichtenstern,[5] in 128 cases of intestinal polypi, found that five (3·95 per cent.) were jejunal and two (1·5 per cent.) duodenal, but he does not mention whether they were single or multiple. Kanthack and Furnival[6] recorded a case of multiple polypi in the duodenum and jejunum, but they were very small in size. Mr. Treves,[7] speaking of intestinal polypi, says: "About 80 per cent. are met with in the rectum, next in frequency come the ileum and colon. They are rare in the jejunum and still rarer in the duodenum." I think it hardly possible to doubt that although the lowest polypus was not found at the apex of the intussusceptum as is usually the case, these growths were the indirect if not the direct cause of the invagination. I am indebted to Dr. Maurice for permission to publish this case.

[1] Principles and Practice of Medicine, second edition, 1888, vol. ii., p. 409

[2] Intestinal Obstruction, p. 42.

[3] Transactions of the Pathological Society of London, vol. xli., p. 121.

[4] Ibid., vol. xxiv., p. 108.

[5] Cyclopedia of the Practice of Medicine, Ziemssen, vol. vii.

[6] Transactions of the Pathological Society of London, vol. xlviii., p. 83.

[7] Intestinal Obstruction, 1899, p. 263.

Medical Societies.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

Better Housing of Rural Populations.

A MEETING of this society was held on Jan. 11th, Dr. J. C. MCVAIL, the President, being in the chair.

Mr. C. E. PAGET, medical officer of health of the County Council of Northamptonshire, read a paper on the Better Housing of Rural Populations. The question of the housing of the labouring classes was, he said, everywhere closely bound up with economic considerations. They were at present confronted by a high degree of commercial prosperity in the towns and an unprecedented depression of agricultural industry, the consequences of which were seen in the flow of population into the towns, where the substitution of business premises for dwellings led to the crowding of the poor into tenements ill adapted for the purpose. The success of the erection of blocks of flats and the establishment of cheap trains connecting with suburban districts in providing a remedy depended on such complex conditions as not infrequently to create new evils. It might be thought that the depletion of the rural population to the minimum required for the culture of the land would facilitate the housing of the agricultural labourers, but the depreciation of cottage property led to such neglect of repairs as too often to necessitate abandonment or demolition. In the final report of the Royal Commission on Labour in 1894 Mr. Little classified the ownership of cottage property as (1) land-owners who provided cottages for all or some of the labourers working on their estates; (2) private owners letting the cottages at the best rents they could obtain; (3) lease-holders or life-owners; and (4) occupying owners. The first class were, as a rule, satisfactory in character though rarely sufficient in number. The second class were less satisfactory, and if the owner had not an independent source of income they were no better than those of the lease- or life-holder, which were the worst of all, except, perhaps, the few owned by the labourers themselves, and for the most

part erected by squatters on waste lands with insecure tenure. Dr. G. Wilson, the medical officer of health of Mid-Warwickshire, in a house-to-house survey some 25 years ago, reported that in many villages from 15 to 20 per cent. of the cottages had but one sleeping-room and 50 per cent. had only two, the worst being those which had drifted into the hands of impecunious owners. In the eastern and midland counties the villages were "open" or "close," the latter being the property of the land-owner on whose estates the tenants were permanently employed; but there were times when additional labour was required, and this led to the growth of "open" villages with a number of owners. The more accessible these villages were the more rapid was their growth and the worse, as a rule, were their sanitary conditions. The motives that prompted the creation of the "close" village were not always philanthropic or æsthetic, for prior to the passing of the Unions Chargeability Act in 1865 each parish had a direct interest in keeping down the number of resident labourers who in their old age would have to be maintained by the rates. This was easy when the whole belonged to a single owner, but where the land was in the hands of a number of small proprietors each sought to make a personal profit by the erection of cottages at the lowest possible cost for construction or maintenance, and Mr. Paget described the state of one such village in his district, in which 11 per cent. of the cottages were condemned as unfit for human habitation and 16 per cent. of the remainder were insanitary and overcrowded. A representation by the local authority, followed by an inquiry by the County Council and a recommendation for the adoption of Part III. of the Housing of the Working Classes Act, fell through at last from the reluctance alike of the parish and the rural district to bear the expense, though the necessity was admitted by all parties, while the impossibility of closing even the worst of the cottages was clear, for to do so would render the tenants homeless or aggravate the overcrowding of the rest. Coming, then, to the principles involved in the provision of houses for the labouring classes at the cost of the public, he believed that it was under certain circumstances justifiable, indeed necessary; it should not be done recklessly, but it should not be less easy in rural than in urban districts. The Housing Acts were not opposed to it when the need for *bonâ fide* agricultural labourers' cottages was palpable, and there was no probability of the need being met by private enterprise. On the other hand, the influence of the present system of outdoor relief in the maintenance of the worst class of dwellings should not be ignored, and while a local authority was acting rightly in providing cottages for the hard-working labourers who could not pay remunerative rents, they were not justified in fostering pauperism, nor should they, in his opinion, draw on public funds to a greater extent than would be required for the maintenance of the same poor under the Poor-law authority. He was pleased to observe that Section 63 of the Act of 1890, disqualifying for tenancy persons in receipt of relief other than medical, had not been repealed. The instance which he had quoted well illustrated the tedious procedure hitherto involved in the adoption of Part III. by rural authorities, and often, as in that case, with no result, although the need for it was admitted by all the authorities concerned. The Act of 1900 was intended to simplify the proceedings. He wished that it had done more in this direction, but the only evident advantages of the new procedure were (1) the repeal of Section 55 (especially the clause requiring the district council to wait until the next election before acting on the consent of the county council), and (2) the sixth section of the Act, by which if a parish council resolved that the rural district council had failed in its duty in this respect the county council, if satisfied after due inquiry as to the default, might assume the powers of the district council. He was, however, very doubtful as to any parish council taking such action, especially in the event of the cost having to be met by the parish as a contributory place. Another and most important question was whether, as a rule, the expenses of carrying out Part III. should be borne by the whole district or by the parish only. It appeared from subsection 2 of Section 55 of the Act of 1890 that the legislature was of opinion that a special case needed to be shown why the expense should not be borne by the rural district. With this view, the principle of which was involved in the Unions Chargeability Act of 1865, he was in entire agreement, the more so as the growth of insanitary "open" villages was the consequence of the selfish action of land-owners in the maintenance of "close" villages, the owners of which ought to bear their share in remedying the evils to the creation of which they had contributed. But, at the same time, there were circumstances under which he would restrict the burden to a contributory area, even more limited than the parish, as where a mining village had sprung up on its borders. Still, in most cases the parish itself was not wholly responsible, and he regretted the repeal of this subsection, since the principle of the former Act was upset by that of 1900, which seemed to give the county council or district councils no power to impose the cost of providing cottages on any area other than that for which the application was made or granted. The power of taking action hitherto confined to the district council was now shared by the parish council, the functions of the county council being still simply judicial. He was strongly of opinion that not only ought their consent to have the force of a confirmation but that they should enjoy, equally with the inferior councils, this and other powers under this matter, as they already did in the prevention of river pollution. They would then be in a position to make systematic and independent inquiries throughout their administrative areas, and to give to the work a thoroughness and uniformity which it could never acquire under the present haphazard methods.

Dr. G. REID, medical officer of health of the Stafford County Council, advocated greater powers for the county councils especially in compelling the district councils to act; the influence of the parish councils was *nil* or obstructive and their creation was a retrograde measure. The fact that the sanitary authorities were often practically the same as the boards of guardians was one cause of sanitary neglect in the rural districts, the inefficiency of the sanitary inspectors being another. He was in favour of house-building by local authorities, not that it would be generally adopted, but since it would stimulate land-owners.

Dr. J. S. TEW, medical officer of health of the West Kent combined districts, found that in many places the fear of the Act had stimulated local builders. In one village it had been adopted with such success that further building had been resolved on. In this instance it was the parish council that had taken the initiative, but Penshurst was an exceptional village.

Dr. E. C. SEATON, medical officer of health of the administrative county of Surrey, would remind the society that house sanitation was not the whole duty of county councils, who often had to incur great expenses in connexion with sewerage and water-supply, and they might, as his council had, properly refuse an application on the ground that the houses would be taken up by men from the towns.

Dr. A. NEWSHOLME, medical officer of health of Brighton, urged the equalisation of rates over wider areas. Even in Brighton the parishes of Hove and Preston were less heavily rated than was that of old Brighton. It might, he maintained, be just to build houses that would for some time be a burden on the rates, and if before demolishing condemned property the local authority erected suitable dwellings in other parts it would avoid the hardship of displacing the tenants and lessen the value and cost of acquiring the old tenements.

The PRESIDENT and Mr. PAGET made a few further remarks.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Cases of Disease of the Prefrontal Lobes.—Skiagraphy v. the Practitioner.—Exhibition of Cases, Pathological Specimens, &c.

A MEETING of this society was held on Jan. 11th, Dr. GORDON BLACK, the President, being in the chair.

Dr. T. CHURTON read a paper on Some Cases of Disease of the Prefrontal Lobes. He said that among the problems to be solved during the twentieth century there was not one surpassing in interest or in importance that of the functions of the prefrontal lobes—in interest because they were the specifically human or social lobes; in importance because they were probably always at fault in the ever-increasing number of cases of insanity; possibly also in the grosser, or even in all, forms of crime. And the consideration of their diseases was of present

practical use, for tumours had been successfully diagnosed in, and removed from, them by Durante and others. Dr. Churton proceeded to describe the anatomical limits of the lobes; the fibres which had been found degenerated after their removal; the views as to their function held by Wundt, who ascribed to them the faculty of apperception—that was, the power of selection of the ideas or mental images to be the subject of thought or attention at a given moment; and the contrary views of Lichen, who maintained that there were at least four association centres in the hemisphere and that the prefrontal lobe was merely one of them, the others being the insula, the greater part of the temporal lobe, and the posterior part of the parietal lobe. The results of removal of the lobes in animals were summarised and it was inferred from these and from cases of disease that the use or function of the lobes was briefly (1) to permit or to inhibit certain proposed acts, according to the memory of former results of such acts; and (2) to excite the lower centres of sense (or their "memory-cells") and motion in the absence of external stimuli, thus acting as an internal store of accumulated stimuli. Diseases of the lobes, besides congenital defects in the cells found in some criminals, were divided into irritation disorders and depression disorders. Excessive curiosity in a boy with chorea; cases of insanity in which the attention was fixed upon one idea; hypnotism in which it was fixed upon the auditory cells receiving the suggestion of the hypnotiser, to the exclusion of all other excitations, external or internal; hysteria; and simple (volitional) malingering were included in the first division, as illustrations of disorders characterised by depression of the activity of the prefrontal cells. Cases were briefly related of (1) simple automatism due to bilateral abscess in the prefrontal region; (2) a similar case, but without necropsy; (3) a similar case, but with changes in "reflex" conduct also—dementia; (4) curious acts and mis-timed humour, with sarcoma in the third right frontal gyrus; (5) whimsical conduct during life—gummata in the prefrontal lobes; the age of the patient was 14 years; (6) a man, aged 27 years; humorous conduct; anosmia in the right nostril; aneurysm of anterior communicating artery invading the right lobe; and (7) a man, aged 36 years, whose symptoms appeared in the following order: in June, 1899, he could not smell flowers; in February, 1900, he was sleepy, blundered at work, was forgetful, and was negligent about dress. In April he lost interest in home and family. He still saluted friends and in the usual manner. In June urine and fæces were passed unconsciously and unnoticed, although he reacted normally, though rather slowly, to ordinary stimuli. In July (in hospital) he showed no curiosity or interest in anything; his replies were normal and gruffly humorous. His memory of events in his illness was fairly good but was said to be somewhat distorted. He died in September. A psammo-sarcoma as large as an orange had grown from the falx cerebri, compressing both prefrontal lobes, the left more than the right, and had passed beneath the corpus callosum; pression upon the left corpus striatum. This specimen was shown. It appeared that it was not the absence of so-called intelligent replies and other actions in response to excitations from without but the absence of spontaneity—i.e., of excitation from within—which was the distinctive sign of prefrontal paralysis.

Mr. W. H. BROWN read a paper on Skiagraphy *v.* the Practitioner, pointing out the danger to the practitioner which lurked in the discovery of the x rays and its indiscriminate use by the laity. The evils to the patient of over-exposure had already brought the "unknown quantity" x into the law courts; another person often injured was the medical attendant in cases of fracture. The public had quickly seized on so attractive a check on their medical man's work, and the patient and his friends soon tried him before the "shadow" judge. The village *savants*, in solemn conclave at the inn, guided by the light of the x ray, pronounced verdict on their medical attendant and in one case almost ruined him. Now it often happened that a limb, though not skiagrammatically perfect, was yet functionally so, but the public, as in other matters, leant rather towards what was pleasing to the eye than simply useful, and, comparing with the skiagram of the corresponding bones, judged accordingly, so that the confidence in, and perhaps practice of, the medical man was destroyed, although his treatment had produced a sound and useful limb, a result which a few years ago he would not have feared to have had proclaimed from the housetops, but which he now sought to hide under a bushel, for the evils which he did lived after him, in fact, until at length interred with his patients' bones. Continuing, Mr. Brown said that these remarks naturally suggested wiring in all cases, but he himself did not think that the time had quite yet arrived when they could with perfect safety advise an operation in every case of simple fracture, and this being so it would follow that in some cases the skiagram would reveal an asymmetrical union of bone on account of which the medical man might be charged with malpractice; it would, therefore, be wise for him in all cases to protect himself by dividing the responsibility with a neighbouring practitioner, and if possible by having the limb skiagraphed before and after "setting." Cases were then referred to when the x rays had given rise to quarrels between patients and their medical men, and at the end a large number of fractures were put on the screen which had resulted in useful limbs to their owners, though the skiagram showed no trace of beauty of outward form or grace. The x rays were good servants but bad masters; of the limits to their future development they could only speculate. With Hamlet they might say:—

> "Angels and ministers of grace defend us!
> Be thou spirit of health or goblin damned;
> Bring with thee airs from Heaven or blasts from hell;
> Be thy intentions wicked or charitable?
> Thou comest in such a questionable shape,
> Oh, answer me!
> Let me not burst in ignorance."

The following cases, pathological specimens, &c., were exhibited:—

Mr. W. R. BATES (Ilkley): A case of recovery from Tuberculous Meningitis. (The patient was shown.)

Mr. P. J. CAMMIDGE: A specimen of Blue Urine.

Mr. H. LITTLEWOOD: 1. Specimens from two cases of Perforated Gastric Ulcer. 2. Carcinoma of the Large Intestine: (*a*) removed from the splenic flexure; and (*b*) from the sigmoid, with end-to-end union. 3. Fibroid of the Cervix removed by abdominal pan-hysterectomy. 4. Papilloma removed from a Female Bladder.

Dr. A. G. BARES: (1) A case of Recovery from (?) Posterior Basal Meningitis; and (2) a Heart from a fatal case of Chorea.

Mr. B. G. A. MOYNIHAN: (1) Partial Thyroidectomy in a case of Exophthalmic Goitre (with Dr. GIRLING); (2) a specimen from a case of Anthrax; and (3) direction showing an Arterio-venous Aneurysm, resulting from a bullet-wound.

Dr. T. WARDROP GRIFFITH: A specimen of Tricuspid Stenosis.

Mr. W. H. BROWN: (1) A case of Intracranial Aneurysm following Fractured Base of the Skull; (2) Epithelioma of the Scalp removed from a patient, aged 78 years (the patient was shown); (3) a case of Fæcal Fistula following Suppurative Peritonitis; and (4) Lumbar Colotomy done six years ago for tuberculous proctitis.

Mr. MAYO ROBSON: A specimen of Malignant Disease of the Stomach (colloid carcinoma) excised. (The patient was shown.)

Dr. J. B. HELLIER: (1) Uterus with Myomata, Pyosalpinges and Ovarian Cyst removed by Abdominal Hysterectomy; and (2) Unusual case of Blighted Ovum.

Dr. E. F. TREVELYAN: (1) A case of Wasting of the Muscles of both Hands in a man, aged 28 years; and (2) a case of Choreiform Movements of Long Duration in a man, aged 40 years.

LIVERPOOL MEDICAL INSTITUTION.

Paralysis of Doubtful Diagnosis.—Exhibition of Patients and Specimens.—Uræmic Convulsions treated by Bleeding.

THE seventh ordinary meeting of this society was held on Jan. 17th, Mr. EDGAR BROWNE, the President, being in the chair.

Dr. T. GERALD GARRY read notes of a case of Paralysis in a young girl, aged 21 years, which had been diagnosed as acute anterior poliomyelitis but which he considered to be acute lead poisoning with resulting lead paralysis. The initial attack occurred 12 months previously with fever, abdominal colic, headache, severe pains in the upper limbs, and constipation. At the end of a week loss of power followed in both the upper limbs, the right arm recovered in time, but the left arm remained paralysed. The deltoid, the infra-spinatus, the triceps, the latissimus dorsi, the muscles

at the back of the right forearm, and the muscles of the thumb and index fingers in both hands were atrophied. Contractility to the faradaic and continuous currents was absent in the wasted muscles, but reaction of degeneration existed in the biceps, the supinator longus, and the flexor carpiradialis. Treatment by continuous and sinusoidal currents extended over a period of 18 months restored complete power to the left arm and increased power to the right arm. Dr. Garry commented upon the discovery of copper in solution in the distilled water in which the negative electrode was placed after use. Devergie in a case of lead arthralgy analysed the muscles and discovered a considerable quantity of lead. In view of this fact the discovery of copper in this case might possibly prove of diagnostic interest.—Dr. T. R. BRADSHAW did not think that the diagnosis of lead-poisoning was completely established. There was no evidence to show how lead could have got into the system, since although tinned fruits contained an appreciable amount of tin it was improbable that they would contain lead. Acute poliomyelitis was not excluded by the almost complete recovery, which was often out of all proportion to the extent of the initial paralysis, only a small group of muscles being permanently atrophied.

Mr. R. W. MURRAY showed two patients upon whom he had operated for Psoas Abscess due to Spinal Disease. In one case the operation was done when the child was aged four and a half years. Two incisions were made, lumbar and iliac, the abscess cavity was cleansed, and the wound was closed without drainage. It was now six years since this was done and the child was in good health, and there was no sign of recurrence of the abscess. In the other case the abscess was a large one, extending from the lumbar region to below Poupart's ligament. Three incisions were made—lumbar, iliac, and femoral—and the abscess cavity was cleansed and closed without drainage. The child was six years old at the time and now, seven years later, she was in good health and there was no sign of the abscess reforming.—Mr. F. C. LARKIN had practised this method of treatment since the publication of Mr. Barker's paper on the subject. The results were usually excellent in children.

Mr. RUSHTON PARKER showed a Warty Polypus of the Rectum removed from a woman, aged 53 years, from the front wall of the gut. The symptoms of hæmorrhage had existed for four years with eventual protrusion. The anus was dilated and the growth was easily reached and held by Doyen's clamp, cut off, and the stump closely sewn by many points of sulphurised catgut, closely and deeply placed and tied at each point, but with continuity of thread. No hæmorrhage resulted and the patient quickly recovered.—Mr. LARKIN mentioned a case which resembled the one which Mr. Parker had described.

Mr. RUSHTON PARKER also showed a patient on whom he had operated for Perforated Gastric Ulcer in less than three hours after the event. The patient was a female, aged 23 years, who had been under treatment off and on for symptoms of gastric ulcer for two years. On Nov. 27th, 1900, less than an hour after a meal, consisting of bread-and-butter, tea, and pancakes, she was seized with violent pain in the region of the stomach, pallor, coldness, and some collapse. She was seen at once by her medical attendant who, suspecting perforation, sent her into hospital with a request for immediate attention. Operation was undertaken and was completed in less than four hours after the onset of the urgent symptoms. On opening the abdomen, after prolonged search, in which the gastro-colic omentum was freely opened, a small perforation was found on the posterior wall of the stomach close to the smaller curvature near its middle. The edges were cut away and the opening was strongly sewn by a continuous suture through the mucosa and a double set through the peritoneal edges, one inclosing the other. A tube was put in for three days as a precaution. The patient made a good recovery, the wound healing without untoward incident.

Mr. RUSHTON PARKER also showed a patient upon whom he had operated by excising a Chronic Gastric Ulcer of which symptoms had existed for seven years and in which perforation had reached the inside of the peritoneal coat. The patient was a woman, aged 33 years, who had been disabled from work by pain in the back, which was constant except when she was lying down and taking only liquid diet. On Nov. 12th, 1900, exploration of the stomach revealed an inflammatory hardness in the small curvature. On opening the stomach there was felt a punched-out ulcer in the middle of the induration perforating the two inner coats. This was inspected through the opening and then excised, after which both openings were strongly closed with continuous sutures through the mucous and outer coats respectively. The abdomen was closed without a tube. The patient did well and the wound healed soundly, the greater part by first intention. A stitch abscess appeared at the end of a fortnight but it healed in a few days. The recovery was slow but satisfactory. She ate fish after a fortnight but did not tolerate meat without pain till two months after the operation.

Dr. T. R. GLYNN related a case of Uræmic Convulsions treated successfully by bleeding and saline transfusion. The patient, a man, aged 31 years, entered the Royal Infirmary with acute nephritis apparently of 10 days' duration and probably caused by alcoholism and a chill; the urine was scanty, of high specific gravity, and very albuminous but free from blood; the pulse was tense and the heart was enlarged. In spite of the administration of purgatives and diaphoretics, including the hypodermic injection of pilocarpine and the restriction of food to diluted milk, uræmic symptoms developed four days after his admission; one fit followed another, with coma, stertor, cyanosis, and contracted pupils. This condition having lasted several hours two pints of blood were removed and one pint of saline solution was injected into the connective tissue in the axilla and shortly afterwards half a pint into the rectum. The convulsions ceased and consciousness returned. He perspired freely for the first time, and on the next day he passed 46 ounces of urine, 20 ounces having been the maximum in 24 hours previously. During each of the following 10 days he passed on an average 70 ounces of urine in 24 hours; the albumin disappeared, the arterial tension decreased, the apex of the heart returned to its normal site, and he left the hospital in about a month apparently quite well. Dr. Glynn referred to other cases of uræmic convulsions which he had treated by bleeding but he held that the application of blood-letting in such cases was necessarily limited.—Dr. WILLIAM CARTER agreed as to the utility of bleeding in such cases as those mentioned by Dr. Glynn, and he instanced cases, one of which he had received into hospital nine years after a large venesection which had cut short uræmic convulsions and apparently saved life. In cases where bleeding was contra-indicated much good might often be done by a very free exhibition of oxygen. In yet others, where the atropine-like element of the complex urinary poison prevailed, the convulsions were promptly relieved by the hypodermic injection of morphia. Cases like those mentioned by Dr. Glynn were great facts, explain them how they might, and should encourage them to act under the guidance of a rational empiricism instead of fettering themselves with narrow and exclusive theories.—Dr. J. E. GEMMELL referred to those cases of uræmic convulsions associated with the puerperium and instanced several cases occurring during the last two years which he had treated by injections of saline solution into the rectum, in which he had seen marked improvement and return to consciousness, even before delivery, and in those cases occurring after delivery the injection of saline solution was also attended with good results.—Dr. N. RAW, Dr. A. S. F. GRÜNBAUM, Dr. E. T. DAVIES, Dr. H. ARMSTRONG, and Mr. J. WALKER also spoke, and Dr. GLYNN replied.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Patients.—Demonstration of Microscopical Preparations and Apparatus.—The Edinburgh Hospital in South Africa.

THE fourth meeting of this society was held on Jan. 16th, Mr. A. G. MILLER, the President, being in the chair.

Mr. F. M CAIRD exhibited four patients on whom he had performed Gastro-Enterostomy.

Dr. CHALMERS WATSON exhibited a large number of Microscopical Preparations illustrating the Comparative Pathology of Ataxia.

Dr. DAWSON TURNER demonstrated various forms of Interruptor for use with the Roentgen Apparatus.

Dr. FRANCIS D. BOYD read a paper on the Edinburgh Hospital in South Africa, with Notes on the Work, and showed a large number of excellent lantern slides illustrating the building of the Edinburgh Hospital and its fittings when complete. During the period under observation between 500 and 600 patients were admitted to the hospital

at Norval's Pont and 1800 out-patients were prescribed for. Enteric fever was the chief medical disease which was dealt with—in all over 150 cases were admitted. The onset of the disease was almost in every case identical—pain in the back of the head and in the neck and limbs; the bowels were, as a rule, constipated, diarrhœa being the exception. One marked characteristic was the extreme foulness of the mouth accompanied by inflammation of the fauces. In many cases this might be due to neglect, but it was present also in those cases which occurred amongst the hospital staff. Of the so-called pharyngo-typhoid (ulceration of the soft palate) Dr. Boyd saw only one case. Melæna occurred in two cases only; in one the attack was slight, while in the other it proved fatal in a few hours. Considering the frequency of dust-storms it was surprising to find that few of the cases exhibited affections of the upper respiratory tract. In one there was pharyngitis with aphonia, and in one œdema of the glottis which necessitated tracheotomy. Hypostatic congestion of the lungs was found in 15 per cent. of the cases. No case of true croupous pneumonia occurred as a complication and there was no case in which the pneumococcus was present in the sputum. Infarction of the lung with hæmoptysis was present in two cases and pleurisy with effusion in four cases. Hiccough was in one case a very serious and grave complication, persisting for nine days. In three cases old-standing cardiac lesions were discovered on admission. Of these cases two patients died, showing how serious a handicap such affections are in cases of enteric fever. Thrombosis was a frequent complication, occurring in 6 per cent. of the cases. As a rule it came on late in the disease, in the earliest case not showing itself until the twenty-sixth day. In these there was generally a rise of temperature with pain along the course of the vein—usually that of the leg—and œdema of the limb. In one case thrombosis of the branches of the middle cerebral artery gave rise to paralysis with aphasia. Dr. Boyd could not explain the reason of the frequency of thrombosis as a complication. It was a rare complication in America, though frequent enough in Great Britain. He did not think that it was due to the wearing of putties. Nephritis and cystitis were met with rarely and only occurred in patients who had previously had a damaged urinary tract. Relapse occurred in 5·3 per cent. of the cases, a low proportion when dealing with male patients only. There was no mortality from relapse. These relapses occurred although there was no error in feeding. Dr. Boyd thought that it was probable that re-infection took place from the mesenteric glands on subsidence of the reaction in the glands, the poison being set free as the lymph stream was re-established. The fever might be divided into three types: (1) the mild or abortive; (2) the grave; and (3) the apyrexial. Numerous cases of the mild form were seen, headache, malaise, and gastro-intestinal disturbance with mild fever lasting from five to 10 days being the symptoms observed. Of the grave type there were two distinct classes. In one the gastro-intestinal symptoms predominated, the tongue being very foul, the abdomen much distended, and nourishment being not well taken and feebly assimilated. In the fatal cases very extensive ulceration of the small intestine was found. In the second variety, which might be described as toxæmic, the rash was marked and the temperature was high while nervous symptoms predominated, the abdominal symptoms being subsidiary. Only one case of the apyrexial type was noted—in one of the members of the staff who had been inoculated. The temperature in this case only once rose to 99·4° F., being as a rule subnormal. The condition appeared to be a mild attack of enteric fever modified by inoculation. Widal's reaction test was employed in all doubtful cases and in most cases even when the diagnosis was certain. The diluting medium was either bouillon or normal saline in a dilution of 1 in 30. From three to six observations were always going on, so that a check was thus established. The culture used was from 24 to 36 hours old. In discussing the diagnosis of these cases Dr. Boyd asked, "Is there any other known condition except enteric fever under which they can be classified?" In some of their features they closely resembled Malta fever, agreeing in the mode of onset—severe headache, gastro-intestinal disturbance with splenic enlargement—but differing in that none of the cases showed the characteristic relapse. In six there was diarrhœa which was uncommon in Malta fever; in none were there fleeting articular pains so characteristic of Malta fever. Dr. Boyd did not think that these were really cases of Malta fever, but was inclined to regard them as cases of enteric fever modified possibly. In concluding thus he quite recognised the gravity of the position. If the agglutination reaction were absent in 6 per cent. of the cases in this epidemic did it not rather shake their faith in the value of this test as a diagnostic sign? This he feared was the conclusion to which he had unwillingly come. Was there, he asked, such a disease as simple continued fever? Most army medical men who had had experience assured him that there was a definite febricula which affected white people in hot climates. Civil surgeons were, on the other hand, inclined to regard all cases of simple continued fever as undiagnosed enteric fever. On analysing the 38 cases admitted to the Edinburgh Hospital in 10 no definite diagnosis could be arrived at, the patients being seedy and run down and showing no fever while in hospital, and Widal's test was negative. Dr. Boyd thought it was very probable that these were merely convalescent cases from influenza, which was a common disease in South Africa. Of the remaining 28 cases seven were undoubtedly those of mild enteric fever, Widal's test being positive in each. Four cases may have been abortive enteric fever, Widal's test being positive, but these patients had been inoculated against enteric fever, so no diagnostic evidence could be obtained from Widal's reaction. In six cases there was a history of former repeated attacks of malaria. Two other cases were due to catarrhal dysentery and the rest were clearly due to well-defined diseases. From this examination it must be concluded that simple continued fever while useful for a preliminary diagnosis could scarcely claim to be a distinct disease. As a rule, if the case were watched a more definite diagnosis could be made out. If 18 per cent. of such cases were due to enteric fever it was desirable to have more definite diagnosis, or else sanitary measures should be taken in all febrile conditions where enteric fever could not be definitely excluded. To get a satisfactory answer as to the actual value of preventive inoculation the statistics of the whole campaign would first of all have to be published. Of the staff of the Edinburgh Hospital 58 were inoculated, 27 being done once and 31 twice. In seven the inoculation produced no appreciable effect; in a smaller number there was merely slight local reaction. In the large majority, however, there was marked local and general reaction—malaise, faintness, and a rise of temperature of from 2° to 4°. Of those members of the staff who were inoculated nine developed enteric fever, one case proving fatal on the twenty-fifth day from cardiac failure. Three were very severe attacks with persistent high fever and marked abdominal or nervous symptoms; in four cases the attack was pronounced, and in one it was apyrexial. Relapse occurred in one case, complications in two (viz., pleurisy with effusion), and in one thrombosis of the veins of the legs. In the fatal case inoculation had been practised twice, as it had also in four of the milder cases. Of the soldiers admitted into hospital inoculation had been performed once in every case. 18 cases of enteric fever were observed; in these two were very severe, five were severe, and the rest were apparently modified attacks. Experience thus seemed to show that while inoculation appeared to modify the disease very severe attacks did occur in those cases in which the patient had been inoculated. He could not, however, conclude from this that inoculation had been valueless, for the attack might have been still more severe. It was very important to note that in the case of three of the members of the staff who developed enteric fever agglutinative power was absent during the early days of the fever, therefore it might with justice be concluded that it was not present at the time of infection. The effect of inoculation on the mortality could only be arrived at after years of experience and from the results of large numbers of cases. Dr. Boyd thought that the outlook for inoculation was hopeful. Could it be considered entirely free from harmful results? He thought that it could not. He had seen at least one case in which inoculation had markedly lowered the health of the individual, and some months later the patient developed enteric fever. The mortality of the cases in the hospital was 7·1 per cent. Perforation occurred in three cases; the greatest number succumbed to general exhaustion. Dysentery was a fairly common disease. Some 50 cases were treated in hospital. A number were of the catarrhal variety and about half of them were of the more severe ulcerative type. The amœba coli was rarely observed. This was the same as was

observed in other localities in South Africa. As regarded treatment, in mild or catarrhal cases sulphate of magnesia or castor oil and chlorodyne were the best remedies. In the severe or ulcerative cases the question of treatment was more difficult, but certainly magnesia sulphate should not be used. In some cases ipecacuanha *with* not *without* emetin seemed to act as a charm. In one or two cases no drug seemed to have any effect and the condition only improved when all drugs were stopped by the mouth and when morphia was given hypodermically. Dr. Boyd, in conclusion, alluded to the condition known as "soldier's heart," a large number of cases of which came under observation. It was found in men who had been engaged in arduous marching for months on end. There was no history of previous valvular defect and no arterio-sclerosis or kidney lesion. Shortness of breath and general weakness were complained of. The area of cardiac dulness was increased laterally and especially towards the right side. A systolic murmur was present at the tricuspid area, a venous pulsation in the neck, and no mitral lesion. These were evidently cases of dilatation of the right side of the heart from over-strain.

EDINBURGH OBSTETRICAL SOCIETY.

A Scheme of Fœtal Growth.—Intra-peritoneal Rupture of Ovarian Cysts.—Uterine Retraction.

A MEETING of this society was held on Jan. 9th, Dr. R. MILNE MURRAY, the President, occupying the chair.

The following motion, proposed by Professor A. R. SIMPSON and seconded by Dr. W. G. AITCHISON ROBERTSON, was passed *nem. con.*:—

That women shall now be admitted to the Fellowship of the society.

Dr. J. HAIG FERGUSON showed a Fibroid Uterus removed by Abdominal Hysterectomy.

Dr. J. W. BALLANTYNE described a Scheme (with diagrams) of Fœtal Growth, giving the averages of a large number of cases. After pointing out the rate of growth he gave the following table indicating the fœtal weight at the different months:—

Months	1½	2	3	4	5	6	7	8	9	10
Weight in ounces	½	½	1	2	8	23½	41¼	56	88	120

The figures showed a great increase in weight between the fourth and fifth months, when the fœtus quadrupled its weight. In the succeeding month it also grew very rapidly, nearly trebling its weight. After that its growth was not so rapid. The averages for the placenta were as follows:—

Months	3	4	5	6	7	8	9	10
Weight in ounces	¾	1⅝	6½	9$\frac{3}{10}$	13$\frac{1}{10}$	15½	16¼	16$\frac{8}{10}$

Here the placenta markedly increased also between the fourth and fifth months, quadrupling its weight, as did the fœtus. During the next month it only added half to its weight. During the last three months it was practically stationary, so that during the last three months, at least, the placenta must mainly be a transmitter of nourishment to the increasing fœtus.

Dr. F. W. N. HAULTAIN read a paper on Intra-peritoneal Rupture of Ovarian Cysts, with special reference to operative treatment. After giving details of six cases he remarked that in the majority of cases rupture was apparently unassociated with discomfort and it was therefore only in those cases where the cysts had been of sufficient size to have attracted attention that any knowledge of such occurrences could be elicited. The absence of symptoms was doubtless due to the innocuous contents of the cyst and to their slow escape, a sudden gush being prevented by intra-abdominal pressure, the peritoneal cavity being merely potential. The largest proportion of recorded cases were those in which severe and dangerous symptoms supervened. Palm, in his collected statistics of 25 cases, recorded 18 deaths—three from collapse, six from acute peritonitis, three from chronic peritonitis, and six from protracted fever. Nepben, in 155 cases, showed 65 to have terminated fatally. In these instances the contents of the cysts must have been intensely irritating and in many cases probably they were septic; in a certain proportion death was accounted for by hæmorrhage. The causes of rupture were numerous, such as violence, morbid processes in the cyst wall, the result of thrombi, and intra-cystic hæmorrhage. Nutritive disturbances of the wall, the result of torsion of the pedicle, were a further frequent cause. Perhaps the commonest variety of cyst to rupture spontaneously was that with gelatinous contents, the cyst wall becoming secondarily softened. The gelatinous contents were, as a rule, more irritative, but at the same time they were but slowly absorbable by the peritoneum and might continue to distend the abdomen. These were more often found to be ruptured on opening the abdomen, as when the contents of the cyst were more fluid they were readily absorbed. In the latter case the cyst might become permanently obliterated. This occurred most frequently in unilocular broad ligament cysts, where the fluid was practically normal saline solution and was extremely rapidly absorbed, giving rise to temporary polyuria. In other cases the tumour re-distended or secondary cysts took on active growth. This seemed to be of comparatively frequent occurrence, as cicatrices were often present in the cyst walls of tumours. The contents of the cyst, though absorbable, might be irritative and might cause peritonitis with adhesions so widespread as to prove an almost insuperable barrier to its removal. Previous tapping of the tumour resulted in a similar condition. In a certain group of cases, practically lacerated cysts with gelatinous contents, no absorption took place; the opening remained patent and active secretion continued. The abdomen steadily distended with intra-peritoneal fluid. The treatment of ruptured cysts consisted in removal of the cysts as soon as possible. A certain proportion of cases after rupture seemed never to re-distend and a spontaneous cure resulted, but as delay might allow strong and widespread adhesions to form early operation was advisable. On operating in such a case, the surgeon was apt in entering the peritoneal cavity to be misled by the gush of ovarian contents and to assume that the cyst wall had been incised. An attempt would then be made to separate the cyst wall from suspected adhesion to the abdominal parietes. This resulted in stripping off the parietal peritoneum. In these cases it was well to enlarge the opening and to introduce the hand into the cavity before attempting the separation of the cyst wall. In cases with acute symptoms the diagnosis might be extremely doubtful unless there was a distinct history of a pre-existing abdominal tumour. The symptoms might be simulated by perforation of the intestine or other acute peritoneal affections. The operation could then at first be only exploratory.—Professor A. R. SIMPSON remarked that in almost all cases where the tumour disappeared it was par-ovarian in character. The most interesting were the cysts with gelatinous contents, where this material, spreading over the peritoneum and adhering to the different viscera, might become vascularised. These cases had a serious prognosis. In all ruptured cysts recrudescence almost always occurred. In some cases after rupture of the cyst peptones had been found in the urine.—Dr. D. BERRY HART, Dr. J. FOULIS, and Dr. HAIG FERGUSON also discussed the paper.

Dr. BERRY HART read a paper on Uterine Retraction with special reference to the Mechanism and Management of the Third Stage of Labour. He pointed out the discrepancies between the usual views as to the mechanism of the separation of the placenta during the third stage and the practice adopted in the management of this stage. He defined retraction as muscular action (contraction) where a part of the thickening of the muscle was retained after the contraction proper had ceased. In sections of the parturient uterus it was remarkable that the uterine wall at the placental site was thinner than elsewhere. The uterus removed by Porro's operation showed a uniformly retracted and thick wall, while uteri with the placenta still attached, obtained by post-mortem examination and thus intact uteri, had a thin wall on section at the placental site, thinner than the uterine wall elsewhere above the retraction ring. He believed that the state of the uterus after Porro's operation could not be accepted as evidence of the amount of retraction in a normal third stage, but was an over-retracted uterus owing to the longitudinal and transverse incisions necessary in the operation. Dr. Hart next drew attention to the elastic recoil of the uterus following a pain and pointed out the importance of the elastic tissue in bringing this about. He finally emphasised the great importance of the fact that the placenta was separated during the third stage by a disproportion between the placental area and the placental site, and that it followed from this that as the disproportion occurred in the elastic recoil (that is, after the pain was over) the Crédé method was a source of danger if practised during the early period of this stage before the placenta was separated.—Dr. HAULTAIN, Dr. JAMES RITCHIE, Dr. FOULIS, Dr. BALLANTYNE, Dr W. FORDYCE, Dr. H. O. NICHOLSON, and Dr. MILNE MURRAY joined in the discussion of the paper.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Delivery by Cæsarean Section and afterwards by Forceps.—Placenta Prævia.—Epithelioma of the Cervix Uteri.

A MEETING of this section was held on Dec. 21st, 1900, Dr. A. V. MACAN, the President, being in the chair.

Dr. F. W. KIDD read notes of a case of Application of Forceps where Cæsarean Section had previously been performed. —Dr. R. D. PUREFOY said that one of the many interesting points raised by that important case was the light which it helped to throw upon the behaviour of fibroids in cases in which the patient became pregnant.—Dr. SMITH said that he recollected a pregnant woman who came to him with a large tumour occupying the pelvis. On examining her under ether he could not push the tumour out of the pelvis and he thought that the woman could never deliver herself; but in fact she did deliver herself without any difficulty.—Dr. MACAN said that he thought they should either suppose some great change had taken place or else that in the second labour, for some reason, the tumour had been drawn upwards out of the pelvis.

Dr. R. L. HEARD described a case of Placenta Prævia. The patient was 31 years of age, was in her fifth pregnancy, and was admitted into the Rathdown Infirmary on Nov. 3rd, being then collapsed and suffering from acute septicæmia. Hæmorrhage had commenced 14 days previously. The fœtal heart-sounds being absent the child was considered to be dead. Dr. Heard found the whole vagina in a state of great œdema. It was with difficulty that he could reach the os with his finger, and when he did so he was unable to ascertain anything definite, beyond feeling the placenta, the os being of the size of a shilling. Ether was administered, and the cervix was dilated with a Barnes's bag. He then separated the placenta with his finger round the lower zone. It had a central insertion and was beginning to decompose. Going through it he found that the breech was presenting, the child being in the right dorso-anterior position; he then delivered by bringing down the legs. The fœtus was very slightly macerated. The placenta came away during the delivery of the body. The uterus was washed out with creolin solution and one-hundredth of a grain of citrate of ergotin was given hypodermically. Shortly after Dr. Heard had left the patient she succumbed to a syncopal attack, in spite of hypodermic injections of strychnine and ether by Dr. Pim, the application of amyl nitrite to the nostrils, a boiling hot sponge to the cardiac region, artificial respiration, and partial inversion. One of the chief points of interest in the case was, Dr. Heard thought, the œdema of the vagina. He had never seen an instance of the kind before.

The Secretary read a paper by Dr. R. J. KINKEAD on Epithelioma of the Cervix Uteri during Pregnancy.—Dr. MACAN said that he thought it was the first case of the kind which had been performed in Ireland—viz., primary removal of the carcinoma and the hysterectomy after labour. Dr. Kinkead deserved the greatest credit for having brought it to a successful termination.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.—A meeting of this society was held on Jan. 10th, Mr. J. Rutherford Morison, the President, being in the chair. —Dr. I. G. Modlin described a case of Partial Paralysis of the Right Arm occurring in a man, aged 54 years, who dislocated his right shoulder three months ago. The dislocation was reduced under chloroform by means of the heel in the axilla. Three weeks after the accident the patient consulted a local bonesetter who kept the arm bandaged for three weeks. There were now impairment of sensation, almost complete paralysis, and marked muscular wasting, especially in the distribution of the ulnar, musculo-spiral and median nerves, indicating injury to all the cords of the brachial plexus, caused more probably by the pressure of the dislocated head of the humerus than by the method of reduction.—Some discussion followed during which it was pointed out that such cases were not uncommon. The patients usually recovered completely, but they should be warned that complete recovery would be slow, taking probably from one and a half to two years.—Dr. Modlin also described a case of Focal Epilepsy occurring in a man, aged 37 years, who gave an indefinite history of injury while drunk; he worked two days later and on the third day became delirious and exhibited pyrexia and stupor; on the fifth day he had his first fit. The fits recurred every five minutes and later every two minutes, commencing in the left side of the face, rapidly extending to the left arm and leg and subsequently becoming diffuse. A slight contusion was evident over the right parietal eminence. The patient was trephined over the right Rolandic area. The membranes bulged but did not pulsate. The dura mater was incised and a large clot was found extending as far as could be felt; as much of the clot was removed as possible, the patient having two slight fits afterwards and from this point making a complete and uninterrupted recovery.—Dr. Modlin also described a case of Ovarian Cyst complicating Pregnancy at full term. The patient was 21 years of age and when first seen, three weeks from term, was suffering from incontinence of urine and such extreme enlargement of the abdomen as to render her unable to move out of bed or to turn over. The abdomen, hugely distended, was dull on percussion up to the ensiform cartilage and was resonant in the extreme flanks, fluctuation being readily elicited. Per vaginam the uterus appeared to be pushed to the left by a large cystic tumour; through the dilated os the fœtal head could be felt. It was decided to wait and in due time, pains having commenced, delivery was expedited by forceps under anæsthesia. Eight days later, the abdomen having been rapidly increasing in size and the temperature having risen to 102° F., laparotomy was performed and a large suppurating ovarian cyst was removed by the usual method. Recovery was complete in a fortnight.—Dr. R. A. Bolam showed a case of Acromegaly occurring in a man, aged 35 years, who presented the typical enlargement of features and extremities usual in this condition. He complained of extreme headache and prostration. Although the optic discs exhibited no pallor his perimetric chart showed a decided contraction of the field of vision.—Dr. H. B. Angus described a case of Hæmatemesis from Gastric Ulcer treated by Surgical Ligature. A girl, aged 22 years, was admitted into hospital in a condition of extreme collapse from hæmatemesis which was still continuing. Having had previous experience of two cases of fatal hæmorrhage from gastric ulcer in which post-mortem examination had revealed the bleeding point to have been from a large vessel impossible of treatment by medical means he had determined upon gastrotomy and ligature in this case. The method which he had adopted was the passage of a purse-string suture around the ulcer. From the operation the patient had recovered, having no further hæmorrhage, but 10 days later she developed thrombosis and phlebitis of both femoral veins; this condition he ascribed to her extremely weak state, being unable to trace any association between it and the operation.—Dr. A. M. Martin brought forward six patients who had been operated on for the removal of Loose Semilunar Cartilage, the periods since operation varying from six months to three weeks. In all of them the cartilage at fault had been the internal. All the patients were miners, whose work, entailing flexion of the knee and rotatory movement, rendered them peculiarly liable to the accident. In five of the cases the cartilage was completely detached circumferentially, the extremities remaining fixed; in one case a portion of the inner rim was partially separated. The portion of cartilage detached was in all cases removed. The patients now exhibited perfect and useful joints and were rid of their distressing symptoms. — Dr. James Drummond read a paper on the Essentials in the Management of a Normal Case of Labour. After defining normal labour he discussed the subject under the following headings: the incidence of puerperal sepsis; occasional auto-infection; other sources of infection; the value of surgically cleansing the patient, the attendants, and the instruments; and the avoidance of frequent examinations, of ante-partum douching unless specially indicated, and of hasty instrumentation.—An interesting discussion followed in which Dr. Calthrop, Dr. Adamson, Dr. S. S. Whillis, Dr. Davis, Dr. Modlin, and Dr. J. W. Smith took part.—Dr. H. P. Bennett and Dr. A. S. Percival exhibited specimens o Glioma and Pseudo-glioma of the Retina. — Dr. Beattie exhibited (1) a Multiform Aneurysm of the Descending Thoracic Aorta containing a laminated clot of the size of a cocoa-nut; and (2) a Small Sacculated Aneurysm springing from the posterior surface of the transverse arch which had burst into the trachea.

ULSTER MEDICAL SOCIETY.—A meeting of this society was held on Jan. 10th, Professor W. H. Thompson, the President, being in the chair.—Dr. W. Calwell showed a young man with marked Unilateral Contraction of the Chest due to Fibrosis of the Lung.—Dr. A. Fullerton showed a child from which he had removed a Congenital Sacculated Cyst of the Neck which contained blood and which subsequent examination proved to be a form of dilated lymphatics or lymphangiectasis.—Dr. John McCaw exhibited an infant who had been successfully treated by antitetanic serum for Tetanus Neonatorum.—The following specimens were shown: Dr. J. S. Darling (Lurgan): 1. Recent Extracapsular Fracture of the Femur. 2. Sarcoma of the Root of the Lung which during life simulated an aneurysm. It was a round-celled sarcoma and originating in the glands took the form of pigmented gland tissue. 3. Aneurysm of the Right Corner of the Arch of the Aorta which ruptured externally. It was taken from a soldier who had a specific history and suddenly ruptured externally one night after a bout of drinking. 4. Aneurysm of the Descending Aorta which caused death by rupturing into a bronchus. It was taken from the body of an old woman who died suddenly after coughing up a quantity of blood and in whom the cause of death was obscure, but was shown to depend on an atheromatous ulcer of the aorta protruding into the lung.—Dr. Calwell: 1. Aneurysm of the Arch of the Aorta which ruptured into the posterior mediastinum. 2. A Stomach with a small Gastric Ulcer which caused death by severe hæmorrhage.—Dr. A. B. Mitchell: Tuberculous Testicle.—Dr. S. English: Anencephalic Fœtus.—Dr. J. Lorrain Smith demonstrated the pathological features of many of the specimens exhibited.—Dr. Mitchell showed radiograms of (1) a Coin in the Œsophagus of a Child; (2) Fractured Olecranon; and (3) a rare Fracture of the Foot.—Dr. McCaw read notes of a case of Tetanus Neonatorum successfully treated with antitetanic serum. The child was brought to the Belfast Hospital for Sick Children 14 days after birth with well-marked signs of infantile tetanus and with the history that for a few days previously it had been refusing the breast from inability to suck. The umbilical scar was in a very unhealthy sloughing condition. Dr. McCaw immediately injected five cubic centimetres of antitetanic serum and two days afterwards gave a second dose of two and a half cubic centimetres of the serum. The child recovered. Dr. Lorrain Smith cultivated the tetanus bacillus from swabs of the umbilicus and specimens of the "drum-stick" organism were shown at the meeting.—In the discussion following the reading of the paper Dr. Lorrain Smith drew attention to the fact that to be effective in causing tetanus the "drum-stick bacillus" seemed to require to be associated with some other pus-producing organism. It appeared that pure cultures of the tetanus bacillus, when injected into animals, did not cause, as a rule, any of the classical symptoms of the disease but did so if pus-producing organisms were injected with them. Being anaerobic it might be that the tetanus bacillus only acted when the other associated organisms had used up the oxygen.—Professor Byers said that Dr. Lorrain Smith's most interesting observations in reference to the life-history of the tetanus bacillus explained the fact that in pre-antiseptic days cases of the disease were common among the infants born in lying-in hospitals, while now, owing to proper aseptic precautions, both in the management of the mother and of the umbilicus of the child, the pus organisms had been eliminated probably as well as the tetanus bacteria; but even if the "drum-stick" bacilli got into the umbilical wound the prevention of any form of suppuration rendered its presence innocuous. He referred to the scourge of St. Kilda (tetanus neonatorum) and explained how it had been stamped out by proper antiseptic care of the umbilical cord. In reference to the employment of serums he said they could only judge scientifically of their effect when the organisms against which they were used were isolated and cultivated from the persons infected. In the case of puerperal fever where there was often multiple infection it was most unscientific to claim results for the anti-streptococcic serum until bacteriological examination of the lochia established first the prevailing type of organism present.—Dr. Henry O'Neill read a paper on Meat Inspection in which he drew special attention to the importance of the medical profession educating the public to use no meat which did not bear an official stamp that it had been duly inspected and passed as sound and non-tuberculous. Dr. O'Neill said that in both Dublin and London the butchers had been too formidable for the corporations to carry out meat inspection as thoroughly as it was done in Paris, Leipsic, and Berlin; but that in Belfast the law compelling meat inspection had been passed by the city corporation and was only awaiting the tardy action of the Local Government Board to make it legal.—Dr. R. W. Leslie read notes of a case of Hæmothorax occurring in a boy, aged 14 years, following a wound in the side caused by a pen-knife. After two tappings, on each of which blood was drawn off, the patient recovered with full expansion of the affected side.

NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 10th, when Dr. A. Whitfield showed a Mother and Child affected with Syphilis. In both cases the disease was acquired. The child was aged six years and had been seen with a generalised early eruption of syphilis at the age of five years. The mother had been treated for recent syphilis two years before, that was when the child was four years of age. At the time of exhibition the mother showed a symmetrical eruption of very perfect rings about one inch in diameter, situated on the flexor surfaces of the forearms. The rings were of a very superficial character and of a florid pink colour, so that without the previous knowledge of the patient the diagnosis would have presented considerable difficulties. The child had been shown to the society one year before with a marked eruption on the back. She had been rendered at one time very dangerously ill by her mother's having disobeyed orders. Owing to the fact that grey powder had disagreed with the stomach she had been ordered mercurial inunction, but the mother had supplemented this by giving her some of her own mercurial medicine. The result was a severe mercurial stomatitis with considerable ulceration of the mouth. The child might now be said to be on the road to recovery, but she still showed ulcerative syphilitic lesions belonging to the deep ecthymatous type.—Mr. Mower White showed a patient, aged 39 years, whose illness began with sudden severe abdominal pain while she was lifting a coal-scuttle, and on the following day she was admitted into hospital suffering from acute peritonitis. She was three months pregnant. The abdomen was opened in the middle line and a large quantity of thin pus escaped; in the lower part of the abdomen the peritonitis was general, and plastic lymph coated many of the coils of the small intestine; the pelvic organs were normal; the peritoneum in the neighbourhood of the vermiform appendix, which lay in a subcæcal fossa, was very acutely inflamed; the appendix was therefore removed, although it showed no gross lesions externally. Subsequently, a perforation of the small intestine covered by the lower extremity of the great omentum was found; the perforation, which appeared to be in the lower part of the ileum, was placed on the unattached side of the bowel; it measured one-third of an inch across; the sides of the opening measured half an inch, so great was the inflammatory thickening of the intestinal coats around the aperture. The patient's condition seemed to preclude enterectomy. To close the aperture three sutures were passed right across the ulcer, serving to bring its sides fairly closely together; then the omentum, first carefully cleansed, was wrapped round the intestine so as to cover four or five inches of it and was sutured to both aspects of the mesentery and also to the surface of the bowel. During the operation some gallons of hot salt solution were used to irrigate the peritoneal cavity and as far as possible the lymph was stripped off the peritoneum. A large rubber drainage-tube was left in the pelvis. The patient made a good recovery. She aborted on the seventh day after the operation; the temperature was normal on the twelfth day and the drainage-tube was finally removed on the fourteenth day. From the seventeenth to the thirtieth days there was fever (maximum temperature 103° F.) without apparent cause. The bowels were constipated throughout the illness. Mr. Mower White suggested that the case was one of typhoid fever in which perforation had occurred, though he had not during the operation observed any evidence of further ulceration of the ileum. Possibly, however, the febrile period interrupting convalescence represented one of the common relapses of this disease.—Dr. Emslie Smith showed for Mr. Ewen Stabb: (1) A case of Myoma Uteri; and (2) a case of Tumour of uncertain nature in connexion with the Right Kidney.

CHELSEA CLINICAL SOCIETY.—A meeting of this society was held on Jan. 15th, Dr. William Ewart, the President, being in the chair.—Mr. C. A. Morris read a paper

on Tubal Pregnancy, with notes on two cases of this condition upon which he had operated. Attention was called to the many and generally uncommon diseases which were at one time considered as the cause of pelvic hæmatocele, whilst at the present time tubal pregnancy was looked upon as the condition which in the majority of cases produced it. The cases read showed two of the terminations of tubal pregnancy; in one an early gestation sac ruptured into the peritoneum and abdominal section was performed while hæmorrhage was proceeding. The fœtation was removed with its adjacent tube and ligament In the second case a tubal pregnancy had ruptured extra-peritoneally between the layers of the broad ligament, and as it continued to distend this and to cause pressure symptoms abdominal section was performed. The tumour of the tube was removed, but the distended broad ligament was left untouched. Both operations were successful and the patients were now in good health. The structure and mode of formation of a tubal mole were touched upon and several specimens of this morbid condition and of tubal pregnancy were shown.—A discussion followed, in which the President, Dr. Vincent Dickinson, Dr. C. J. Harrison, and Mr. D. Vinrace took part.—Dr. J. Blumfeld read a paper on the After-effects of Anæsthetics. After alluding to the preparation of patients for the taking of anæsthetics generally and to the best treatment of them during the hours immediately following operation, Dr. Blumfeld described more specifically the after-effects usually experienced from the various commonly used anæsthetic agents. He related cases which were of interest from the more unusual nature of the after-effects, and he divided these effects, broadly speaking, as they affected (1) the central nervous system; (2) the viscera generally; and (3) the circulatory system. Cases of paralysis of peripheral and central origin were discussed and the relationship of insanity and epilepsy to the conditions of general anæsthesia. Dr. Blumfeld concluded by laying stress upon the extent to which after-effects might be avoided or diminished by proper attention to the selection and administration of anæsthetics and the proper preparation and after-treatment of the patient.—A discussion followed in which the President, Dr. J. J. Marsh, Dr. C. C. Gibbes, Dr. C. J. Harrison, Dr. Vincent Dickinson, Mr. D. Dallaway, Mr. J. D. Mortimer, Mr. Foster Palmer, Mr. R. L. Norman, and Mr. Vinrace took part.

PATHOLOGICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on Jan. 16th, Dr. A. T. Wilkinson, the President, being in the chair.—Dr. W. E. Fothergill showed Microscopic Sections of a Growth which in appearance and in clinical history corresponded to the accepted descriptions of the so-called deciduoma malignum. He also exhibited sections of hydatid mole, of decidual tissue, and of the chorionic structures from which, according to different authorities, the growth in question was derived.—Professor G. A. Wright showed a specimen of Simple Hypertrophy of the Breast removed from a girl, aged 12 years. Both breasts were affected. The gland removed weighed about 8 lb.—Dr. T. A. Goodfellow and Professor Wright showed a specimen of Arteritis, probably gouty. Thrombosis of the popliteal artery led to gangrene of the foot and the limb was removed above the knee. Recovery followed. The patient, a man, aged 52 years, had previously suffered from phlebitis of the veins of the leg with resulting embolic pneumonia.—Mr. J. E. Platt showed a specimen of Trichinosis of the Triceps Muscle. The trichinosis had been discovered during the course of an operation for a supposed sarcoma of the muscle. The patient was a man, aged 61 years, a labourer by occupation, and the trichinosis in all probability had originated three years previously, at which time he had suffered from an illness supposed to be influenza. A tumour in the triceps muscle had been first noticed three months before he came under observation and had attained the size of a tangerine orange. After removal the tumour was found to be probably of an inflammatory nature, but its true relation to the trichinosis could not be definitely stated. The man had made an uninterrupted recovery. Some remarks were made on the previous occurrence of trichinosis in this country.—Dr. Arnold W. W. Lea showed a series of Uteri and Appendages removed by the "vaginal radical operation."

SOUTHPORT MEDICAL SOCIETY.—A meeting of this society was held on Jan. 9th, Dr. R. Harris being in the chair. Three new members were elected.—The chairman briefly reported the result of the recent interview with the coroner on the subject of medical evidence at inquests. The coroner had declared himself entirely in the hands of the county council in the matter and advised a direct approach to the council.—After some discussion the question was left in the hands of a sub-committee for further consideration and report.—Dr. W. H. Barrett read notes of an Unusual Case of Interstitial Nephritis complicated by the presence of a sarcoma. (The specimen was shown.)—Mr. Charles G. Lee (Liverpool) read an interesting paper entitled, "Four Cases from a Specialists' Note Book." Particulars of two cases of acute glaucoma and two cases of cerebral suppuration following suppurative otitis media were given and the practical lessons deduced.

MANCHESTER MEDICAL SOCIETY.—At the annual meeting of this society held at Owens College on Jan. 16th the following gentlemen were elected office-bearers for the ensuing year:—President: Mr. A. H. Young. Vice-Presidents: Dr. A. Donald, Dr. J. Mackenzie, Dr. W. Milligan, and Mr. A. Wilson. Honorary treasurer: Mr. J. W. Smith. Honorary secretary: Dr. E. S. Reynolds. Committee: Mr. W. Coates, Mr. J. Collier, Dr. J. J. Cox, Dr. T. Harris, Dr. M. P. Ledward, Mr. W. P. Montgomery, Dr. F. C. Moore, Mr. J. H. Ray, Dr. C. G. L. Skinner, Dr. W. K. Walls, Dr. R. B. Wild, and Dr. R. T. Williamson. Library Committee: Dr. T. N. Kelynack, Dr. A. W. W. Lea, and Mr. J. E. Platt. Auditors: Dr. F. J. H. Coutts and Dr. Edgar Helme.

Reviews and Notices of Books.

Cancer of the Uterus: its Pathology, Symptomatology, Diagnosis, and Treatment. By THOMAS STEPHEN CULLEN, M.B. Toronto. With 11 Lithographic Plates and also 300 Coloured and Black Illustrations in the Text. London: Henry Kimpton. 1900. Pp. 693. 8vo. Price 31*s.* 6*d.* net.

THIS book of Dr. Cullen's is further proof, if indeed proof were wanted, of the exceedingly good work which is being done by numerous observers at the Johns Hopkins University. It is a monograph on cancer of the uterus of great value and is a lesson as to the right method of dealing with the abundant material of this kind which must be met with in every large hospital. The work is founded upon the examination of 182 cases of cancer of the uterus. Of these, 128 were squamous-celled carcinoma of the cervix; 19 adeno-carcinoma of the cervix; and 35 adeno-carcinoma of the body of the uterus. A full and good account is given of the normal anatomy and histology of the uterus, illustrated by numerous figures, many of which are taken from Kelly's "Operative Gynæcology." The chapter upon the Removal and Examination of Uterine Tumours for Diagnosis illustrates how completely and methodically Dr. Cullen has examined his material and enables us to form an opinion as to the value of his results. In describing the appearances and structure of squamous-celled carcinoma the author states that this variety of cancer of the cervix consists of an ingrowth and branching of the squamous epithelium of the part, and coincident with the ingrowth there is generally a branching outgrowth of the stroma and epithelium, forming a cauliflower or mushroom-like growth. As to whether the stroma is a malignant growth or only due to irritation the author leaves undecided. The account of all the varieties of cancer is illustrated by numerous cases very fully recorded, both as regards their history, clinical features, and the result of macroscopic and microscopic examination. It may be objected that this greatly and unnecessarily increases the size of the book. It is, however, not a work mainly intended for students, and in a matter of this kind what the experienced reader wants are facts upon which he can come to his own conclusions, apart from the deductions drawn from them by the author. As to the quality and the quantity of the facts in this book there can be no complaints. Dr. Cullen points out that macroscopically the

cauliflower-like growth is really made up of papillary masses consisting of finger-like outgrowths. A very interesting chapter is that upon the extension of squamous carcinoma of the cervix. The author agrees with Winter that the lymph-glands are usually involved late in the disease, and in answer to the question as to why this is so he suggests that the epithelial cells are too large to enter the lymph radicals. The growth must therefore extend out into the broad ligament and break into a large lymph channel before the cells can reach a lymph gland. It is stated in the preface that the reader will be surprised at the small amount of space devoted to symptomatology, but the results of his researches lead Dr. Cullen to the conclusion that diagnostic symptoms at best are meagre and in the early stages give little or no clue to the real nature of the disease. Hence the value of curettage when there is the slightest uterine hæmorrhage that cannot be explained. The first symptom in the great majority of cases of squamous-celled carcinoma is usually a bloody discharge. In the chapter upon the Diagnosis of the Variety of Cancer of the Uterus all the various conditions likely to be confounded with malignant disease are given in detail, and this is also done in the corresponding sections devoted to the differential diagnosis of adeno-carcinoma of the cervix and adeno-carcinoma of the body of the uterus.

In the treatment of squamous-celled carcinoma it is said of abdominal hysterectomy: "this operation should be preferred in all cases where the patient is not too stout," and the method described by Werder is advocated. These extensive operations are at the present time practised by many of the American school of gynæcologists. They have, however, not yet been done in sufficient numbers to enable us to judge whether they are likely to increase the chance of complete cure or not. We must remember that the analogy so often drawn between cancer of the uterus and cancer of the breast does not in reality hold good. Werder's operation of abdominal hysterectomy is undoubtedly a very ingenious method of avoiding fouling of the peritoneal cavity with the carcinomatous growth, and he deserves great credit for it. Whether it will ever take any permanent place in the art of surgery remains to be seen. Even when the ureters are catheterised the danger of including one in the ligature is great, and in these cases catheterisation of both is often impossible. The description of vaginal hysterectomy is practically the same as that in Kelly's Gynæcology. A warning is given against the fallacious advice that even when the disease is too advanced for complete removal hysterectomy should still be done so as to give the patient relief. Many of such patients obtain no relief at all and run the risks of the operation without any resulting benefit. In adeno-carcinoma of the cervix stress is laid upon the changes in the epithelium. Dr. Cullen says that the cells differ greatly from those of the normal cervical epithelium and cannot morphologically be recognised as derivatives from it. He also finds that, at any rate in the early stages of both squamous carcinoma and adeno-carcinoma of the cervix, no changes are to be found in the body of the uterus. One interesting fact is brought out, and that is that all forms of cancer are equally common in the white and black races, contrary to the idea which at one time prevailed that cancer was rare in the negress. The extreme importance of the examination of scrapings in the diagnosis of early adeno-carcinoma of the body of the uterus cannot be too much insisted upon, and what striking results may be obtained by the examination of such scrapings by a competent pathologist is shown by many of the cases recorded. A very good example is figured on page 363. Dr. Cullen is inclined to believe that the papillary form of cancer of the body of the uterus has probably started in the surface epithelium and that when a gland-like arrangement is met with that it has taken origin in the glands themselves. The clear statement of the author as to whether a fibro-myoma of the uterus can undergo carcinomatous degeneration is to be welcomed. He has failed to find a single instance amongst his cases of adeno-myoma becoming malignant, and, as he says, to speak of carcinomatous degeneration of a myoma is a contradiction in terms. The very late stage of cancer of the body at which the glands become involved is a similar condition to that obtaining in cancer of the cervix. In nearly all the operable cases of adeno-carcinoma of the body met with no glandular involvement had taken place, and this accords with the experience of Winter. In four out of 500 cases of myomata carcinoma of the body has been present as well. In connexion with the diagnosis of cancer of the body of the uterus a clear account is given of the changes in the mucous membrane in cases of endometritis and similar conditions. In all cases of carcinoma of the uterus it is recommended that the tubes and ovaries should be removed as well, since in some of the cases, although in the early stage, the appendages were already involved. In a critical review of the rare cases of so-called squamous carcinoma of the body of the uterus it is noted that in only nine of 50 cases of endometritis was there any thickening of the epithelium resembling squamous epithelium. Of the recorded cases of squamous carcinoma of the body Dr. Cullen is only inclined to admit three—viz., those of Gebhard, Kaufmann, and Flaischler. The account of deciduoma malignum is mainly taken from Whitridge Williams's and Dorland's monographs on the subject, a detailed description being given of Whitridge Williams's case. Dr. Cullen is in favour of retaining the name "deciduoma malignum," and is of opinion that the clinical features are sufficient to distinguish it from sarcoma and carcinoma of the uterus. In cases of pregnancy complicated by inoperable cancer of the uterus Cæsarean section followed by Porro's operation is recommended; in operable cases vaginal hysterectomy or vaginal Cæsarean section. One of the most interesting chapters is that upon the clinical phenomena common to carcinomata of the uterus. The results of the operative treatment in the Johns Hopkins Hospital are given in detail. In only one case did recurrence occur other than locally. This patient remained well for more than a year and then suddenly the inguinal, axillary, and cervical glands became enlarged and she died 20 months after operation.

Of 61 patients operated upon for squamous-celled carcinoma of the cervix 13 were still alive in January, 1900, the period of time that had elapsed since operation varying from 10 months to six years and two months. In four cases more than three years had elapsed. The uterus was removed in six cases per vaginam, in five by the abdominal route, and in the remaining two combined vaginal and abdominal hysterectomy was performed. In 12 cases of hysterectomy for adeno-carcinoma of the uterus only two (16 per cent.) of the patients were known to be living—one five years and seven months after the operation, the other five years and three months. Of 30 cases of adeno-carcinoma of the body of the uterus 20, or 66 per cent., were still free from recurrence. Of these the period since operation varied from 11 months to six years. In 12 instances the patients had remained free from recurrence for more than three years.

In summing up the various analyses as to the causation of carcinoma, Dr. Cullen finds that heredity appears to have little influence, that trauma as produced by parturition has a causal relation to cancer of the cervix but not to that of the body, and that the weight of evidence is against the parasitic theory.

The numerous illustrations in the book are beautifully drawn and reproduced, and the whole work reflects the greatest credit upon all concerned in its production.

Elements of Human Physiology. By ERNEST H. STARLING, M.D.Lond., F.R.S., Jodrell Professor of Physiology, University College, London. Fourth edition, 8vo. London: J. & A. Churchill. 1900. Pp. 679. Price 12*s*. 6*d*.

WE are glad to welcome Professor Starling's well-known manual in a more imposing form. Like other treatises that have originally appeared in an unpretending fashion and have been found well adapted to the needs of the student it is undergoing a process of evolution that will, we fear, end in its being only serviceable to the teacher when it will be replaced by some more elementary work. As it stands, however, we can only speak of it as one of the best of the numerous handbooks of physiology that have recently appeared. It is written by one who has not only a very thorough knowledge of the literature of his subject but by one who has had large experience of practical and experimental physiology and who has written many original articles that have commanded attention. Professor Starling gives straightforward statements explanatory of each of the separate great functions of the body, illustrating them where illustrations are required for the comprehension of the text by diagrammatic sketches. Some of these are too coarse and hence misleading, as those, for example, of the blood corpuscles. He has avoided notes which only serve to distract the attention of the reader, especially if he be an inexperienced one, and he has introduced the names of authorities sparingly.

The first chapter, devoted to the Material Basis and the Sources of Energy of the Body, shows that 12 chemical elements enter into the composition of all living organisms. The names of these 12 are carbon, hydrogen, nitrogen, oxygen, sulphur, phosphorus, chlorine, potassium, sodium, calcium, magnesium, and iron. Four others are occasionally present—silicon, iodine, fluorine, and manganese. These are all found on the crust of the earth, and for the most part in a state of maximum oxidation and are devoid of potential energy. Plants, under the influence of the sun's rays, build up these elements into substances which can develop energy by combustion. The green parts of plants utilise the radiant energy of certain parts of the spectrum in the splitting up of CO_2, giving off the oxygen to the atmosphere and building up the carbon into complex compounds of which the earliest appear to be sugar and starch. "It is supposed," he continues, "that the first change which occurs is a formation of formaldehyde $CO_2 + H_2O = CH_2O + O_2$, and that this formaldehyde by simple condensation yields a carbohydrate of the formula $C_6H_{12}O_6$. The plant thus obtains a store of potential energy which it can utilise for the formation of still higher products or for the synthesis of such bodies as fats and proteids. All three classes of substances, proteids, fats, and carbohydrates, are built up together with salts and water to form the unstable material which as the chemical basis of life is known as protoplasm." The relations of animals to plants are then discussed and some of the numerous synthetic processes which they can effect are given. The remainder of this important chapter describes the theoretical mode of formation, the properties and the chemical characters of the proteids, fats, and carbohydrates. The chapters on the contractile and nervous tissues are highly instructive and embody the results of much research.

Napoleon is said to have maintained that a history of France must either be compressed into a single volume or expanded into 20. The same may be said of a history of physiology; the number of articles that have been written on almost every part of it, the number of experiments that have been made, often with contradictory results, is so enormous that one of two modes of treatment must be adopted: either the facts must be given with discrimination *in extenso*, as is done in such works as Hermann's, Richet's, or Schäfer's physiological treatises, or a succinct account must be attempted in which the impressions of one writer are set down in a dogmatic manner, and the student must accept the statements made without any clear comprehension of the grounds on which they rest. There can be no question of the relative interest attached to the perusal of works written on these different lines, especially in dealing with such a subject as physiology. If short, a book covering the whole field of physiology must be dry; if extended, it may be made highly interesting. As might be expected, Professor Starling everywhere gives the established facts in physiology in a very clear and logical fashion, and while it would appear in parts that he writes rather for the young physiologist than for the student of medicine, yet it must be remembered that a true study of physiology involves an accurate knowledge of organic chemistry.

A Manual of Modern Surgery: an Exposition of the Accepted Doctrines and Approved Operative Procedures of the Present Time for the Use of Students and Practitioners. By JOHN B. ROBERTS, A.M., M.D., Professor of Anatomy and Surgery in the Philadelphia Polyclinic; Mütter Lecturer on Surgical Pathology of the College of Physicians of Philadelphia. Second Edition. London: Rebman, Limited. Pp. 850. Illustrated with 473 Engravings and eight Plates in Colour and Monotone. Price 21*s*.

THIS is the second edition of the above work, but as its title-page contains no date we are left in doubt as to when it was issued. The author tells us in his preface that many articles have been entirely rewritten and that the text throughout has been thoroughly revised, and therefore we are justified in thinking that it is intended to represent the views of the present day.

There is much to praise in the general arrangement of the volume and the descriptions are for the most part clear and concise, but we cannot help thinking that there is in many cases a lack of appreciation of the relative importance of the subjects dealt with. For instance, the account of a bunion and the description of lithotrity occupy approximately the same space—less than a page and a half each. There is also observable a tendency to indefiniteness of statement, for the author frequently employs the expressions "it is said" and "it is stated" without any indication as to his agreement or disagreement with these opinions, and when this occurs in the descriptions of treatment the student is at a loss to know what to think. What a student requires in a text-book is a clear indication of the best treatment, and a certain degree of dogmatism is not only justifiable but distinctly advisable. Regarded as a whole the book may be considered to be a very trustworthy guide to the student or practitioner, and there are really but few statements to which we could take exception. It is certainly a mistake, however, to speak of congenital syphilis as the "quaternary" stage of the disease, for the congenital variety of the disease in the child cannot be a "stage" of disease in the parent but is a distinct attack of the disease. Especially objectionable is this application of the name "quaternary" because it has already been applied to very late manifestations of the syphilitic poisons, such as locomotor ataxia and general paralysis of the insane. In the description of Colles's fracture of the radius the author says: "It is frequently designated by the name of one or other of those writers who have discussed it, but such nomenclature serves to confuse the student and to perpetuate erroneous teaching." We certainly fail to see how this applies to the use of Colles's name for this fracture, and we cannot perceive that the student is less likely to be confused by the use of the names "ordinary" or "classic" fracture which the author applies to it. Personal names frequently assist the memory in a remarkable degree, and where a particular condition has been associated for many years with a personal

name it is wise even in the interests of students to retain it. The use of proper names to designate diseases and signs and symptoms of diseases has been overdone, and no new appellatives of this kind should find their way into our scientific vocabulary, but perfectly well-established terms must be retained.

We agree with the author that the terms "intra-capsular" and "extra-capsular" as applied to fractures of the neck of the femur are not well chosen, but he does not appear to perceive that however they may be named there are two definite varieties of fracture of the femoral neck which differ in the mode of origin, in the treatment, and in the results. On page 536 is an illustration of a sling in which the hand is shown in a most uncomfortable position—namely, at a lower level than the elbow. For skin-grafting the author appears to prefer the older method, and says of Thiersch's grafts that "the pain is rather severe when the shavings are cut." This is not so if the shavings are really thin and include only the apices of the papillæ, and we are inclined to think that Dr. Roberts cuts these grafts too thick, especially as we notice that he merely states that "the shavings should not include the entire thickness of the skin," implying that they may include nearly the whole thickness. It is a pity that the illustration on page 529, representing dislocation of the jaw, is attributed to Ashhurst, for it is really taken from Fergusson's Practical Surgery, where it appeared more than 50 years ago.

The portion of the work that seems to us to be especially good is that dealing with the treatment of hæmorrhage, and we do not remember ever to have seen put more clearly the reasons for the correct treatment of primary and secondary hæmorrhage. We have been much pleased with many parts of the work and we consider it a useful addition to surgical literature.

Die Technik der Speziellen Therapie. Von Dr. F. GUMPRECHT, Professor in Jena. (*The Technique of Special Therapeutic Measures.*) Second Revised and Enlarged Edition. Jena: Gustav Fischer. 1900. Super royal 8vo. Pp. 354. With 182 illustrations. Price 7 marks.

PROFESSOR GUMPRECHT has undertaken the difficult task of writing a book the object of which is to enable students and practitioners to carry out "without further instruction" those clinical procedures and minor operations which are in every-day use. He supplies a great deal of that information about them which, as a rule, is only gathered *vivâ voce* from teachers in cliniques and tutorial classes. The obstacle to the success of such an undertaking lies in the fact that it is almost impossible within the limits of a book to remove the multifarious difficulties which perplex the student in connexion with these operations. Although we do not think that the author has altogether succeeded in his attempt there is no doubt whatever that he has written a very useful book and, judging by the demand for a second edition some 20 months after the publication of the first, one that has distinctly supplied a want.

The book is divided into sections according to the region affected. In each section the anatomy of the parts is explained concisely, the more important points being illustrated by diagrams. The instruments which are used and the method of their employment are described in detail and attention is directed to the accidents which are liable to occur during their use. A few references to the literature are appended to each chapter. The opening section deals with puncture of the skin for anasarca, phlebotomy, transfusion of blood, and saline solutions; another with the œsophagus and the methods of examining it; and a third gives minute directions for washing out the stomach and illustrates a variety of instruments employed for this purpose. In the chapter on Local Treatment of the Nose, Naso-pharynx, and Larynx Professor Gumprecht takes the average reader somewhat out of his depth—it will fall, for instance, to the lot of few practitioners to swab out the whole larynx—and at times he seems to forget the class of reader for whom he is writing. After a paragraph on the galvano-cautery of the hypertrophied inferior turbinated body he describes at some length the after-treatment with methylene blue advocated by Bresgen, a mode of treatment which is somewhat complicated for a beginner. The practitioner, moreover, will probably find that the good results frequently obtained by this method hardly compensate for the annoyance of occasionally seeing his patients with their faces or teeth stained blue. For the removal of adenoids the author anæsthetises only unruly children, and when an anæsthetic is required he recommends that the patient should be recumbent during its administration and should be raised to a sitting posture for operation. When gas and ether are employed as the anæsthetic there is no reason why the patient should be in the recumbent posture during the administration and so no need of sitting him up during the operation. When, however, chloroform is employed it is distinctly dangerous to change from the recumbent to the semi-recumbent or sitting posture; nor is it necessary in the case of dexterous operators. It cannot be too strongly insisted upon that patients who are given chloroform should be placed in the dorsal decubitus and under no circumstances raised to the sitting position.

In the chapter on the Thorax careful directions are given for tapping the pleural cavities, and special stress is laid on the importance of evacuating the fluid slowly. We are told that, as a general rule, 20 minutes should be allowed to a litre of fluid and that not more than one and a half litres should be abstracted at one time. While these rules admit of exceptions there is no doubt that serious risks are too frequently and needlessly incurred by rapidly emptying these cavities. In tapping the abdomen for ascites due to cirrhosis of the liver which is unaccompanied by much contraction, the author, following Dr. Flint and Dr. Cheadle, recommends early abstraction of the fluid and emphasises the good results which have been obtained thereby. The last section deals as fully as the limits of the work will allow with the examination of the urethra, prostate, and bladder, the different sorts of catheter are fully described, and sound advice is given as to their employment in the commoner pathological conditions of these organs.

The volume is one which the student and the practitioner will find of great value. Professor Gumprecht writes with admirable clearness and the illustrations are excellent; moreover, there is no other book of moderate size with which we are acquainted that covers the same ground.

A Treatise on the Diseases of the Ear, including the Anatomy and Physiology of the Organ, together with the Treatment of the Affections of the Nose and Pharynx which conduce to Aural Disease. By T. MARK HOVELL, F.R.C.S. Edin., M.R.C.S. Eng. London: J. & A. Churchill. Second edition. 128 Illustrations. Pp. 808. Price 21*s*.

THIS edition has been entirely rewritten since the first appeared in 1894, and in its present form it ranks amongst the best text-books on the ear and takes almost, if not quite, precedence of all modern works originally written in English. But it will be many years before Politzer will cease to hold the position that he now occupies as the authority on matters aural. The most noticeable omission in the present issue as compared with the former is the cutting out of the illustration of post-nasal adenoids which detracted not inconsiderably from the merits of the book. Among the most valuable additions are amplifications in the anatomy of the ear, the description of keratosis obturans, and a far more comprehensive and complete account of the operation on the mastoid antrum as described and modified by Ballance.

In dealing critically with a work of this class the fact must be borne in mind that it is more serviceable when giving, even in a dogmatic fashion, views at variance with the accepted ones, than when the writer from either lack of originality or confidence thrusts upon the public a *résumé* of the views of others. Mr. Hovell holds on some points views contrary to those held by numbers of well-known aurists, but when he does so he gives fully his reasons, and in our opinion thereby enhances the value of the book. The operation of removal of the ossicles in chronic suppurative otitis media is a case in point, as is also the therapeutical value of Eustachian bougies. In the former operation the author, when describing the measures to be adopted in the treatment of this form of otitis, has entirely changed his opinion, now definitely condemning the procedure which he formerly upheld.

In some parts the author in his determination to be clear runs the risk of being prolix, whilst in others, though this too is rare, the reverse obtains. We must mention a few omissions, in themselves trifling for the most part, but not immaterial in such a book as this. In the chapter on deaf-mutism there is no mention of Itard who in the second decade of the last century first demonstrated the possibility of teaching a certain proportion of these unfortunates to use their auditory nerves; again, no mention is made of the important dissections by Toynbee in relation to the connexions of the tympanic membrane with the periosteal linings of the middle-ear and external meatus. The absence of any description of chronic malarial deafness seems unfortunate, as there exists certainly a class of case presenting features differing from ordinary chronic adhesive or sclerotic middle-ear inflammation, while the symptoms occur in persons who have been afflicted with malaria. This work gives the experiences of 25 years of active work and close observation and will be equally of value to all students of aural surgery, however advanced.

Diseases of the Anus and Rectum. By D. H. GOODSALL, F.R.C.S. Eng., Senior Surgeon (late House Surgeon) to St. Mark's Hospital for Fistula and other Diseases of the Rectum, Senior Surgeon to the Metropolitan Hospital; and W. ERNEST MILES, F.R.C.S. Eng., Surgeon (out-patients) to the Gordon Hospital for Diseases of the Rectum, Assistant Surgeon to the Cancer Hospital, Brompton, &c. In Two Parts. Part I. London: Longmans, Green and Co. 1900. Pp. 340. Price 7*s.* 6*d.*

THE first 38 pages of this volume are devoted to a very full acount of the anatomy of the rectum and anus, and as it is well illustrated, it is likely to be of service to those who have not paid special attention to the subject. Fig. 2, entitled "the perianal region," is simply a reproduction of a photograph of a healthy perineum, and is surely unnecessary. The other matters dealt with in this part are abscess, fistula, fissure, and hæmorrhoids; while tumours, stricture, ulceration, and prolapse are to be contained in the second part. As to the general arrangement of the work, it may certainly be said that the various morbid conditions are carefully described; their etiology is fully discussed and a good account of the treatment to be followed is given. The illustrations are numerous and for the most part they are clear, but some of them fail to show clearly the lesion present.

The rules given for operation in fistula in ano are distinctly good and in this connexion we may mention some observations contributed by Dr. Hugh Walsham on the association of fistula with pulmonary phthisis. Clinically, among 891 cases of phthisis there were five cases of fistula in ano and two of ischio-rectal abscess, and of 133 post-mortem examinations in cases of phthisis only one fistula in ano was found, and Dr. Walsham expresses himself as strongly in favour of operation for this condition in patients suffering from pulmonary tuberculosis.

In speaking of the contra-indications of operations for piles the authors do not say one word as to the advisability of not operating in cases of portal obstruction. They do, indeed, say that "in those patients in whom there is a well-marked tendency to a plethoric habit of body ..... the removal of the piles is inadvisable," but no mention is made of the importance of the communications with the portal system. In the treatment of internal hæmorrhoids the authors advocate ligature and tell us that they never employ any other method. Their objection to every one of the clamp methods is on the ground that with the hæmorrhoid some healthy mucous membrane must be removed also, while they consider that Whitehead's operation leads to a severe loss of blood, is tardy in healing, and is liable to cause ultimate contraction of the lower part of the rectum. All these objections are imaginary and none of these evils result when operations are carefully performed.

It has often been said that at the present day medical men cannot write Latin prescriptions, and this statement seems probable when we find two hospital surgeons combining to write "fiat pulverem."

The Sick and Wounded in South Africa: what I Saw and Said of Them. By Mr. BURDETT-COUTTS, M.P. London: Cassell and Co. 1900. Pp. 260. Price 1*s.* 6*d.*

CARLYLE in his essay "On History" says: "The old story of Sir Walter Raleigh's looking from his prison window on some street tumult which afterwards three witnesses reported in three different ways, himself differing from them all, is still a true lesson for us." This story comes inevitably to our minds as we read Mr. Burdett-Coutts's plain straightforward statement. He has, he tells us in his preface, put down everything that he has said or written on the subject in public and we are quite certain that Mr. Burdett-Coutts has put down nothing but what he actually thought he saw. That the Army Medical Department was quite undermanned and that there was a deplorable amount of sickness and suffering we are certain is the case. But that to use Mr. Burdett-Coutts's own words (p. 221), "the things I saw and described were in a large measure preventable" we take leave to doubt—i.e., so far as regards Bloemfontein. That matters in the base hospitals improved after the publication of the famous Article IX. is, we think, without doubt, but with regard to matters at Bloemfontein, which undoubtedly were very bad, the whole question may be summed up in one word—namely, "transport." As we said in our issue of July 14th, 1900, the troops arrived at Bloemfontein physically exhausted and dependent for supplies upon a thin and precarious line of transport. On an occasion such as this was everything had to give way to the demands of the fighting line. We think, moreover, that the epidemic of enteric fever which so suddenly broke out on a large scale at Bloemfontein could not have been foreseen any more than the exceptional conditions at Paardeberg and Bloemfontein, which gave rise to it, could have been foreseen. We give Mr. Burdett-Coutts every credit for his statement, but further criticism of his words and writings must be left until we can deal with the just published Report of the Special Commission.

LIBRARY TABLE.

Atlas der Anatomie der Sternhöhle der vorderen Siebenzellen und des Ductus Nasefrontalis mit erläuterndem Texte und Bemerkungen über die Behandlungen der Sternhöhleneiterung. (Atlas of the Anatomy of the Frontal Sinus of the Anterior Ethmoidal Cells and the Nasofrontal Canal with Explanatory Text and Remarks on the Treatment of Frontal Sinus Suppuration.) By Dr. ARTHUR HARTMANN of Berlin. Wiesbaden: Verlag von J. F. Bergmann. Glasgow: F. Bauermeister. 1900. Price 16 marks.—Dr. Hartmann

has long since made for himself a name as an earnest worker and a lucid teacher, more especially in the field of otology; this Atlas will serve to bring his researches to the knowledge of those who have not been aware of his previous utterances upon the subject. The text is brief, the matter is clearly and concisely written, and the greatest attention has been paid to keeping things in their proper order and separate. The first part contains in chronological order quotations from various well-known German anatomists, with a critical *précis* of Killian's account of the embryology of the part. The author then tells us that the dissections depicted in the Atlas are characteristic examples selected from his collection, in order that the anatomical varieties may be shown to be due to the laws which influence the body generally and thereby the anatomy and the embryology of the part brought into line. He classifies the known irregularities of the sinus and frontal cells under the following:—1. Frontal sinus without frontal cells and without naso-frontal canal: (*a*) with a simple orifice either round or slit-like in the middle meatus; and (*b*) with a nasal orifice obstructed from below by the bulla ethmoidalis. 2. Frontal sinus and cells through which a naso-frontal canal is formed: (*a*) with the cells in a regular order; and (*b*) with the cells irregular. 3. Hernia-like encroachment on the frontal sinus. 4. Absence of the frontal sinus. These are all illustrated in the 12 plates, each of which contains, most beautifully reproduced, two dissections. The remarks on the operative treatment are thoroughly practical, and the work will be valuable as a handbook of reference to both anatomists and surgeons.

King's College Hospital Reports. Vol. VI. Oct. 1st, 1898, to Sept. 30th, 1899.—Dr. John Curnow continues his interesting historical sketch of King's College and of King's College Hospital. In the present section, amongst other information, Dr. Curnow recalls the part played by Professor Partridge in the trial of Bishop and Williams for the murder of Carlo Ferrari, whose body they afterwards tried to sell for dissection. Four obituary notices of old King's College men follow—namely, Sir William Priestley, of whom Dr. William Playfair contributes a sympathetic notice; of Joseph Lavies, famed outside his profession as an admirable amateur actor; of Captain Matthew Louis Hughes, R.A.M.C., killed in action at Colenso; and of Frederick Henry Corbyn. Original articles by members of the staff, with reports from the various departments of the hospital and school, together with a table of "What Old King's Men are Doing," complete the number.

Atlas der Nasenkrankheiten. Enthalten 356 Figuren in 475 Einzelbildern auf 38 Tafeln. (*Atlas of Diseases of the Nose.* Containing 356 figures of 475 separate drawings in 38 plates.) By Hofrath Dr. ROBERT KRIEG (Stuttgart). Stuttgart: Ferd. Enke. Glasgow: F. Bauermeister. 1900. First and second parts, 6*s.* each.—The Atlas of Diseases of the Larynx published in 1892 by the same author has served as a model for the present work, which is being issued in seven parts with five or six plates in each. These plates are certainly very well drawn, though, as in all coloured reproductions, the difficulty of obtaining flesh tints without making the price of a book prohibitive has not failed to leave its mark. The author has with few exceptions confined himself in the text to a short, and at the same time clear, description of each figure. On page 11 is a scheme of septal deviations, spherical deviations, and scoliosis nasi, which is an extremely useful and valuable addition. Dr. Robert Krieg gives the descriptive text in both German and English which will make the work of greater general value, though the translator is most obviously unable to throw off the fetters of German syntax as this quotation will show; "..... Do not belong from an embryonic point of view, as they are situated in the middle line of the azygos-formed frontal process, to the arrests of development of the (complete) facial clefts"; and there are numerous words translated too literally and without necessary freedom, as "unpaarig" by "azygos," and "blasenformige Deviationen" by "vesicular deviations." "Fensterresection" is not translated, neither is "Filtrum" nor "Hakenforsatz," though a literal rendering would in either case have been ample, as "window resection," "infiltration," "unciform process," and would at the same time have made the meaning comprehensible. Again, why should "Kartoffelnase" be translated and "Wulstlippen" not? The following are dealt with in the first two parts: dermoids and fistulæ, minor deformities, deviations of the septum, spurs and crests, deviations and deflections, and eczema and innocent growths.

Mrs. Beeton's Cookery Book. New edition. London: Ward, Lock, and Co. Pp. 312. Price 1*s.*—This is an excellent book. It is very full and yet very simple. Good cookery—we refer, of course, to the principles of the art and not to the higher flights—is perfectly easy if the cook will only take a little trouble, have a good fire, and use a little common sense. We are glad to see that Mrs. Beeton (p. 59) says that frying a chop or steak destroys both flavour and quality. Nevertheless, she gives a recipe (p. 110) for frying steak, but we suppose concessions have to be made to want of taste. One test of a good cookery book, to our minds, is the directions which it gives for making a baked custard pudding. There is nothing better when well made and nothing more abominable when badly made. Who does not know the nauseous concoction made of what are euphemistically called "cooking eggs," over-sweetened and baked in a quick oven, with the result of producing lumps of coagulated, stale albumen floating in a yellow watery liquid? This is what the average cook calls a custard pudding and offers to an invalid. Mrs. Beeton's recipe (p. 212) is good but not very clear, for we cannot make out whether she means that the milk when put into the saucepan with the sugar and the lemon is to be heated or no. Also, it is better to add the nutmeg after baking and not before, for in the latter case the aroma of the spice is driven off in the oven. The amount of sugar—a quarter of a pound to one and a half pints of milk—is surely excessive, but we are glad to see stress laid upon the necessity for a *very slow* oven. The book is worth much more than a shilling.

What is Life? or Where are we, What are we, Whence did we come, and Whither do we go? By FREDERICK HOVENDEN, F.L.S., F.G.S., F.R.M.S. Second edition with Appendix. London: Chapman and Hall. 1899. Pp. 308. Price 6*s.*—We like the author's choice of facts for the purpose of elucidating the great problem, however much we may dissent from his deductions. He has drawn largely from the works of Laing, Huxley, Graham, Winwood Reade, Ernst Haeckel, present-day scientists, and others, and thus has collated a selection of excerpts from a series of deep-thinking men who command the attention of every earnest student of the subject. The book is divided into Part I., The Statement of the Case; and Part II., The Evidence proving the Statement of the Case. The former occupies two pages, and the latter over 300. Ether as the one great agency by which atomic, molecular, or whatsoever force we like to call it is manifested is his creed. Then, what is ether? Ether is yet "behind the veil," and the author has succeeded in lifting the veil hardly high enough for gaining the merest glimpse of the vista beyond. The attempt to paraphrase "Consider the lilies of the field" is execrable. The poetry of the Bible is unassailable.

The Nineteenth Century: a Dialogue in Utopia. By HAVELOCK ELLIS. London: Grant Richards. 1900. Pp. 166. Price 3*s.* 6*d.*—"They were talking about a period that lay

in the dim and remote past—the nineteenth century of the Christian era." And the conversation was carried on by a youth of inexperience and an elder man, a student of the little known nineteenth century. This retrospective review of our present institutions and customs is hardly flattering to the intelligence of our cotemporaneous civilisation. As for these criticisms from Utopia, *ex uno disce omnes*. Speaking of our countrymen of the present time, the elder man remarks: "They revelled in filth, disease, and luxury. We may be sure they knew what suited them best, and their whole constitution and civilisation *was* born of that revelry." This philosophic "looking backwards" has this grain of comfort in it: it infers that our present mistakes and experiments constitute stages in the evolution of what Mr. Havelock Ellis regards as Utopia.

JOURNALS AND MAGAZINES.

THE *Practitioner* will certainly be a more useful periodical in consequence of the method which is to be adopted in its future numbers and which gives to the January number—in which it is for the first time employed—a cohesion and an easiness of comprehension which are wanting to a magazine of this kind where many diverse subjects are treated in more or less limited articles. One particular subject is to be the keynote of each monthly issue, and the more important articles will all bear directly from different points of view upon the matter selected. In the January number rheumatic fever is the subject. Dr. Arthur Newsholme writes upon the Epidemiology of Rheumatic Fever. His most important conclusions relate to its seasonal incidence, to its proclivity for urban rather than rural populations, and to the relation of dry subsoils to its infective origin. Dr. Newsholme's strictures upon the popular association of rheumatic fever with dampness and wet—due, he maintains, to the confusion introduced by "rheumatism," a condition which is probably unrelated to the specific disease—find a quaint contrast in the remarks of Dr. StClair Thomson a few pages further on, where cold and wet are regarded as etiological factors definitely known to be common to rheumatism and to sore-throat. In Dr. Thomson's article generally there is too little care taken to confine the term "rheumatism" to the specific acute disease which is meant to be under discussion in this number of the *Practitioner*. His otherwise valuable treatment of the relationship between rheumatic fever and the various forms of acute affections of the throat generally and tonsils in particular is in this way somewhat depreciated. Dr. F. J. Poynton's contribution deals with the Pathology of Rheumatic Fever and terminates with an account of the diplococcus discovered by Dr. Alexander Paine and himself, and already fully described in THE LANCET.[1] Dr. G. A. Gibson deals with the Effects of Rheumatic Fever on the Heart and makes interesting observations upon the endothelial cells of the vascular system and the possible effects of organisms and toxins in producing vegetations upon the cardiac valves. His article includes a short account of treatment, and, in common with the other authors who refer to the matter, he strongly insists upon the importance of prolonged rest after acute symptoms have subsided. Dr. A. P. Luff, who deals especially with treatment, lays down eight weeks as the usual period during which a patient the subject of an attack of acute rheumatism should be confined to bed—that is to say, if the heart is in any way involved in the attack. His remarks on treatment are sound and comprehensive, but include nothing particularly new. Cold baths are recommended for those unusual cases in which there is severe hyperpyrexia. Dr. George F. Still writes on Rheumatism in Childhood, and he emphasises what is already of course well known—the latency of symptoms. He mentions several interesting details which though really always indicative of rheumatic disease are only too commonly ignored and misinterpreted; such, for instance, are headache, pains in the side, and symptoms of hip disease. A Review of the Medical Sciences deals largely with rheumatic fever.

Progressive Medicine: A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital, &c. Vol. IV. 1900. London: Henry Kimpton.—We have been able to speak very favourably of the earlier volumes of this Digest, and the present number is fully equal to those which have preceded it. Dr. C. G. Stockton of Buffalo has contributed an article on the Diseases of the Digestive Tract and the Allied Organs. Fremont's researches are described here on the value of drugs in increasing gastric secretion. Fremont found that both the total free acids and total chlorides were increased by many substances, especially by white wine and gentian, while strychnine and pilocarpine had much less effect. These are curious results and not fully in accord with clinical experience. A valuable discussion is that devoted to the subject of the relation of tetany to dilatation of the stomach; the connexion is undoubted but the explanation is by no means clear. Dr. W. T. Belfield of Chicago writes on the Genito-urinary Diseases in the Male and Syphilis. During the last few years it has gradually been recognised that gonorrhœa is not the sole cause of purulent urethritis and Dr. Belfield has given a very clear account of the present state of our knowledge on this subject. He shows that other pyogenic organisms besides the gonococcus may give rise to a purulent urethritis; that there is also a non-bacterial venereal urethritis, perhaps from the gonococcus toxins or other toxins; and lastly, that there may be auto-infection of the urethra from colonies of bacteria in the recesses of the genital canal. Dr. J. C. Bloodgood of Baltimore contributes the section on Fractures, Dislocations, and Amputations. A valuable portion of this article is that dealing with emphysematous cellulitis, and details of 22 cases are given which show that on early diagnosis depends the possibility of a favourable result. Dr. Bloodgood urges that in any recent wound with infection, coverslip preparations should be made from the fluid in the wound. If the diagnosis is made early and the destruction of the softs parts above is not extensive, free incisions with immediate continuous bath treatment should be tried, and if the general symptoms of infection are not relieved amputation should be done at once. The article on Coxa Vara is exceedingly good. Dr. J. Rose Bradford has written on the Diseases of the Kidneys, and we may specially mention the article on Uræmia. Dr. A. P. Brubaker has contributed an account of the recent progress in Physiology and Dr. T. H. Gerrish has written on Anatomy. The latter article contains a most useful account of the principles of a reformed nomenclature in anatomy. Dr. H. B. Baker's paper on Hygiene is valuable, especially that part dealing with the etiology of rheumatism. Dr. E. Q. Thornton has collected in a Therapeutic Referendum a number of prescriptions and therapeutic notes on many diseases arranged in alphabetical order. The publication is likely to prove of value to all who wish to keep abreast of the incessant progress in various branches of medical science.

[1] THE LANCET, Sept. 22nd (p. 861) and 29th (p. 932), and Oct. 20th, 1900 (p. 1136).

NEW WORKHOUSE INFIRMARY, SKIPTON.—The formal opening of the new infirmary of the Skipton workhouse took place on Jan. 12th.

THE LANCET.

LONDON: SATURDAY, JANUARY 26, 1901.

The Death of the Queen.

QUEEN VICTORIA is dead. Her country and its vast dependencies are plunged in grief, while nations which owed her no allegiance and which bear no love for her subjects are moved to respectful sympathy. During the past weeks there were rumours abroad which hardly reached the general public that all was not well with Her Majesty, and those best informed were aware of her failing powers, but were loth to give currency to apprehensions that in the course of events might not have been justified. To the mass of her subjects the reports that first found their way into the newspapers on the afternoon of Friday, the 18th instant, came as a shock for which they were wholly unprepared. They had learnt to associate old age with their QUEEN and yet to forget that old age of all things cannot last for ever. They knew that less than a month ago she had been among the first to greet Lord ROBERTS on his return from South Africa, they had perhaps observed that she had since granted him a second audience, and if the matter had rested in their minds it had remained as an impression of the vitality of their aged monarch, a proof of the keen and critical interest taken by her in the affairs of her kingdom and of her personal solicitude for those who served her. Directly, however, the news circulated that the QUEEN was suffering, its gravity was fully appreciated, for the bulletins that were issued in rapid succession during the following days left little room for hope. The end has now come and the empire on which the sun never sets is vainly trying to realise its loss. QUEEN VICTORIA lived to a greater age than any other King or Queen of England, and for a greater number of years than any other King or Queen she has occupied the throne. These are matters of figures and statistics. It is a fact beyond statistics that she lived and reigned in the hearts of her subjects as no other monarch has done. During the whole of her reign she had their respect, their esteem, and their sympathy; but during the closing years of her life she held their love in an ever-increasing degree, until it can fairly be said that loyalty to the Crown was merged in deep personal affection for its wearer.

The enthusiastic greeting which she received in 1887 on the occasion of the jubilee of her reign was eclipsed by the heartiness and unanimity of goodwill that followed her through the great procession of 1897, and that acclaimed her name on that occasion wherever her subjects were to be found. It might have been thought that the devotion of her subjects had reached its highest point on that day of rejoicing, but such was not the case. QUEEN VICTORIA knew how to draw her people still closer to her. Affectionate respect for her as a good ruler and loyal admiration for her as the fitting centre of a great historical pageant were both to be reinforced by the deep love that is born only of close personal sympathy. The nation was tried by war and the heart of the QUEEN bled with the hearts of her people. Acquainted with grief, she set her subjects a magnificent example of fortitude; while her anxiety, not only for the national cause, but for the well-being of every man and every relative of every man on the battlefields of South Africa, knit the heart and brains of the empire into passionate patriotism and fervent devotion to her person. Of her own motion, prompted by no advice from her Ministers, she visited in 1900 the one portion of the United Kingdom the goodwill of which towards the Crown was not altogether beyond question; and in Ireland she met with an unrestrained expression of loyalty, while her visit left the world wondering at the energy and courage which prompted her to undertake so formidable a public duty at her advanced age. Such incidents, too, as her visit to Bristol had an effect far beyond the limits of the locality selected for honour. Moreover, Her Majesty during the past year when in London drove freely among her subjects, selecting streets not usually visited by her and giving sufficient notice of her intention to enable all who desired to be there to see her. And the crowds that availed themselves of the opportunity testified with one voice to their love. No doubt the South African war, both in its origin and its developments, has drawn the inhabitants of these islands and their fellow subjects beyond the seas closely together, but the predominating factor in this union has been the evoking of a common and wonderful loyalty towards the QUEEN, whose subjects, alas, they no longer are. That she should live to see the war concluded and peace in her dominions would have been the first wish uttered by all had it been realised that her end was drawing near, but

although this crowning pleasure was denied to her, it is impossible that she should not have felt and rejoiced in the boundless devotion which the sad necessity of a bloody war called forth from her people.

The reign of QUEEN VICTORIA has been a great reign as well as a long reign. She saw her subjects in the United Kingdom alone increase numerically from 25,650,000 to numbers which the coming census is likely to establish as well over 40,000,000, and she saw the increase of their material prosperity as well in nearly every part of the kingdom. She saw as the result of Parliamentary reform House of Commons after House of Commons, each equally loyal to herself and her Crown but each more truly representative of the people which under her it governed, each more active in framing equal laws, in bringing justice to the door of the lowliest, and in protecting rich and poor alike from oppression and wrong. She saw established a system of education which has placed within the reach of the children of her humblest subjects knowledge which in the early days of her reign was beyond even the rich, and she saw accompanying the growth of humanising influences the diminution of crime and the institution of more kindly laws for dealing with the criminal. She saw the disabilities placed upon some of her subjects owing to their religious beliefs removed and the advantages of the great universities thrown open to all; she was served by Roman Catholics and by Jews upon her Privy Council, she had one Roman Catholic as her Home Secretary and another as her Lord Chief Justice, and a strict member of the Hebrew faith as her Solicitor-General and her Master of the Rolls. The progress of science and of medicine were revealed to her in her legislative measures, for she gave her Royal assent in due course to laws which were the natural result of scientific discovery applied for the preservation and protection of her subjects' health by means undreamt of when she ascended the throne.

If the changes that QUEEN VICTORIA witnessed at home were in the nature of peaceful revolutions she endured full measure of anxiety as a sovereign in the contemplation of foreign affairs. At every period of her reign—in Europe, in Asia, in Africa—her armies were engaged in struggles more than one of which might have resulted in national calamity, and she felt the strain of such crises even in the last years of her long life. Let us hope that such anxiety may have had its compensations, for Her Majesty saw her colonies increasing beyond the anticipations of the most sanguine prophecy, while she felt in the last years of her life the strength of their support and the overflowing warmth of their devotion to her person. And in all events during the 63 years of her reign QUEEN VICTORIA so bore herself that she was Queen in deed as well as in name. Her influence was felt in every part of her dominions with authority, notwithstanding the fact that she was never in collision with the will of her Ministers or of those whom her people elected to represent them in the carrying on of the Government. The thoughtful among her people have recognised, and will no doubt realise more fully as time goes on, the great political power of her venerable personality in the international episodes that at different times have threatened the continuity of peace in Europe.

More fully and more generally have they recognised the force of her personality in their homes. As the central figure in a court that has been dignified without austerity, as a wife, as a widow, as a mother, and as a grandmother, she has been watched by her subjects closely and accepted as a perfect type. In their QUEEN the English nation have had an example of domestic virtue which has had an influence upon social life not easy to limit or define. It has been an influence felt from the highest to the lowest, the extent of which even those subject to it may never have acknowledged. In hundreds of thousands of the humblest homes in the United Kingdom and in the colonies the portrait of QUEEN VICTORIA hangs, and in every one of those homes little children have been taught, and will be taught, for generations to revere her name not only as that of a great Queen, but as that of a good Queen. No one can estimate to what extent the beautiful private life of the QUEEN may have benefited the world by thus setting before it a conspicuous example of right living and right thinking.

To the PRINCE who succeeds to the vacant throne and to every member of the Royal Family of which QUEEN VICTORIA was the head we tender our respectful sympathy, as do all her bereaved subjects. We tender it to her sons and her daughters and to all those of her younger descendants, to whom throughout their lives she will be an example. It must be some consolation to them to know the heartfelt sorrow with which millions in all parts of the globe mourn for the QUEEN who has found her well-earned rest. They can rely upon the sincerity of the expressions of sympathy that are reaching them on every side. There is no lip-service in the universal mourning for QUEEN VICTORIA. The world weeps.

Reciprocity in Medical Practice.

THEORETICALLY we are all in favour of reciprocity between countries in the recognition of medical qualifications; but practically the realisation seems impossible. Two pamphlets lie before us, by Dr. EMIL AMBERG of Detroit, Michigan, which give a very interesting account of the position in the United States as to the recognition of the qualifications of one State by the medical authorities of another. It may seem to us now in the United Kingdom very curious to find one American State looking on the qualifications of a neighbouring American State as foreign diplomas and exacting from their possessor, wishing to practise, subjection to a fresh examination; and this, though it may be a matter of notoriety that the standard of examination for the diplomas which the stranger has is infinitely higher than that for the diplomas of the State in which he seeks the right to practise. But it is little more than 40 years since the medical authorities of one division of the United Kingdom looked with as much jealousy and disparagement on the diplomas of another division as if they were altogether foreign diplomas. The Act of 1858 abolished this discreditable limitation of qualification among us, and laid the foundations of a better understanding between the members of a great liberal profession and of a higher general standard of medical education throughout the country. Theoretically, we repeat, this principle is one that must have an ever-extending application. As the commerce of the world increases, as the languages of different nations become better understood, as civilisation and all its amenities extend, the recognition of scientific and professional accomplishment must have a wider and more generous recognition. But as yet the practical difficulties are immense, and the two pamphlets before us by Dr. AMBERG, describing the dissensions of the States in America, show us why the progress of this principle is so slow. Whatever the difficulties of international reciprocity we should expect none to be insuperable in the case of the citizens of one country, yet the holder of the licence of the Medical Board of one State in America is regarded in most of the other States as an unqualified practitioner and perhaps taxed, as an "itinerant physician," $50 per annum, as in the Territory of Alaska. The cause is not far to seek and the study of it will help us to see the practical reasons which ought to make every country careful not to settle so difficult a matter on merely sentimental grounds.

The great object of legislation in regard to medical qualifications in all countries is to secure competency in those who receive licences to practise. The only way to attain this security is by regulating the number of bodies having the power to grant qualifications, by depriving them of excuses for competing downwards in such work, and by supervising the work that they do with competent and independent inspection. The multiplication of medical colleges and corporations with power to grant licences, beyond all inspection and control by a supervising or central body, is the sure way to lower standards and to retard and to degrade medical education at the expense of the public. This is the unhappy state of matters in the United States which constitutes almost the despair of those responsible for American medical education, than whom there are none in the world more anxious to promote the advance of medical science in the interest of the people. The United States have a population of nearly 70,000,000 and their medical schools multiply like mushrooms. There are no less than 156 medical colleges, with 24,119 students, providing in the populated parts of the country a medical man to every 600 of the population. In addition to the colleges which, whatever their standard, do aim at a proper professional education, there are at the present moment in Chicago, and probably in other parts, institutions for the sale of bogus diplomas. Communications on this subject were made to the last meeting of the General Medical Council by the Privy Council, and the authorities in Chicago are doing their best to exterminate such institutions. But they exist, and the existence of them is frequently referred to by Dr. AMBERG or his correspondents. And the majority of the genuine medical schools are unsatisfactory. Most of them are private institutions in which the teaching is very inefficient. Boards, State and Territorial, are supposed to control their work by holding examinations, but, according to Dr. AMBERG and the universal testimony of all serious medical teachers in the principal States, this control is inefficient. The curriculum of one State differs from that of another as the standard of medical examination does, and, worst of all perhaps, there is a wide variety in the demand of different colleges in the matter of the preliminary education of their students. All this is matter of common knowledge and admission, but it is brought to light very fully in the pamphlets of Dr. AMBERG. His object has been to promote inter-State reciprocity so far as is consistent with the interest of the public, and especially so by stimulating the members of the profession in the various States to work for this purpose with the National Confederation of State Medical Examining and Licensing Boards. To this end he has put himself into communication with the profession and with the authorities intrusted with carrying out the rules governing the practice of medicine in the different political divisions. The answers of these authorities show that they are generally in favour of reciprocity but are afraid of its application while the conditions of medical qualification in the different States are so various and so unsatisfactory.

We heartily sympathise with Dr. AMBERG and his many earnest colleagues in their desire for such legislation as will give uniformity and efficiency to medical education in the United States and so will pave the way for abolishing all territorial limitations of qualifications. It would, of course, be well if the States that have inferior medical schools and examinations would recognise without reciprocity the diplomas of those States that are more exacting, while private schools granting degrees and diplomas, even if their attempt to maintain a decent standard seems genuine, had better be suppressed. The lesson to be drawn by us from the transatlantic position is obvious, for the difficulties so strikingly exhibited in regard to inter-State reciprocity are only an illustration of the larger difficulties of international reciprocity. Where there is no power of controlling medical

education or of inspecting medical examinations reciprocity is open to the greatest objections, which will become more and more apparent when the experiment comes to be tried. It is to be hoped that the Government of this country will not proceed too rapidly in this direction, or, indeed, proceed at all, without taking the General Medical Council into consultation as to the practical difficulties to be encountered.

The Indian and Colonial Addendum to the British Pharmacopœia.

IN the recognition of the employment of different drugs in different parts of the British Empire it might at first be considered that a retrograde step had been taken; in reality, however, it will be found that there is a distinct advantage in collecting in one official standard all that concerns the drugs likely to be employed by British subjects wherever located. The publication of the Indian and Colonial Addendum to the British Pharmacopœia shows clearly the trend of thought during the latter part of the last century and affords another hopeful sign for the future unification of our Empire. Of late years there have been many indications of an increasing attention to medical matters connected with distant parts of the Empire. Even before the anxieties in South Africa absorbed so much thought and energy there had been a wave of interest in tropical medicine from which certain hopeful results have already been obtained. It had been recognised that local study in our colonies and at the seats of different endemics might enlarge our conceptions of disease and that some preparation at home might facilitate such work. Meanwhile there were not wanting rumours to show that those responsible for the compilation of the British Pharmacopœia hoped to do their part towards welding together the colonies and dependencies by supplying information relating to the modifications of treatment which are frequently necessitated by local conditions.

The growth of the Pharmacopœia throws an interesting sidelight upon the history of medicine during the century, since it shows an increasing tendency to obliterate the local peculiarities of practice which formerly did much to hamper progress. The first step was the fusion of the different Pharmacopœias which were previously in use in England, in Scotland, and in Ireland, and the production of the British Pharmacopœia of 1864. Twenty years earlier a Bengal Pharmacopœia had been issued in Calcutta by order of the Government, and it was perhaps in relation to this work that in 1867 the preface to the new British Pharmacopœia stated that it was intended to afford to the members of the medical profession and those engaged in the preparation of medicines throughout the British Empire one uniform standard and guide whereby the nature and composition of substances to be used in medicine might be ascertained and determined. Although the Imperial scope was aimed at in 1867, this failed to afford universal satisfaction, since in 1868 a Pharmacopœia of India was prepared under the authority of Her Majesty's Secretary of State for India; this was edited by Dr. E. J. WARING, assisted by a committee appointed for the purpose. This book was avowedly based upon the British Pharmacopœia, and while affording all the information contained in that work which might be of practical use in India it combined with it certain supplementary matter intended to meet the requirements of the Indian Medical Department. One of the primary objects was the introduction of the indigenous products of India into European practice in that country; this was facilitated by the inclusion of much information relating to their medical properties and therapeutic uses. This work is practically the origin whence the present Indian and Colonial Addendum has developed, since it suggests that India yields efficient substitutes for some of the drugs which are in the British Pharmacopœia, while it speaks of the advantages of employing remedies which are at hand in the remotest corners of the Indian Empire, so that India may be to a certain extent independent of "costly imported articles." So far as India was concerned the protest made in 1868 by Dr. WARING'S Committee against the limitations of the British Pharmacopœia took this form. Some official drugs were not obtainable in India, some could not be imported, and for both classes there were efficient substitutes of native growth. What was true for India held good for many of the colonies, but in Canada the need of local modifications was rendered more urgent on account of the existence of the United States Pharmacopœia, which was to a certain extent a source of difficulty if not of danger. The difficulties arose from the dread of confusing the two standards, since there were differences in the percentage composition of many articles which bore the same name, and the dispenser might not uncommonly be in some doubt as to the intention of the prescriber. These details were obviously kept in view during the preparation of the British Pharmacopœia of 1898 which exhibited a marked attempt to secure greater uniformity in the standards of purity and a gradual approximation of pharmaceutical processes. The adjustment of differences will, however, require much greater interchange of opinion, and meanwhile the influence of American practice on medical work in Canada is sufficient to warrant the inclusion of several new drugs and preparations in an addendum of Imperial scope.

The idea of strengthening the bond of union between different parts of the Empire has long attracted the Pharmacopœia Committee of the General Medical Council. The late Sir RICHARD QUAIN took a deep interest in the subject and initiated many of the inquiries in the earlier stages. It was at one time hoped that the results might be incorporated in the issue of 1898, but this would have entailed delay and although numerous modifications were then recognised from tropical countries the introduction of new remedies was postponed. The late Dr. LEECH, who succeeded Sir RICHARD QUAIN as chairman of the Pharmacopœia Committee, extended the inquiries, formed a collection of Indian and colonial drugs, and performed numerous experiments, especially with mylabris, the beetle suggested as a substitute for cantharis. The work was far advanced at the time of his death, and the value of his share in it received touching recognition both in the preface to the Addendum and in the report of the Pharmacopœia Committee of the General Medical Council. Dr. LEECH was followed as chairman of the Pharmacopœia Committee by Dr. DONALD MACALISTER who threw himself into the task with so much energy that no delay in

publication resulted. It is impossible to mention all who have contributed to the issue of the Addendum. Various administrative bodies in India and the Colonies have, through Her Majesty's Privy Council, the India Office, and the Colonial Office, afforded valuable information which has been collated by the editor, Dr. JOHN ATTFIELD, who has shown discrimination and untiring labour in the editorial function. Dr. ATTFIELD has received much help on questions of pharmaceutical botany from Mr. W. KIRKBY of Manchester and Mr. E. M. HOLMES of the Pharmaceutical Society. The general supervision of the work has been in the hands of a committee of the General Medical Council, with the assistance of Dr. NESTOR TIRARD as secretary. All these gentlemen may well be proud of the result of their work.

Annotations.

"Ne quid nimis."

TEMPERANCE IN THE ARMY

THE prevalence of intemperance in the army, still an unfortunate fact, has lately occupied a place of more than its usual prominence in the columns of the daily press. One writer on this subject reminds us that there are over 100 licensed houses of one kind or other in Aldershot alone, almost all of which have been established since the camp was formed there. He strongly protests against a similar liberality in the granting of licences in other and newer military centres, and he advocates, wherever possible, a reduction in the excessive number of those already issued. He would encourage the growth of restaurants where first-class refreshments might be obtained but not alcohol, and he would have the barrack recreation-room develop into an institution really worthy of its name which at present it is not. These very sensible observations are fully endorsed by another writer who is also evidently conversant with the soldier's needs and his temptations. His suggestions as to the improvement of the recreation-rooms are highly practical. They provide for entertainments, for a spacious bar where beer can be sold, for a temperance refreshment-room, and for a reading-room—in fact, for a soldiers' club. He recognises that the great majority of young soldiers are disposed to be temperate and would remain so with a little judicious assistance of the kind above indicated. He condemns the present canteen system as antiquated and essentially mischievous and would have it abolished. He argues that any small additional expense incurred by the substitution for it of the proposed club would be fully repaid by the elevation of the whole tone of barrack life and the restoration to civil duties after their term of military service of a greater number of men who have not learned intemperance in the army. It is highly satisfactory to find that those who know the soldier best, from the Commander-in-Chief down, are thus willing to do battle with and for him against that vice which is truly his worst enemy. The balance of public opinion will certainly be found on the same side. Any rational scheme which will promote his sobriety may, we are assured, rely on the approval and support of the great majority of his fellow-countrymen.

THE TEACHING OF SCIENCE.

A DISCUSSION of the best methods of instilling a knowledge of natural science into the youthful mind is certain to be productive of good. There is much to be said against the present methods of education in regard to its scientific side. Unfortunately, an examination is regarded as a criterion of knowledge and so instruction is based upon the mere requirements of the examiner's sheet. What we want our teachers to understand is that the pupil does not so much want loading with facts as to have his faculty trained in the direction of extending his own powers of observation, so that later he may be able steadily and easily to acquire facts for himself. A movement is steadily gaining ground in this country which is directed towards improving our methods of scientific education so that eventually scientific knowledge may be more extensively applied to our industries. There can be no doubt that both the Germans and Americans where they outstrip us in the industrial race do so because they are alive to the importance of applying scientific knowledge to practical industry. As an inventive nation we hold the first place, but our inventions have been utilised almost wholly by other nations. As examples we may quote the great German aniline industry and the American industry for the manufacture of electric appliances. These and other subjects have been discussed during the past few days at a conference of science masters in public schools which was held in the rooms of the University of London at South Kensington. It is to be hoped that discussions of this kind will result in a better system of teaching science in our public schools for the sake of the industrial prosperity of the country.

WHAT IS "COGNAC BRANDY"?

IT is usually as a matter of chance that trade tricks and facts about adulteration come to the knowledge of the general public. The spread of knowledge as to the various substances from which beer is usually brewed forms a case in point. Some interesting information has lately been given at Dublin concerning the usual composition of brandy. A Kingstown grocer has just obtained damages from a firm of London merchants for supplying him with cognac brandy which was not of the quality that he ordered. The plaintiff stated that the spirit which had been supplied to him was unsaleable, and that one customer had returned a bottle with the complaint that he had been inadvertently supplied with benzoline. This was doubtless a pleasantry on his part, for Professor Tichborne gave evidence to the effect that the liquor was "patent stilled spirit." We must in fairness state briefly the defence which was set up. It appears to have been in part technical—that there was no contract, that the defendants had received no money, that no warranty was given, and that the brandy mentioned in the statement of claim was not that supplied by the defendants to the plaintiff. The most instructive part of the defence was contained in the evidence given by one of the defendants. He said that the liquor supplied was foreign brandy and was distilled in part from grape juice. In the trade it was called "cognac," but cognac made from Cognac grapes exclusively "did not exist on the market," and the cost price of it would be about 7*s*. per bottle. The jury found that the defendants had contracted to supply "cognac brandy, which is a blend containing a proportion of grape spirit," and that the liquor which they supplied was neither brandy nor what is known in the trade as "cognac brandy." The evidence given in this case is not very reassuring. According to the definition accepted or given by the jury cognac brandy is said to be a blend which must contain at least some grape spirit, but it does not appear to matter how small the proportion of this may be. There is no doubt that it has of late years been increasingly difficult to obtain good brandy, and for this reason, amongst others, whisky has in this country largely taken its place.

If the late Mr. Pickwick were to revisit his old haunts he would perhaps be more surprised at this than at the other changes which would force themselves on his notice. It ought, however, to be thoroughly understood that whisky cannot properly be substituted for brandy in all cases. Fine brandy contains in addition to alcohol a number of highly volatile ethers which have a strongly stimulating effect and which are eliminated without any known ill-effects and without causing the slightest derangement to the digestive system. It is much to be regretted that the *fin champagne* which was sent from France till about the year 1870 is now practically unobtainable. These liquors were not only pleasant to the cultivated palate, but, given judiciously, were most useful in many cases of sickness. Unfortunately nothing has yet taken their place. Readers who habitually follow the results obtained in our Analytical Laboratory will have noticed that our consulting chemist has often found reason to praise samples of brandy which have come from some of the English colonies. Analysis has more than once pointed to the inference that the spirit has been derived from grapes, but in practically all cases there has been a deficiency in the œnanthic ethers which are the life and soul of the ideal brandy.

EGYPTIAN VITAL STATISTICS.

IN the third and concluding part of the third fascicle of his work dealing with Egyptian vital statistics, including climate and meteorology, Dr. Engel Bey treats of mortality above the age of five years, and prefaces his remarks with the following interesting table:—

Annual Death-rate according to Age per 1000 living in each Class.

Name of city.	Cairo.	Alexandria.	Damietta.	London.	Berlin.	Paris.	Vienna.	Munich.	Moscow.
Period.	1889–90.	89–90.	86–90.	81–90.	90–91.	89–81.	90–91.	90–91.	81–83.
Years.									
0 to 5 ...	145·0	130·5	62·9	68·2	104·7	119·2	119·3	157·2	275·2
0 „ 10 ...	90·2	86·7	35·3	39·1	59·9	63·6	68·3	87·8	156·3
5 „ 10 ...	10·3	10·1	7·1	5·9	6·0	10·2	8·4	8·5	17·7
10 „ 20 ...	9·1	8·5	3·8	3·3	3·1	8·0	5·7	3·6	7·2
20 „ 40 ...	13·8	11·6	?	8·6	7·0	13·2	10·3	7·6	13·3
40 „ 60 ...	24·4	24·2	?	26·0	16·7	22·0	20·2	18·4	28·2
60 „ *x* ...	109·5	116·4	?	91·9	63·4	67·7	67·4	70·9	78·3
0 „ *x* ...	39·9	39·0	25·6	20·3	21·2	25·6	25·6	26·9	34·7

In London the higher age-groups should be as follows: 20 to 45, 45 to 65, 65 to *x*. In Moscow when the deaths of foundlings are eliminated the rate for children under five years of age falls to 191·8. In the Damietta column the information is only partially forthcoming, probably on account of a typographical error, but from the figures that appear it is evident that the ancient Nilotic seaport still maintains its character for salubrity. In this connexion our readers will no doubt remember some articles which we published a few years ago[1] in which the superior healthiness of Damietta and Rosetta was ascribed to the fact that the inhabitants could not drink Nile water when the river ran low because it then became salt from admixture with the sea. They were perforce compelled to depend on a supply stored in *sahariqs* or tanks when the Nile was in flood and when its waters were consequently still pure from a potable point of view. On this subject the following remarks of Dr. Engel in his present essay are noteworthy, for hitherto he has not formally incriminated the water-supply of Egypt. "While fully admitting the influence of heat and humidity on the organs of digestion we cannot doubt, I think, that abscess of the liver and dysentery as well as the gastro-enterites that so frequently are met with must be caused in part by the bad quality of the water—the Nile water—in the canals and wells which everywhere is polluted but not at all or only badly filtered. We must also hold the water-supply responsible as the main cause of the typhoid fever which is relatively so widespread amongst foreigners, the milk for consumption becoming infected through the water used for diluting it or for washing the vessels in which it is kept." In a general survey of his subject Dr. Engel concludes that so far as the native population of Egypt is concerned the mortality in all the age-groups above infancy is considerably higher than is that prevailing in Europe, but that amongst foreigners the limits of the latter are not exceeded. It is the Egyptian infant alone who survives in accordance with the Western scale, this happy result being due to the suckling of their offspring which is invariably practised by native mothers. Amongst children aged more than five years and adults up to 60 years the chief causes of death are phthisis pulmonalis, "typhic" fevers, dysentery, and affections of the thoracic organs. Above 60 years of age debility enters once more upon the scene as a frequent cause of death, carrying off the old people as effectually as the newly-born. Dysentery and respiratory troubles come next in order as prolific sources of mortality amongst the aged. As regards dysentery it is probable that other affections, such as enteritis and diarrhœa, are sometimes mistaken for it, but Dr. Engel is satisfied that the true disease is endemic in the Nile valley, being disseminated by means of drinking-water. Dr. Engel is also convinced of the occurrence of typhoid fever in native patients, a fact which he says has been disputed. That the affection is to be met with amongst European residents and visitors is unfortunately not open to doubt, although, happily, its ravages of late have been far less deadly than they were during the early years of our occupation. The usual number of deaths from violence in European centres, whether due to accident or to crime, is stated by Dr. Engel to vary annually between four and seven per 10,000 inhabitants, but in Egypt during the four years 1887–90 the average was 4·7, made up as follows:—accident, 4·0; crime, 0·66; suicide, 0·04. In Lower Egypt during this quadrennial period the suicides numbered 55 in all, or less than 14 per annum, but only 30 per cent. of the cases were indigenous. In Upper Egypt not a single case of suicide occurred.

[1] THE LANCET, Sept. 9th (p. 643) and Nov. 18th (p. 1274), 1893; and April 28th, 1894 (p. 1088).

THE WILL OF A GOOD PHYSICIAN.

THE will of the late Sir Henry Acland is interesting from its being the testament of one who was notable in many ways. Its concluding clause is as follows:—

"And now, with a deep sense of the mercy and goodness of God to me and mine through parents, children, and friends and by the saintly life of my dear wife gone before, I commit my soul to my Heavenly Father in the faith and love of Christ and hope for forgiveness of my shortcomings in my holy profession, and I pray that the faithful study of all nature may in Oxford and elsewhere lead men to the knowledge and love of God, to faith and to charity, and to the further prevention and relief of the bodily and mental sufferings of all races of mankind."

"In Oxford and elsewhere." The phrase is very characteristic of one whose life and thoughts were bound up with the ancient University and city by the Isis. One memorial of Acland's wish to perpetuate the connexion of Nature and Oxford exists in the Museum—a bible in stone devised by him in company with Ruskin as part of a plan to represent the Kosmos, the whole orderly creation,

in such a way as to make it intelligible to the student. Another clause in the will was to the effect that all his papers relating to his profession as a physician should be destroyed unread. This clause, while showing the deep reverence for his profession and for the duties which it imposed upon him which Sir Henry Acland felt, may be thought to be excessive in its observance of the Hippocratic oath. Some will hold that such clinical records might surely have been preserved, that accumulated evidence gathered together by a keen observer might be handed down for the benefit of future generations. But the clause shows the proper as well as honourable feeling which was characteristic of him who wrote it. No information which he had received in confidence could be imparted to another, however discreet. He alone could edit his clinical records, and this he did not do. It is not everyone who sees how strictly private such notes must be and how imperative it is that discretion should be used by those designing to publish any part of them. Not very long ago we had to comment adversely upon the incident of the sale of a number of hospital case-books after the death of a medical man who had held the post of physician to the Hospital for Women, Soho-square.[1] Such a gross breach of trust and of decorum could never have occurred if anyone had been on the managing staff of the hospital in question with Acland's nice sense of the duty of secrecy owed by the medical man to his patients.

PHARMACEUTICAL NOTES FROM THE WELLCOME CHEMICAL RESEARCH LABORATORIES.

FROM time to time reports are issued from the Wellcome Chemical Laboratories giving the results of the investigations into pharmaceutical questions undertaken at the instruction of the directors. Amongst recent publications of this kind we notice a contribution to the pharmacognosy of official strophanthus seed. As is well known, this drug possesses an interesting history. The plant was discovered in 1861 by Sir John Kirk, whose attention was drawn to it by its poisonous properties, the plant being the basis of the Kombè poison. According to recent inquiry it would appear that every histological character upon which the identification of the different varieties of Kombè seeds has hitherto been based is found almost without exception to exist in seeds obtained from one and the same pod. Previous histological conclusions, therefore, must be abandoned, as they were in favour of the identification of different varieties based upon distinctions no longer held to exist. Another interesting communication from the same laboratories relates to the composition of berberine phosphate. Pure berberine phosphate was obtained by acting upon berberine acetone with an excess of phosphoric acid and re-crystallising the product. The salt thus obtained was of a bright yellow colour and showed a composition in accordance with the formula $C_{20}H_{17}NO_4(H_3PO_4)_7$ with varying amounts of water of crystallisation. The same salt may be obtained by acting upon berberine sulphate with acid calcium phosphate. The preparation of mercurous iodide forms a subject of another note. The results show that mercurous iodide prepared by precipitation is quite uniform in composition and is sufficiently stable when properly protected. As is well known mercurous iodide is commonly prepared by triturating mercury with iodine, the final product invariably containing free mercury; and thus it is important to decide whether such a preparation, containing more or less free mercury, is preferable to the pure salt for medicinal use. The facts now available, however, are in favour of the pure yellow iodide being generally adopted. This interesting and instructive series of contributions is accompanied by some observations and suggestions relating to the chemistry of the British Pharmacopœia by the director of the laboratories.

[1] THE LANCET, April 8th, 1899, p. 976.

THE LANCET RELIEF FUND.

OWING to the absence from town of some of the almoners and the temporary indisposition of Sir Henry Pitman, the auditor, the annual meeting of THE LANCET Relief Fund was not held as customary upon the first Monday of the present month. The meeting will now take place on Monday, Feb. 11th. The report and balance-sheet will be published in the following issue of THE LANCET.

LEAD-POISONING.

IT is interesting to learn from the leading representatives of the china manufacturers in this country that they are quite willing to adopt fritted glazes in the manufacture of china ware. At the same time it is to be expected that the trade generally are averse to the elimination of lead altogether for the purpose. We have already pointed out that the adoption of fritted glazes would be just as satisfactory a solution of the lead-poisoning problem as the adoption of glazes containing no lead at all. We still, however, keep to the belief that as experience is gained leadless glaze will be found to be a perfectly satisfactory substitute. It must be remembered that the application of leadless glazes is quite in its infant stage. The opinion of experienced masters of such an old and beautiful industry as the manufacture of china must be respected. They alone know the practical difficulties presented by such a drastic change as the exclusion of lead altogether for the purpose of glazing ware. Nevertheless, we know that the industry has given rise to grievous injury to health to those engaged in it, and from this point of view the subject must be approached seriously, even if it mean the condemnation of the use of lead in pottery manufacture. We believe that the compulsory employment of "frits" is a remedy which will appeal both to the practical potter and to his employé. The adoption of leadless glaze would be quite safe to the latter, though it undoubtedly would seriously affect the interests of the former.

NEW YORK ACADEMY OF MEDICINE: REPORT OF THE LIBRARY COMMITTEE.

THE report of the Library Committee of the New York Academy of Medicine states that on Nov. 30th, 1900, the number of volumes in the library was 89,000, including 36,105 duplicates. The books added during the year, not including duplicates, numbered 3649 volumes. In the circulating department 871 books and 832 journals were issued to 194 readers. 11,520 readers have registered during the year in the reading-room, and probably many others have used the library but have not registered. The library is growing rapidly, the additions annually for the last four years being at least 3500 volumes a year. In 1898, when the library of the New York Hospital was given to the Academy, 7000 volumes were added without including duplicates. 991 journals in many languages are on file and added 1135 bound volumes to the shelves during 1900. Including the duplicates the natural growth amounts to about 5000 volumes, and at this rate there is only space left for five years more. More space for the library is urgently needed and it will be difficult to find this space in the present building. At present there are 13 430 feet of shelving available, of which less than 3000 feet are unoccupied, and 600 feet of shelving are needed annually for the natural growth in new books. The labour of taking charge of this large collection of books will require an increase in the

librarian's staff this coming year. More money is urgently needed, both for the purchase of books and for the running expenses. Truly "of making many books there is no end." The cry for more room is universal throughout the libraries of the world, and the output of books increases day by day. Especially is this the case with medical literature, and the United States are more prolific in this direction than any country. The subdivision of subject-matter has made the old text-book of medicine give place to elaborate "systems," published in 10 volumes or so, or else we have fully and carefully written monographs upon one disease. The mere literature of the youngest daughter of medical science—namely, bacteriology—almost requires a library of its own, and as for periodical literature, medical journals and magazines are showered abroad like the leaves in autumn. In many of these there is doubtless a great deal of chaff to very little wheat and as no library is capable of indefinite extension some process of exclusion will before long become inevitable.

THE EXTENSION OF THE BOROUGH OF WORTHING.

THE growth of our urban, and the depopulation of our rural, districts is one of the greatest problems of modern life, and the exceptions to this rule are often more apparent than real. As a matter of fact, however, in the proximity of our large towns the rural districts in no sense suffer from depopulation, and vigorous efforts are sometimes required to prevent the population from being distributed in a manner inconsistent with healthy urban conditions. There must obviously be some limitation to the aggregation of population which can be properly administered from one centre by one administrative body, and perhaps in certain cities in the world such limitations have already been reached. But, conversely, there are obviously great disadvantages, more particularly from a public health standpoint, in the several parts of what is structurally a single town being administered by multiple authorities. This phase appears to have been already reached in Worthing, a considerable portion of which town is situated outside the borough proper, and in the rural parishes of West Tarring and Broadwater. Originally the villages bearing these names were separated from the town of Worthing by a stretch of open country, but the increased population has resulted in covering the area with habitations, and Worthing is now seeking powers to embrace both parishes within its limits. The general merits or demerits of the proposal will doubtless soon be fought out by means of a public local inquiry, but from our point of view, that of the public health, there are sundry reasons which must be held strongly to support the consolidation scheme. The rural district council administering the affairs of what may be termed the towns of West Tarring and Broadwater are hardly likely to pay as much attention to these two parishes of the rural district as their importance demands. Indeed, rumour has it that at times meetings of the rural district council are so poorly attended that a quorum is not forthcoming. Moreover, the fact that the offices of surveyor and inspector of nuisances are occupied by one and the same individual is sufficient to indicate that no very adequate supervision can be maintained over the erection of new buildings and the sanitary condition of old buildings, and we should not be surprised to hear that the roads and footpaths are not quite up to urban standard and that the lighting is bad. Houses, too, which are within a few feet of the sewers are said not to have been connected with the sewers owing to the absence of proper administrative action. As regards the control of infectious diseases the people of the rural parishes seem to be dependent upon the goodwill of Worthing; and it is, perhaps, in accordance with civic nature that Worthing should give preference to the infectious sick of its own district. In all these directions, as, indeed, in many others, there would seem to be advantage in the extension of the borough in such fashion as to focus the control of infectious diseases, the water-supply, the sewerage, and the household drainage, while in the matter of the investigation of outbreaks of disease, whether water-borne or not, the concentration of the notifications into one office cannot fail to be of value. We expect that these facts will have some influence with the Local Government Board in their determination.

MR. SAM LEWIS'S BEQUESTS TO CHARITY.

WE are happy to learn that general and medical charities will benefit largely under the will of the late Mr. Sam Lewis. The Prince of Wales's Hospital Fund for London will eventually receive a quarter of a million from the estate of the deceased money-lender, and many of the principal metropolitan hospitals have also a separate interest in the future disposition of his enormous wealth. Mr. Sam Lewis was a remarkable man. He was a usurer who conducted his business with such scrupulous honesty that he gained the real regard of his clients. Money-lending must always be a nasty trade, for it thrives on the failings of the weaker section of society and cannot allow scope for much kindness of heart. A money-lender who was moved to disregard business precautions out of sympathy with his clients' stories would in a few hours have no money to lend. Mr. Sam Lewis did his best to show that usury can be run on fair lines. He took large risks and exacted large profits, and the value of his estate shows that he neglected no means to ensure these profits accruing to him. But he received only what he compounded to receive. And in his disposition of his property he has displayed the generosity which he was obliged to suppress in his purely business relations.

ARSENIC IN BEER.

THE Manchester and Salford Trades and Labour Council at a meeting last week passed the following resolution:—

"That, in view of the serious consequences which have resulted from the sale of unwholesome and poisonous beer, this council is of opinion that it is absolutely essential, in the interests of the public, that the Government should at the earliest possible moment promote such measures in Parliament as will ensure that only pure and wholesome beer shall in future be sold to the public throughout the country. This council is further of opinion that as the health and lives of the public are involved in this question it is the duty of the Government to proceed with legislation at once upon the subject, without waiting for any report of any Royal Commission, as there is already ample evidence that very many people have of late been injured and a number killed through drinking poisoned beer, and the protection of the public demands immediate legislation without the delay which attends the proceedings of a Royal Commission."

This is exactly the view which we expressed in a leading article last week and we heartily congratulate the Manchester and Salford Trades and Labour Council on their admirable and sensible resolution. We have already pointed out that the use of malt substitutes is more a matter of expediency than economy. Indeed, as is pointed out in a letter in the *Times* of Jan. 22nd by Sir Walter Greene, who has had a large experience of practical brewing, it would appear that invert sugar may cost nearly 1s. per quarter more than barley malt. Whatever the economic considerations may be, the introduction of arsenic into beer must be effectually stopped. The inquiry at Manchester was concluded this week and the verdict is a comprehensive censure on all those concerned. The jury agreed that death had been caused by arsenical poisoning

and they returned an open verdict with a rider censuring brewers, sulphuric acid makers, and chemists alike for carelessness. The reports from the medical officers of health of the counties affected by the epidemic are coming to hand. We have received that of Dr. G. Reid, medical officer of health of the county of Stafford. According to this report 667 cases were traced to arsenical beer poisoning and these had occurred in 25 districts. The report is accompanied by a statement of the county analyst, Mr. E. W. T. Jones, who found that of 140 samples of beer analysed 15 were decidedly arsenical and seven slightly so. We note with satisfaction that the machinery provided by the Sale of Food and Drugs Act is being set in motion and followed by reports of successful prosecutions on all sides. What purpose is served by waiting for the ponderous proceedings of a Royal Commission?

THE SANITARY INSTITUTE LECTURES.

THE thirty-first course of lectures, with demonstrations, for sanitary officers will be delivered during February, March, and April next at the Parkes Museum, Regent-street, W. In the syllabus it is announced that Dr. E. J. Steegmann will deal with Mechanical Physics on Feb. 1st, 4th, and 6th, while Dr. J. Priestley will discourse on Sanitary Law on Feb. 8th, 12th, 14th and 15th. Dr. H. R. Kenwood will take for his subjects "Infectious Diseases," "Methods of Disinfection," "Water Pollution and Purification," and "Elementary Statistics" on Feb. 25th and 27th and March 1st and 4th respectively. The Signs in Health and Disease in Animals Destined for Food will be considered by Mr. W. Hunting, F.R.C.V.S., on March 29th. Dr. E. Petronell Manby will lecture on the Appearance and Character of Fresh Animal and Vegetable Foods, dealing at the same time with methods of preservation, on April 15th. Among the inspections and demonstrations in connexion with this course Mr. A. E. Harris will conduct a party over the disinfecting station at Islington on March 2nd and Mr. James King, M.R.C.V.S., will give a demonstration at the Metropolitan Cattle Market on April 15th.

THE SCOTTISH POOR-LAW MEDICAL OFFICERS' ASSOCIATION.

THE annual report of this association, which we published in THE LANCET of Jan. 19th (p. 204), affords proof that the members are alive to the necessity of united and energetic action in order to accomplish a real reform, or, indeed, any improvement at all, in the terms and character of Poor-law medical work in Scotland. It is especially satisfactory to note that they realise that the fundamental condition of all such improvement is some legal assurance of security of tenure of office. So long as Scottish Poor-law medical officers are liable to dismissal for no assigned reason, on the action of a section of the parish council, and possibly for faithfulness in the discharge of their official duties, so long is it vain to expect any energetic or effective agitation for the removal of grievances. The report tells us that the finding of the Committee that the initial step in reform must be the securing fixity of official tenure has not given universal satisfaction to members of the association in the Highlands and islands. But members in remote parts will do well to trust those more centrally placed as to the best means of securing the ends which all have in view. Inadequate salaries, inadequate holidays, and the withholding of the whole or part of special fees are some of the special grievances which call for urgent redress. Some of these practices are inconsistent with the existing law and official rules for the guidance of parish councils and could not resist the earnest protest of a united and independent profession. Unfortunately the profession is not independent, and least of all in the very remote parts where grievances are most glaring and acute. We counsel unanimity in the support of the association, especially in its efforts to secure protection to medical officers against all capricious and unreasonable dismissals. When this reform is obtained others will follow. No time should be lost if anything effective is to be done in the coming session of Parliament.

CONGENITAL TYPHOID INFECTION.

IN the *Journal of the American Medical Association* of Dec. 29th, 1900, Dr. George Blumer relates a rare and important case of typhoid hæmorrhagic infection, probably congenital. About nine cases of congenital typhoid infection in which the diagnosis was proved bacteriologically are on record. All the cases occurred in children born when the mother was suffering from typhoid fever. In many the birth was premature. In three cases abortion took place about the fourth or fifth month, in two about the eighth month, and in two the children were born at term. Most of the children were born dead, but three lived nine hours, four days, and five days respectively. In most of the cases in which the child had reached only the fourth or fifth month the necropsy was entirely negative and the diagnosis rested on the bacteriological examination. In some of the later cases definite macroscopic lesions were present, though in all except one the intestines were spared, and in that one only a single solitary follicle was involved. The disease took the form of a general infection. The most constant lesion was slight enlargement of the spleen. Other lesions were slight icterus (two cases), hæmorrhages into the skin, liver, or kidneys (two cases), and slight swelling of the mesenteric glands (one case). The condition of the placenta is recorded in four cases. In all it was normal, but typhoid bacilli were found in it when it was examined bacteriologically. Typhoid bacilli were present constantly in the spleen and frequently in the blood, occasionally in the lungs (two cases), kidneys, and mesenteric glands (one case), and liver (one case). Dr. Blumer's case differs from those previously reported in that the mother was in good health at the time of birth. But she had an acute illness with remittent fever four and a half months previously which confined her to bed for 21 days. Presumably she suffered from typhoid fever, for she resided in a non-malarious district. A female child was delivered with forceps after a difficult labour. On the fourth day the infant had a slight convulsion after nursing. At each subsequent nursing she became rigid, as if in pain. On the fifth day there were spots of blood on the diaper. The amount of blood lost gradually increased until on the sixth day it became alarming. The vagina was packed with cotton, which was soon expelled with large clots of blood. Examination revealed an eroded cervix as the source of hæmorrhage. This was cauterised with nitrate of silver and the vagina was again packed. But the cotton was soon again expelled and vaginal hæmorrhage continued until death, which took place on the ninth day. Before death there were slight bleeding from the gums and a petechial eruption on the forehead. There were slight elevations of temperature. At the necropsy the mucous membranes were very pale. The mesenteric glands were all red and hæmorrhagic. The liver had a mottled, reddish-yellow appearance, and looked as if it had been boiled. On section it was very cloudy. The kidneys showed a few cortical hæmorrhages, and the bladder one large submucous hæmorrhage and numerous small ones. The vagina contained clots and showed two submucous hæmorrhages. The uterus was four centimetres in length and much dilated. Above the internal os was a blood-clot of the size of a pea.

A strip of endometrium one centimetre wide was intensely hæmorrhagic. The solitary follicles in the ileum and large intestine were swollen and some of them contained hæmorrhages. Microscopically, the liver cells were swollen and fatty, and the renal epithelium was swollen and granular. In the intestinal follicles the lymphoid cells had partly disappeared and were replaced by large epithelioid cells; in stained sections short bacilli were seen. The endometrium showed cell proliferation and hæmorrhages. Cultures from the heart's blood, liver, and kidney were negative; cultures from the colon, lung, umbilical cord, bile, and spleen yielded the typhoid bacillus. The septicæmic character of the disease is characteristic of congenital cases and hæmorrhages are common in them.

A DANGEROUS ECONOMY.

A CUSTOM of the City more to be honoured in the breach than in the observance was explained at the Guildhall police-court the other day by a police-inspector and seems to have been new to the presiding alderman. It consists in the police refusing to summon a medical man to examine a prisoner who denies being drunk when charged unless he or she is able to produce 7*s*. 6*d*. to pay the necessary fee. In the case in question an inspector explained that the difficulty lay in the fact that if the person desiring to be medically examined did not pay the fee the liability would fall upon the ratepayers. We have no doubt that it would, but the solicitude of the police on behalf of the pockets of the public seems here superfluous. The rate would, we conceive, hardly have to be materially increased even if a large proportion of the drunk and disorderly persons charged in the district insisted upon seeing a medical man. That any large number of them should so insist seems improbable, seeing that it would always be possible to inflict a heavier penalty upon the prisoner who had perversely and out of pure malice chosen to give unnecessary trouble, and we are not without a suspicion that it is the anxiety to avoid extra trouble rather than the dread of falling into extravagance that has caused the restriction to be imposed to which we have called attention. The dangers and hardships arising out of such a restriction fall exclusively upon innocent persons. We confess that we have no great confidence in the diagnosis of a policeman, be he constable, sergeant, or inspector. We do not blame him for it; his education is not gained in a hospital, and an additional difficulty is thrown in his way by the charity of the man in the street whose first impulse is to administer a stimulant to anyone suddenly afflicted with illness. A person who faints in public may, even though he be a teetotaler, have spirits poured down his throat and spilled over him until he reeks of them. Then he comes into the hands of those who arrive at their conclusions by the simple process of following their noses. They may be right in nine cases out of ten, but in the tenth case the person may die in a police-cell from want of proper attention.

MALARIAL FEVER AT TÁI PÓ NEW TERRITORY, HONG-KONG.

IN November, 1900, His Excellency the Governor of Hong-Kong instructed two medical officers, Dr. T. M. Young and Dr. J. C. Thomson of the Hong-Kong Medical Civil Service, to make an inquiry into the marked prevalence of malarial fever at Tái Pó, New Territory. The report of these officers to Mr. John Bell, acting principal civil medical officer, has been published as a Government notification from the Colonial Secretary's office, Hong-Kong, and bears date Dec. 6th, 1900. From Sept. 4th to Nov. 12th, 1900, there were caught 309 mosquitoes, of which 40 per cent. were anopheletes and 60 per cent. were culices. On Nov. 12th, the day of their arrival, however, the proportions of anopheletes caught had arisen to 60 per cent. But while during October there were 17 cases of fever occurring among the police there was only one in November up to the 15th. Dr. Young and Dr. Thomson attribute the fall in the number of cases which occurred during this period, which coincides with the second rice harvest, to the "adoption of vigorous prophylactic medication with quinine on two days successively at intervals of seven days." A search was made for the larvæ of anopheles, and these larvæ were found abundantly in the narrow ditches around the upper paddy fields and also in a sluggish stream into which the paddy fields drained. Ten children were brought from the nearest village to the police station who willingly yielded drops of blood at the rate of five cents per drop. In 50 per cent. of these the malaria parasite was found, two cases being of a benign type and three malignant, while all five children proved infective to anopheles feeding upon them. With regard to prophylaxis Dr. Young and Dr. Thomson have no alternative but to recommend "the acquirement and reclamation or efficient drainage of all the paddy fields within a radius of 250 yards from the foot of the hills on which the houses (of the police station) stand." Permanent buildings should also replace the mat-sheds at present used by the civil staff. The buildings should be two storeys high, residential quarters to be only on the upper floor, and the site suggested for these buildings is an island about 900 yards east of the present police station.

A MODIFICATION OF FLECHSIG'S METHOD IN THE TREATMENT OF EPILEPSY.

Dr. E. Meyer and Dr. C. Wickel have contributed an article on the above subject to a recent number of the *Berliner Klinische Wochenschrift* (No. 48, 1900). The work was carried out at the Psychiatric Klinik of Tübingen under Professor Siemerling, with a view to find, if possible, a more satisfactory treatment for cases of epilepsy than the method lately proposed by Flechsig. The plan of Dr. Meyer and Dr. Wickel is to begin the treatment with opium alone, commencing with small doses—e.g., five centigrammes three times a day, which are gradually increased until in about six or seven weeks the dose is nine centigrammes. This maximum dose is given only for one day, after which a bromide mixture is substituted for it—viz., potassium bromide one part, sodium and ammonium bromides each one part, the dose of the mixture being six grammes. The doses of the bromide mixture are now steadily increased till in a week they reach nine grammes per dose. This amount is the maximum dose, and it is continued for a long time and until definite improvement occurs. Under this method of treatment it is necessary that the digestive functions and the functions of the skin should be carefully regulated. Thus, during the opium treatment the patient should have cold baths of short duration (10 minutes) daily at a temperature of 24° C. After a day or two the temperature of the bath should be lowered 1° and the duration of the bathing limited to nine minutes, the next day the duration of the bath being eight minutes and the temperature 22° C. This process should be continued for a week. When the bromide treatment begins the temperature of the bath and its duration should be the same as at the commencement of the opium treatment. Diet should be carefully regulated so as to be light and easily digestible, all nitrogenous foods or beverages, such as beef, coffee and tea, meat broths (which generally contain nitrogenous extractives), acids, sauces, and the like, being avoided or reduced to a minimum. Clinical histories are given by the authors of several cases (10 in all) in which the above lines of treatment were carried out for long periods of

time with the result that the convulsive attacks were diminished in frequency and the patients were maintained in a condition of good health, both mentally and bodily. The gradual increase of the dosage of opium, followed by the administration of the bromide mixture, together with a systematic regulation of baths and diet, constitute the essentials of the new treatment.

THE PLAGUE IN SYDNEY.

DR. J. ASHBURTON THOMPSON, President of the Board of Health of New South Wales, has sent in an official report on the recent outbreak of bubonic plague in Sydney. The report is a voluminous and complete one, including clinical, pathological, and bacteriological records by Dr. A. E. Salter, in charge of the Maritime Quarantine Hospital, and Dr. F. Tidswell, the principal assistant medical officer of the Government. Between Jan. 19th and August 9th, 1900, 303 persons were attacked with the disease, of which number 262 were available for clinical observation. The metropolitan area alone was affected, its population being estimated at 436,000, including about 4000 Chinese and a few coloured people. Among the whites 293 cases occurred and 10 among the Chinese. The disease attacked four times as many males as females. The deaths numbered 103. More than half of the cases occurred between the ages of 15 and 35 years. Cases occurred in all parts of the metropolitan district. Haffkine's prophylactic serum was injected into 10,700 people, and among those thus inoculated 13 suffered from plague but recovered after mild attacks. The Yersin-Roux serum became available on May 13th, but its use did not interfere with the natural course of the epidemic. The opinion provisionally formed was that the serum had antitoxic powers, but in its present state could not be relied on as an active curative agent. The infection had its full virulence at the beginning of the epidemic. The only change noticed was an enfeeblement which began about May 1st. It took seven weeks to furnish the first 100 cases, four weeks to furnish the second 100 cases, and 13 weeks elapsed before the 303rd case was recorded. Dr. Thompson discusses the mode of infection in some detail, and deduces the following conclusions from his study of the epidemic:—1. The disease was not directly communicated from the sick to the well—in other words, was not catching. 2. It was not communicated in any important degree, at all events, from the sick to the well by mediate channels (clothes, household goods, merchandise, excreta). 3. The infection attached to localities and spread to others adjoining and continuous with that in which it was first manifested. 4. It also spread in a fashion which betokened the possibility of its being transported mechanically from an existent focus to a considerable distance and there, in its new situation, initiating an independent focus. 5. In the buildings in any infected locality cases occurred irregularly and showed no special proneness to occur in adjoining houses. 6. When the occurrence of one case among the inhabitants of a building showed that the infection was present in it secondary cases rarely followed. Irregularity of incidence on houses was accompanied with irregularity of incidence on the inmates. 7. An epizootic disease among rats preceded the first case which occurred in man. 8. This epizootic disease was plague. 9. The area over which the epizootic extended was practically co-extensive with that on which cases of plague in man were observed. 10. The epizootic died out as far as can be learned at the same time as the epidemic ceased. 11. The epidemic was caused by communication of the infection from rats to man. On the question of prevention Dr. Thompson says: "The best protection against epidemic plague lies in sufficient sanitary laws, persistently and faithfully executed by local authorities during the absence of disease, and that no other general scheme of defence is practicable." He, however, lays great stress on the importance of securing immunity from rats. The best possible way to gain this result is, as far as possible, to prevent the landing of rats from vessels, and to build houses in such a way and to keep premises in such a cleanly condition as to make it difficult for rats, in the first place, to enter and, in the second place, to live if they do enter.

FRIEDRICH NIETZSCHE: A STUDY IN MENTAL PATHOLOGY.

THE recent death of Nietzsche has been followed by the usual notices and appreciations of his life and work which nowadays mark the close of every brilliant career in literature or philosophy. Dr. W. W. Ireland, in the January number of the *Journal of Mental Science*, deals with the life and writings of the philosopher in a critical spirit, seeking to trace the sources from which sprang many of the extraordinary doctrines and precepts inculcated by Nietzsche. It is shown that a disposition to insanity had been inherited for several generations both on his father's side and on that of his mother. In boyhood Nietzsche was fond of solitude, shunning other children, and was "nice" in his habits. His ways were pious and studious, and he disliked the noisy drinking and smoking habits of the students at the Universities of Bonn and Leipsic where he studied. He manifested great ability, and at the age of 25 years he was appointed Professor of Pathology at the University of Basle. He had musical tastes, was a friend of Wagner, and had a keen appreciation of poetry. When the war of 1870 broke out Nietzsche, then a young man of 26 years, served in the ambulance corps, but contracted diphtheria and enteritis and was invalided home. He never thereafter quite recovered his health and was a martyr to migraine. "He used to suffer every two or three weeks from attacks of migraine, sickness, narrowing of the field of vision, and sleeplessness, often accompanied by mental distress." In the summer of 1875, after an unusual time of suffering, he wrote to a female friend: "Such as we (you and I) never suffer in the body alone; all is intergrown with mental crises." In 1876 Nietzsche got a year's leave to recruit his health, but his illness did not forsake him, and in the beginning of 1879 he resigned his professorship and retired on a pension. After this he led a wandering life, chiefly in Switzerland and Italy. His illness became worse and he suffered from much mental distress as his eyesight was also failing him so that he had to give up reading. During the period of enforced abstinence from reading he relates how "the undermost self, once smothered and stilled by continuous reading, now slowly awakened, bashfully, doubtfully, and at last spoke again, ... and this 'return to myself' was the highest kind of recovery." His physical health now began to improve and he began to write. He devoted his thoughts to philosophy, eschewed the religious faith in which he had been brought up, and inclined at first to Schopenhauer. His attitude soon after became more independent, even belligerent. "My mode of thought," wrote he, "requires a warlike mind, a desire to give pain, a pleasure in saying No." He attacked and denounced the besetting weaknesses of the day. He compared himself to a flame: "I glow and consume myself; light is all that I produce, blackened ashes all I leave." Nordau, analysing Nietzsche's writings and style, says that his language is like that of a madman with flashing eyes, wild gestures, and foaming mouth, and proceeds to show its resemblance to "writings of a similar order of thought and diction" emanating from the insane, a denunciation which is too sweeping. His attitude towards marriage was cold, "he had no idea of the sweet sympathy of a loving wife beyond

mere friendship and conversation," and could not be induced to marry. He had little belief in inborn genius, holding rather that diligent work and culture were the main factors. But his later writings were incoherent, even raving. He called himself "the Godless" and "the Immoralist." His chief commandment was "Be hard, suppress Pity." Eventually Nietzsche grew insane, the first attack being in 1888, and he died in 1900 after 11 years of insanity.

MR. D. HARVEY ATTFIELD, M.A., M.B., B.C., D.P.H. Cantab., has been appointed by the unanimous vote of the International Sanitary Council in Egypt, Medical Director of the Maritime Sanitary and Quarantine Service at Suez. The chief duty is to inspect medically, with the aid of three medical officers of health of different nationalities, all vessels before they enter the canal *en route* for Europe. The attached sanatorium is on the opposite side of the Gulf of Suez at Moses Wells. The sanitary inspection of the pilgrims from Mecca and Medina is carried on during a four-day detention in camp at Tor some 150 miles lower down the gulf. Dr. Harvey Attfield, who was medical officer of health of Watford from 1898 to 1900, filled one of the three junior positions in the Egyptian Quarantine Service from 1894 to 1897. It is not often that an Englishman gets an unanimous vote for an appointment from an international authority in Egypt.

AT the beginning of this year an infectious diseases isolation hospital and a crematorium were opened at Hull. On Jan. 10th the steamer *Friary* arrived from Alexandria with one member of her crew dead. His body was removed to the mortuary and afterwards buried. On Jan. 12th two of the crew sickened and their illness was diagnosed as influenza with pulmonary complications. On Jan 15th, two more sickened, and all four have died. A bacteriological examination made by Dr. E. Klein revealed the presence of plague bacilli, the disease having taken the pneumonic form. The bodies of the four men who died have been cremated. Other cases followed, and up to Jan. 23rd there were five cases under treatment and 10 under observation. One of the latest admissions is a medical man who attended the first cases on the *Friary*.

AT the commencement of the meeting of the Royal Medical and Chirurgical Society on Tuesday evening last, Jan. 22nd, the President, Dr. F. W. Pavy, rose in the chair and spoke as follows:—

"An event has happened within the last two or three hours which has cast sadness and grief into the minds of all. The Queen, the patron of this society, has been taken from us. I am sure that the feelings of all present will dictate the only course which is open to us under the circumstances. We cannot enter with any heart into the proceedings of an ordinary meeting. I therefore propose that this meeting be adjourned."

The motion was carried in silence. The council of the society have resolved "that all the business of the society shall be postponed until after the funeral of Her late Majesty."

THERE will be a discussion on the Feeding of Infants in Health and Disease at a meeting of the West London Medico-Chirurgical Society to be held on Friday, Feb. 1st, at 8.30 P.M. The society's rooms are in the West London Hospital, Hammersmith-road W. Members of the medical profession who are interested in the subject are invited to attend and to join in the discussion.

AT a meeting of the Metropolitan Hospital Sunday Fund held at the Mansion House under the presidency of the Lord Mayor on Jan. 18th the members were occupied with the transaction of formal business, chiefly the appointment of committees and the filling up of vacancies. Since that meeting a vacancy in the Distribution Committee has been occasioned by the lamented death of Dr. Sedgwick Saunders, who, though rarely taking part in the public meetings of the Council, did useful work on this most important committee.

THE death is announced of Dr. Walter Myers, B.Sc. Lond., M.B. Camb., who has been engaged at Para in Brazil for the Liverpool School of Tropical Medicine in investigating the causes of yellow fever. Dr. Myers has been a true martyr to science.

THE amount received by the Soldiers' and Sailors' Families Association is now approximately £62,000, which includes the sums sent to the Lord Mayor at the Mansion House.

THE first issue of the *Philadelphia Medical Journal* for the new century contains the unexpected announcement of the retirement of Dr. George M. Gould from the editorial chair.

THE appointment of Mr. William Maclachlan McDonald, medical officer at Montserrat, to the Legislative Council of that Presidency, has been officially approved.

THE ROYAL COMMISSION ON SOUTH AFRICAN HOSPITALS.

THE report of the Royal Commission appointed to consider and report upon the care and treatment of the sick and wounded during the South African campaign was published on Wednesday last. It is a highly interesting document and will require detailed consideration at our hands. The officers of the Royal Army Medical Corps are spoken of by the Commissioners in terms of high praise—a little reservation being made as to the excess of military tone in some of the service hospitals; and we trust that the suggestions of the Commissioners that the service should in several ways be modified so as to be made more attractive to medical men of high scientific and professional attainments will not be allowed to go unheeded. The employment of nurses in the army is strongly recommended, their attentions, though not desirable in venereal cases, being much preferable to those of orderlies in typhoid fever. The section of the report that deals with the care of the sick and wounded in various places during the campaign, in so far as it supplies an answer to or a commentary upon some of the sensational statements that have been published, will be the section to be read with the greatest avidity by the public. It is also the part concerning which we shall have much to say. The blue-book ends with the following conclusion:—

"We have now, to the best of our ability, pointed out in what respects and to what extent complaints with regard to the care of the sick and wounded in the present South African campaign are well founded. We have also called attention to the causes, so far as we can trace them, of any undue suffering by patients during the campaign. And where, in our opinion, mistakes and oversights on the part of the responsible authorities have occurred we have referred to them. We have also stated what steps ought to be taken with a view of remedying the evils we have noticed. Those evils were serious and ought not to be minimised. But in concluding our report we desire to say that in our judgment, reviewing the campaign as a whole, it has not been one where it can properly be said that the medical and hospital arrangements have broken down. There has been nothing in the nature of a scandal with regard to the care of the sick and wounded; no general or widespread neglect of patients or indifference to their suffering. And all witnesses of experience in other wars are practically unanimous in the view that, taking it all in all, in no campaign have the sick and wounded been so well looked after as they have been in this."

The Death of the Queen.

To the inexpressible grief of her subjects Queen Victoria has passed away. The ruler for over 60 years of an inheritance which under her sway became the largest empire the world has ever seen, her life is an integral part of the history of modern civilisation; so that even to give the briefest sketch of its salient points would be far beyond the scope of THE LANCET. We only here desire to record the profound regret of the profession which we strive to represent at the loss of our good and great Queen.

THE LAST ILLNESS OF THE QUEEN.

From information with which we have been favoured we append the following authoritative account of the last illness of the Queen :—

OSBORNE, Jan. 23rd, 1901.

The Queen's health for the past 12 months had been failing, with symptoms mainly of a dyspeptic kind accompanied by impaired general nutrition, periods of insomnia, and later by occasional slight and transitory attacks of aphasia, the latter suggesting that the cerebral vessels had become damaged, although Her Majesty's general arterial system showed remarkably few signs of age.

The constant brain work through a long life of Royal responsibilities, and the Imperial events, domestic sorrows, and anxieties which have crowded into her later years, may no doubt be held in some measure to account for this discrepancy between the cerebral and general vessel nutrition. The thoracic and abdominal organs showed no signs of disease.

The dyspepsia which tended to lower Her Majesty's originally robust constitution was especially marked during her last visit to Balmoral. It was there that the Queen first manifested distinct symptoms of brain fatigue and lost notably in weight.

These symptoms continued at Windsor where in November and December slight aphasic symptoms were first observed, always of an ephemeral kind and unattended by any motor paralysis.

Although it was judged best to continue the negotiations for Her Majesty's proposed visit to the continent in the spring, it was distinctly recognised by her physicians and by those in closest personal attendance upon her that these arrangements were purely provisional, it being particularly desired not to discourage Her Majesty in regard to her own health by suggesting doubts as to the feasibility of the change abroad to which she had been looking forward.

The Queen suffered unusual fatigue from the journey to Osborne on Dec. 18th, showing symptoms of nervous agitation and restlessness which lasted for two days. Her Majesty afterwards improved for a time both in appetite and nerve tone in response to more complete quietude than she had hitherto consented to observe.

A few days before the final illness transient but recurrent symptoms of apathy and somnolence with aphasic indications and increasing feebleness gave great uneasiness to her physician.

On Wednesday, Jan. 16th, the Queen showed increasing symptoms of cerebral exhaustion. By an effort of will, however, Her Majesty would for a time, as it were, command her brain to work and the visitor of a few minutes would fail to observe the signs of cerebral exhaustion.

On Thursday the exhaustion was more marked with considerable drowsiness; and a slight flattening was observed on the right side of the face. From this time the aphasia and facial paresis although incomplete were permanent.

On Friday the Queen was a little brighter, but on Saturday evening, 19th, there was a relapse of the graver symptoms which with remissions continued until the end.

It is important to note that notwithstanding the great bodily weakness and cerebral exhaustion the heart's action was steadily maintained to the last; the pulse at times evincing increased tension, but being always regular and of normal frequency.

The temperature was normal throughout. In the last few hours of life paresis of the pulmonary nerves set in, the heart beating steadily to the end.

Beyond the slight right facial flattening there was never any motor paralysis, and except for the occasional lapses mentioned the mind cannot be said to have been clouded. Within a few minutes of death the Queen recognised the several members of her family.

A BRIEF BIOGRAPHICAL SKETCH.

Her Majesty Queen Victoria was the daughter and only child of Edward, Duke of Kent, fourth son of George III. (whom he predeceased) by his wife the Princess Victoria Mary Louisa of Saxe-Coburg, widow of Charles, Prince of Leiningen. The death of the Princess Charlotte, the only child of George IV., childless, and the subsequent deaths of Frederick Duke of York and of King William IV. without issue, brought Her Majesty to the throne as heiress of her uncle when only a few days over 18 years of age. It had been evident for some years what her high destiny would be, and she was educated by her mother, the Duchess of Kent, with a special eye towards her fateful future.

In 1837, on the death of William IV., she ascended the throne. The times were critical, as all know. A great Reform Bill had just become law and pleased nobody, for while it curtailed the privileges of the landowners it did not seem to be sufficiently sweeping to benefit the working man. An iniquitous measure prohibited the introduction into the land of foreign corn until wheat had reached the astounding price of 80*s*. a quarter, and it is not too much to say that in 1837 the poor of the land were kept by law at the verge of starvation. Chartism, a movement which aimed at drastic changes in the Constitution, had assumed proportions indistinguishable from rebellion. At this juncture a girl in her teens, sufficiently well grounded in public affairs to understand the enormous responsibilities that fate was placing upon her, was

QUEEN VICTORIA.

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called to the head of the State, and came unfalteringly. From the first Council over which she presided the Queen gave evidence of courage, devotion to duty, and an intention to understand the rights and the wrongs of all great questions arising in her realm. She did not, most happily for her, remain long without a confidant to share her tremendous responsibilities. Three years after her accession, that is, in 1840, she married her cousin, His Royal Highness F. Albert A. C. E. Prince of Saxe-Coburg and Gotha and Duke of Saxony. By him she had nine children, of whom the eldest son now succeeds as King Edward VII. In 1861 the Prince Consort died, to the irreparable grief of his widow, who during the next 10 years remained in seclusion as far as devotion to the affairs of the nation would allow her to do so. For 20 years of wedded life the Queen enjoyed the support of a lover and husband who was also a wise and faithful friend, and no one can doubt that the deep affection which she had for the Prince Consort and the unbounded confidence which she rightly placed in his judgment greatly lightened the burden of State affairs for her. Throughout the dark days of the Crimean war, and the still more terrible season of the Indian mutiny, the Queen had her husband beside her to share her grief and confirm her resolution. It is no wonder that the death of such a consort should have remained with her as an ever-abiding sense of loss.

The Queen emerged from the semi-seclusion of her mourning under circumstances which ensured her the sympathy of a people who were loyal to her and cognisant of her many deep claims upon their respect and admiration, but who had at the time not the intimate knowledge of her which it has since been their privilege to obtain. In 1872 the Prince of Wales recovered from typhoid fever after passing through a stage of the disease during which medical opinion held out but small hope of the fortunate issue. The Queen returned public thanksgiving in St. Paul's Cathedral for the recovery of her son and from that time forward lived much more in the sight of her people.

How far the personal history of our dead Queen is also the constitutional history of her people cannot be even guessed at, but when the scientific historians of the future come to tell the history of the reign of Queen Victoria we are certain that the present estimate of her as a wise monarch will be completely justified. She came to the throne the child of kings who were only deterred from exercising their absolutism by a recollection of the fate of the House of Stuart. Fortunate in her early advisers she determined to take a part at once in her own Councils when the thought of her responsibilities might well have appalled her. Happy, extraordinarily happy, in the choice of a husband she was able almost from the first to share these responsibilities with a good man. And so it was that doubly fortified against timidity and strong in the knowledge that she possessed a well-informed mind, a mind open equally to the principles of justice and the sentiments of mercy, Queen Victoria was able to maintain the best parts of her prerogative and to yield without any sense of weakness claims that might have been universally acknowledged as due to the Crown in the seventeenth century, which the Crown had to struggle for in the eighteenth century, and which the educated nation of Great Britain would never for one moment have granted in the nineteenth century. As decade after decade went by under her firm and gentle rule the nation became permeated with the sense that they were governed by a woman not only of wide personal sympathies and of a sweet and religious nature but also of extraordinary mental endowments. They saw that instinctively she ruled upon right evolutionary principles, not seeking for novelty or blindly wedded to the tradition of an ancient *régime*, but taking for her scheme what was good in the past and adding to it what was of promise in the future.

She was prompt to recognise her true position and to realise both its possibilities and its limitations. There can be no doubt that our nation would never have enjoyed its extraordinary era of prosperity beneath a monarch content to rule in name only and willing, because certain attributes of mediæval royalty had to be surrendered, to waive all personal responsibility and to sit behind her Councils a figure-head, the nominal fount of honour and nothing more. The Queen was no less judicious in the assertion of her personality than she was just in her sense of what was due to the progress of the nation committed to her charge, and as a consequence her people as they came to know her loved her. The increasing affection in which the Queen was held underwent remarkable demonstration in 1887 upon the occasion of the Jubilee of her reign, from which time forward, as we have said elsewhere, personal love for the sovereign became a quality common to the whole nation.

To medicine the Queen was always a good friend. She chose her medical advisers with discrimination and honoured with her deep personal friendship more than one of them. During her reign the enormous developments of science have been freely recognised as one of the great factors in British progress, and in no branch of science has more progress been made than in those departments of medicine where the introduction of the use of anæsthetics and the discoveries of the antiseptic treatment are available. Her Majesty showed her appreciation of our profession by the admirable selections which she made of her physicians and surgeons, and by the faith which she put in their advice. It is noteworthy that the Queen was early inducted into orthodox medicine, for she was the first member of our Royal Family to be vaccinated.

There were until shortly before the commencement of her fatal illness few premonitory signs of real danger to her life. To the grave public anxieties and private griefs of the last 18 months of her reign her death may possibly be attributable in a secondary degree, but the end came as a peaceful and natural conclusion of a long, full, and beautiful life. Her Majesty died at half-past six o'clock in the afternoon of Tuesday, Jan. 22nd, in the eighty-second year of her age, the immediate cause of death being cerebral failure. The authoritative statement which we publish above tells the story of the last illness so clearly to the medical man, that we need not enlarge upon it.

THE REPORT OF THE ANÆSTHETICS COMMITTEE OF THE BRITISH MEDICAL ASSOCIATION.

IN consequence of a resolution unanimously adopted by the Section of Therapeutics at the annual meeting of the British Medical Association held in Bournemouth in 1891, a committee was appointed "to investigate the clinical evidence with regard to the effects of anæsthetics upon the human subject; and especially the relative safety of the various anæsthetics, the best methods of administering them, and the best methods of restoring a patient in case of threatened death." From the general committee an Analysis Sub-committee was formed, and we have now in a bulky volume of 134 pages the report of this Analysis Sub-committee. The committee instituted an inquiry, which extended over the year 1892, into all cases of the administration of anæsthetics in the United Kingdom of which accurate notes could be obtained. Records were derived from personal observation in hospital or in private practice or both during the year 1892 (1) in cases where no dangerous symptoms have occurred and (2) giving special details of cases in which dangerous symptoms or death occurred.

A list is given of the sources from which reports of cases were returned in the record books, together with the names of the observers, and in all 136 books were returned, recording details of 25,920 cases. Professor W. Ramsay, Professor of Chemistry in University College, London, publishes a report upon samples of the anæsthetics employed in cases which displayed dangerous symptoms, and Lieutenant-Colonel E. Lawrie, I.M.S., of Hyderabad, sends a report containing a summary of 1521 administrations of chloroform in India.

The Analysis Sub-committee give the fullest details in reference to uncomplicated and complicated cases, cases with minor complications, cases of anxiety, cases of danger, and cases of death. In the table of anæsthetics employed there were, out of a total of 25,920 cases analysed, 13,393 in which chloroform was the anæsthetic employed, 4595 of ether administration, 2911 of nitrous oxide, 2071 of gas and ether, 678 of A.C.E. mixture, 597 of nitrous oxide mixed with oxygen, 418 of chloroform and ether in various proportions, 275 of chloroform followed by A.C.E. or by some similar mixture, and 155 of A.C.E. followed by ether.

The uncomplicated cases amounted to 25,163, or 97·169 per cent. of the total cases in the record books, while the complicated cases (those presenting unusual symptoms or sequelæ referable wholly or in part to the anæsthetic) were 733 in number, being 2·831 per cent. of the total cases in the record books. The complicated cases are sub-divided into cases with minor complications (some abnormality but no actual anxiety or danger), cases of anxiety (with symptoms requiring remedial measures but not involving immediate danger), cases of danger (with symptoms threatening the patient's life), and cases of death (due wholly or in part to the anæsthetic). The most elaborate abstracts are given of cases falling into each of these subdivisions, with the anæsthetic employed in each case.

29 cases of death due partly or entirely to the anæsthetic are considered, and details of all these cases are appended. The influence of various factors upon the phenomena of anæsthesia is most carefully discussed, and it is curious to note that the percentage of complicated cases was greater in males than in females, as well as the percentage of danger cases. In males the percentage of danger cases under chloroform was nearly six times that of danger cases under ether, more than seven times that of danger cases under gas and ether, and nearly two and a half times that of danger cases under the A.C.E. mixture. In the female cases the percentage of danger cases under chloroform was nearly twice that of danger cases under ether, more than twice that of danger cases under gas and ether, and nearly twice that of cases under the A.C.E. mixture. Minor complications are notably more frequent in males than in females under ether. The frequency with which cases of danger occurred in patients in good condition was as follows: with chloroform, one in every 133 administrations; with ether, one in every 654 administrations; and with gas and ether, one in every 834 administrations.

Much information is given as to the influence of various anæsthetics in certain pathological states, while an interesting comparison is given of the methods of their administration. In giving chloroform the towel method shows the highest percentage of complications and the highest danger rates; the method of giving the drug on lint shows a striking diminution in both the complication and danger rates.

Of the 29 deaths recorded 18 were under chloroform. Of these three are considered to have been due entirely to the anæsthetic and four to the anæsthetic principally and the patient's condition secondarily; in the others there is either doubt as to the relative shares taken by the three factors—anæsthetic, patient's condition, and operation; or the death was distinctly due more to one or both of the two latter causes than to the anæsthetic. Of the deaths under ether not one is held to be due entirely to the anæsthetic. The conclusion is emphasised that danger to life under the use of chloroform is greater than when other anæsthetics are employed. We have drawn attention in mere outline to this report which teems with the most valuable information on almost every phase of the administration of anæsthetics. The following are the conclusions which the sub-committee think appear to be justified as a result of their most exhaustive study and analysis of the whole cases:—

CONCLUSIONS.

Relative safety of the various anæsthetics.—1. The relative safety of the various anæsthetics may be gathered from the statistical tables in the report. When only those cases of danger which were held to be due entirely to the anæsthetic are considered the following instructive figures are obtained, further emphasising the danger of chloroform as contrasted with ether. Cases of danger (including deaths) considered to be due entirely to the anæsthetic: under chloroform, 78, giving a danger rate of 0·582 per cent.; under the A.C.E. mixture, 1, giving a danger rate of 0·147 per cent.; under mixtures of chloroform and ether, 2, giving a danger rate of 0·478 per cent.; under the A.C.E. mixture followed by chloroform, 1, giving a danger rate of 1·694 per cent.; under chloroform preceded by ether, 5, giving a danger-rate of 2·2 per cent.; under chloroform followed by mixtures of alcohol, chloroform, and ether, 1, giving a danger-rate of 0·36 per cent.; under ether, 2, giving a danger-rate of 0·065 per cent.; under "gas and ether," 3, giving a danger-rate of 0·096 per cent.; under ether preceded by chloroform, 1, giving a danger-rate of 0·480 per cent.; under ether preceded by the A.C.E. mixture, 0; under the chloroform group of anæsthetics (addition of the first six headings above), 88, giving a danger-rate of 0·584 per cent.; and under the ether group of anæsthetics (addition of the last four headings above), 6, giving a danger-rate of 0·085 per cent. 2. Although (excluding nitrous oxide) ether may be accepted as the safest routine agent certain circumstances determined by the state of the patient, the nature of the operation, &c., may render the use of some other anæsthetic or combination of anæsthetics both safer and easier.

The best methods of administration.—3. No method of administration of chloroform is free from danger, but an examination of the complicated cases appears to show that the occurrence of danger depends largely upon the administrator who employs any particular method. 4. No conclusion from the evidence before the committee as to the best method of administration of ether and "gas and ether" is possible. 5. The data warrant the conclusion that the A.C.E. mixture should not be given from a closed inhaler—e.g., Clover's. This conclusion applies to all mixtures containing chloroform.

Best methods of restoration.—7. The sub-committee are unable from the material at their disposal to draw any conclusion upon this point.

Clinical evidence regarding anæsthetics generally.—8. Anæsthetics are more commonly associated with complications and dangers in males than in females. 9. Excluding infancy, and taking anæsthetics collectively, the complications and dangers of anæsthesia increase *pari passu* with advancing age. 10. Anæsthetics are notably more dangerous in proportion as the gravity of the patient's state increases. 11. Danger to life is especially likely to be incurred at early periods of the administration of anæsthetics, while the tendency to less grave complications increases directly with the duration of anæsthesia. 12. The tendency for complications, dangerous and otherwise, to occur increases *pari passu* with the gravity of the operation.

Clinical evidence regarding chloroform.—13. Chloroform is about twice as dangerous in males as in females. 14. Chloroform is most dangerous during early infancy and after 30 years of age; least so from 10 to 30 years of age. 15. In conditions of good health chloroform is very much more dangerous that other anæsthetics. In grave conditions chloroform still remains the least safe anæsthetic, but the disparity between it and other anæsthetics is far less marked than in health. 16. When danger occurs under chloroform, whatever its exact nature may be, there is abundant evidence that in a large proportion of cases the symptoms that are observed are those of primary circulatory failure. 17. Imperfect anæsthesia is the cause of a large number of cases of danger under chloroform. 18. Vomiting during anæsthesia, which may lead to danger, seems to be more frequent under chloroform than under other anæsthetics. 19. Struggling is very much more frequent in the complicated cases under chloroform than in the uncomplicated, and this phenomenon must therefore be regarded as a source of grave danger under chloroform. 20. The tendency for circulatory complications to appear increases directly with the relative amount of chloroform in the anæsthetic employed. 21. While vomiting is more common after administrations of ether, severe and prolonged vomiting is more common when chloroform has been used. 22. Circulatory depression following anæsthetics is more common after chloroform than after ether. 23. While the respiratory complications of anæsthesia as a whole are of equal frequency under the ether and chloroform groups respectively, yet those that occur under ether are mostly of a trifling and transitory

nature while those that occur under chloroform are more grave and persistent.

Clinical evidence regarding ether.—24. Under ether the complications of anæsthesia are more frequent with males than with females, but with the former they are generally slight, ether being rather more dangerous with females than with males. 25. Ether, where employed throughout or preceded by nitrous oxide gas or by the A.C.E. mixture, is singularly free from danger in healthy patients. 26. Minor troubles in administration due to laryngeal irritation and increased secretion are more common under ether and "gas and ether" than under chloroform and its mixtures. 27. Struggling occurs more frequently with ether when given alone than with other anæsthetics, but it rarely leads to danger. 28. After-vomiting is more common with ether than with other anæsthetics, but it is usually transient. 29. Bronchitis is much more common as an after-effect of ether than of chloroform. 30. With "gas and ether," as with ether, dangers are more common in females, although complications are more frequent in males.

Clinical evidence regarding mixtures and successions of anæsthetics.—31. The A.C.E. mixture in most of the statistical tables holds an intermediate position between chloroform and ether. 32. The A.C.E. mixture is more dangerous in males than in females, but not to such a marked degree as is chloroform. 33. The administration of ether antecedent to chloroform does not abolish the possibility of chloroform dangers. 34. The various mixtures and successions of anæsthetics were recorded too infrequently to justify definite conclusions.

General conclusion.—35. From the evidence before the sub-committee they are convinced that by far the most important factor in the safe administration of anæsthetics is the experience which has been acquired by the administrator. In many cases the anæsthetisation completely transcends the operation in gravity and importance, and to insure success, particularly in these cases, it is absolutely essential that an anæsthetist of large experience should conduct the administration.

THE WAR IN SOUTH AFRICA.

THE public mind has of late been occupied with one absorbing subject—the condition of the Queen. Nothing else seemed worthy of consideration, and in point of fact nothing else received consideration. People have been living in a state of suspense and nervous tension and in an alternation of hopes and fears, and even where, as in the case of the medical profession, fears and forebodings as to what the issue would be formed the dominating feeling in their minds, they as an involuntary instinct and impulse of their being nevertheless strove to nurture hope in their hearts as long as it was possible to do so. The news that the invading Boers in Cape Colony were nearing the coast, in the all-pervading sorrow and gloom caused by the illness and death of Her Majesty, received very little attention.

The war in South Africa has from the first been unique and the situation at present is probably in some respects without precedent. The Boers are displaying an uncommon degree of renewed energy and the position of affairs in South Africa is not such as the nation might have expected after having been assured that the war was over and after having read in the papers of the return of troops to this country and the colonies.

But the Boers, despite of all the difficulties and embarrassments they can create in the meantime, cannot live for ever by looting. They cannot obtain unlimited supplies of food, ammunition, war material, and horses, they must provide for the care of their sick and wounded, and the further they get from the sources of their supplies the more difficult will their task become. Moreover, when reinforcements in the shape of mounted troops reach Lord Kitchener the conditions will have changed. In the meantime there is great activity at the Cape in recruiting for local corps and volunteers.

Speaking of the number of officers who from one cause and another have left the seat of war for this country we may say that the officers who have been most overworked and are in most need of rest are the medical officers, but they, owing to their limited numbers, are compelled to stick to their duties in the field. A glance at the casualty returns shows that enteric fever is still very prevalent among the British forces in South Africa. This disease, together with dysentery, make up the bulk of the sickness. There has, too, been a good deal of desultory fighting of one sort and another owing to the marauding attacks of the Boers and as a consequence there has been an accession to some extent to the list of wounded in hospital.

INFECTIOUS DISEASES AT SWINDON.—At the quarterly meeting of the board of the Swindon and District Hospital held on Jan. 17th it was reported that there were 42 infectious cases in the hospital, being 20 more than the institution was provided for. It was decided to remove some of the convalescent cases to the new small-pox hospital.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6858 births and 4320 deaths were registered during the week ending Jan. 19th. The annual rate of mortality in these towns, which had been 16 9, 17·5, and 19·6 per 1000 in the three preceding weeks, declined again last week to 19·1. In London the death-rate was 18·7 per 1000, while it averaged 19·4 in the 32 large provincial towns. The lowest death-rates in these towns were 13·9 in Croydon, 14·1 in Cardiff, 14·7 in Oldham, and 14·9 in West Ham; the highest rates were 23·3 in Swansea, 23·4 in Liverpool, 24·7 in Preston, and 24·8 in Sunderland. The 4320 deaths in these towns included 374 which were referred to the principal zymotic diseases, against 323 and 389 in the two preceding weeks; of these 99 resulted from whooping-cough, 95 from diphtheria, 79 from measles, 38 from "fever" (principally enteric), 36 from diarrhœal diseases, and 27 from scarlet fever. The lowest death-rates last week from these diseases occurred in Portsmouth, Oldham, Huddersfield, and Halifax, and the highest rates in Nottingham, Bolton, Blackburn, Preston, and Sheffield. The greatest mortality from measles occurred in Swansea and in Wolverhampton; from scarlet fever in Preston; from whooping-cough in Nottingham, Birkenhead, Preston, and Sunderland; and from diarrhœal diseases in Blackburn. The mortality from "fever" showed no marked excess in any of the large towns. The 95 deaths from diphtheria in the 33 towns included 32 in London, 13 in Sheffield, six in Leeds, six in Bristol, and five in Birmingham. No fatal case of small-pox was registered last week either in London or in any of the 32 large provincial towns, and no case of small-pox remained under treatment on Saturday, Jan 19th, in any of the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2171, against 2535, 2390, and 2277 on the three preceding Saturdays; 187 new cases were admitted during the week, against 167, 163, and 156 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had increased from 306 to 392 in the four preceding weeks, further rose last week to 422, but were 238 below the corrected average. Influenza was certified as the primary cause of 20 deaths in London last week, against 10 in each of the two preceding weeks. The causes of 59, or 1·4 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Portsmouth, Bristol, Cardiff, and in nine other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Norwich, Liverpool, Sheffield, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 19·2 and 21·9 per 1000 in the two preceding weeks, further rose to 24·0 per 1000 during the week ending Jan. 19th, and showed an excess of 4·9 per 1000 over the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 15·0 in Leith and 15·5 in Greenock to 28·6 in Perth and 29·3 in Aberdeen. The 752 deaths in these towns included 61 which were referred to whooping-cough, 23 to measles, 16 to diarrhœa, 14 to "fever," six to diphtheria, three to small-pox, and two to scarlet fever. In all, 125 deaths resulted from these principal zymotic diseases, against 76 and 101 in the two preceding weeks. These 125 deaths were equal to an annual rate of 4·0 per 1000, which was 2·3 per 1000 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 29 and 49 in the two preceding weeks, further rose last week to 61, of which 44 occurred in Glasgow, 10 in Dundee, and five in Edinburgh. The deaths from measles, which had been 15 and 12 in the two preceding weeks, rose again to 23 last week, and included nine in Aberdeen, eight in Edinburgh, and three in Leith. The fatal cases of diarrhœa, which had increased from 10 to 22 in the five preceding weeks, declined again last week to 16, of which seven were registered in Glasgow, four in Dundee, and two in Aberdeen. The deaths referred to different forms of "fever" which had been seven, two, and two in the three preceding weeks, increased

to 14 last week, and included 10 in Glasgow, two in Edinburgh, and two in Aberdeen. The fatal cases of diphtheria, which had been three and eight in the two preceding weeks, declined again last week to six, of which three occurred in Edinburgh. The deaths from small-pox, which had been three, three, and two in the three preceding weeks, rose again last week to three, and were all recorded in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 105 and 123 in the two preceding weeks, further rose last week to 139, but were 59 below the number in the corresponding period of last year. The causes of 30, or nearly 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 29·4 and 28·3 per 1000 in the two preceding weeks, rose again to 30·4 per 1000 during the week ending Jan. 19th. During the past four weeks the death-rate in the city has averaged 27·4 per 1000, the rates during the same period being 18·2 in London and 20·9 in Edinburgh. The 202 deaths belonging to Dublin registered during the week under notice were 14 in excess of the number in the preceding week and included 16 which were referred to the principal zymotic diseases, against 23 and 18 in the two preceding weeks; of these, 12 were referred to whooping-cough, three to "fever," and one to diarrhœa. These 16 deaths were equal to an annual rate of 2·4 per 1000, the zymotic death-rate during the same period being 1·6 in London and 3·0 in Edinburgh. The deaths from whooping-cough, which had been 13 and 10 in the two preceding weeks, rose again last week to 12. The fatal cases of "fever," which had been three in each of the two preceding weeks, were again three last week. The 202 deaths in Dublin last week included 41 of children under one year of age and 51 of persons aged upwards of 60 years; the deaths of infants largely exceeded the number in the preceding week, while those of elderly persons showed a decline. Five inquest cases and five deaths from violence were registered; and 72, or more than a third, of the deaths occurred in public institutions. The causes of 10, or nearly 5 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following officer has been noted for accelerated promotion for services in China:—Surgeon Edward Butler Pickthorn.

The following appointments are notified: — Surgeons: Mowat to the *Duke of Wellington;* J. G. Corry to the *Northampton*, for the *Calliope;* and F. Fedarb to the *Excellent*.

ROYAL ARMY MEDICAL CORPS.

Major J. C. Morgan, R.A.M.C., has been appointed Medical Officer of the Duke of York's Royal Military School, Chelsea, vice Lieutenant-Colonel J. H. C. Whipple, A.M.S. (retired), in recognition of his services as staff surgeon in charge of head-quarters in the Tirah campaign, 1897–98.

DEATHS IN THE SERVICES.

Deputy-Inspector-General Edward Hodges Cree, R.N. (retired), aged 87 years, on Jan. 15th at his residence, 2, Pemberton-gardens, Holloway. At one time he held the post of staff-surgeon at the dockyard at Portsmouth, and was surgeon on board the *Rattlesnake*, the *Vixen*, and the *Fury* during the war with China (medal) and the operations on the coast of Borneo in 1839. He was also surgeon on board the *Odin* in the Baltic in 1854 (medal) and was at the taking of Sebastopol in the following year (medal).

THE PRINCESS AND THE WOUNDED.

The Princess of Wales has presented the patients at the Gables private military hospital, Surbiton, with handsome pocket-cases, each inscribed "A gift from the Princess of Wales," and a cartridge pencil bearing the name of the engagement at which the recipient was wounded.

DISCHARGED TO DUTY.

The following have been discharged to duty: Civil Surgeons W. R. Kemp, J. P. N. Casey, FitzGibbon, Mackenzie, Hoskin, Petty, and McMurty.

THE WAR IN CHINA.

It is very gratifying to hear such good accounts of the British forces—and of those of the Indian contingent especially—serving in China. The cold is severe there at the present season, but it is not the case that the Indian troops are dying of cold and are not properly cared for. It is inevitable, as the special correspondent of the *Standard* writes, that in every campaign a certain number of deaths should take place from sickness and the total mortality may be large by the time the war is over, but the troops are well provided for and certainly as well as they can be under the circumstances. It must be borne in mind that China is not at all like England in the way of sanitation. Tientsin, for example, is entirely without drainage, even of the most rudimentary kind, and there is a good deal of unavoidable overcrowding, especially among the native population. The *Standard* correspondent says:—

> The British military authorities have managed in some way to get all their men h uses, and have rented some of the best places available. They have secured stocks of coal and an ample supply of stoves; the commissariat stores are full to overflowing, and, so far as most of us can see, nothing has been left undone that could have been done to keep the native troops well and fit. Native sentries have short duty, and are served with hot tea before and after duty. And as for clothing Tommy would smile could he see some of his dusky colleagues going about town. Many officers, almost fastidiously anxious to keep their men sound, give them extra comforts, &c.

The men have plenty of warm clothing of all kinds, but all who know anything of the habits and practices of our Indian native troops, excellent as these troops are in respect of courage and discipline, know that they are singularly "absent-minded" and careless in exposing themselves to all kinds of risks from colds and chills, and that they have to be watched like children in these respects. Native soldiers on field service are peculiarly liable to pneumonia and pulmonary diseases. In spite of their habits and practices, against which the officers fight with energy, the sick list is not a long one. No one, says the correspondent, can suggest the slightest neglect on the part of the military authorities.

COMPLIMENTARY DINNER TO MEDICAL AND SURGICAL OFFICERS OF THE RED CROSS HOSPITAL.

A complimentary dinner to Colonel Cayley and the medical staff of the National Red Cross Hospital was given on Friday evening, Jan. 18th, at Messrs. Ferguson and Forrester's Restaurant, Buchanan-street, Glasgow. The Marquis of Breadalbane, K.G., presided and amongst those present were Professor George Adam Smith, Colonel R. C. Mackenzie Colonel Cayley, commandant of the staff; Mr. H. E. Clark, senior surgeon; Sir David Richmond, Professor Chiene, Sir James Bell, Dr. Bearson, Dr. John Cowan, Dr. John Aitken, Dr. Stirling, and Dr. John M'Intyre.

Correspondence.

"Audi alteram partem."

THE EXAMINATIONS FOR THE SWISS FEDERAL DIPLOMA

To the Editors of THE LANCET

SIRS,—It will be convenient for me and of use to others if you will allow me to describe my experience of the examinations required for the Swiss Federal diploma under the new regulations for I am receiving many letters on the subject, as I am the first Englishman to obtain the diploma under these regulations. It is 10 years since they were enforced, and meanwhile only one Englishman has attempted, and no one has succeeded, in obtaining the diploma.

The examinations required are three in number. 1. The Federal Maturité. 2 The examination in anatomy, physiology, embryology, and history. 3. The "professional," which includes pathology and pathological anatomy, medicine, therapeutics, diseases of children, ophthalmic surgery, surgery, midwifery and gynæcology, hygiene medical jurisprudence, and mental diseases. The examinations are conducted in French German, or Italian. Those candidates who elect to be examined in French or Italian have to go to Geneva or Lausanne Those who choose German must go to Basle, Berne, or Zurich. The examinations are held twice a year, in the spring and in the autumn. Application for admission to, or for information about, the

Maturité should be made to Professor Geiser, Kussnacht, near Zurich. For the medical examinations application should be made to Professor Courvoisier, Holbeinstrasse, Basle. No degree in arts or medicine of any university will gain for any candidate any privileges or exemption. He will have to undergo every part of every examination precisely as the other candidates.

I will deal with the medical examinations first. They are long and very practical and very thorough, divided up into many parts, and are chiefly oral. In the first one there is a "practical" in each subject, followed by 20 minutes to half-an-hour's good heckling. Then a week afterwards there is a solemn oral in each subject. Instead of the "practical" in physiology there may be an essay to write. The subjects offered at the last examination were "The Gases of the Blood," "Vital Capacity," "Pancreatic Secretion and Digestion." Three hours are allowed. In anatomy one is allowed five hours to dissect the parts allotted. A good deal of embryology is required, and microscopic sections have to be drawn and described. In histology specimens have also to be cut, stained, and mounted. In the "professional" there are 23 parts. In medicine, a case in the wards has to be taken very fully and diagnosed; another case is the subject of a *vivâ voce*, and there is also a solemn oral examination. In surgery the arrangement is the same, with the addition of two operations on the cadaver. In obstetrics there are a clinical examination and a practical examination in operations on the mannequin, as well as an oral. In the other subjects there are papers and oral examinations. The whole of the examination takes about a month.

Now as to the "Maturité," which is the great difficulty. It is under the management of the Commission de la Maturité Fédérale, of which Professor Geiser is the President, and is not in any way under the management or influence of the Comité Directeur of Medical Examinations. If a candidate fails twice he cannot enter again. If he passes creditably in some subjects, but fails in others, he is excused from being examined the second time in those subjects in which he has done well. The scheme is as follows:—

A. *Languages.*—1. Latin: Livy, Cicero, Virgil, Horace, Plautus. 2. Greek: Homer and Xenophon; some chapters of Plato and Sophocles. 3. Maternal language: History of the literature; written composition on some literary or scientific subject. 4. A second maternal language (a national Swiss language): Ability to read and translate it; translation and explanation of a classic. 5. Greek may be replaced by English or by a third national Swiss language.

B. *History and Geography.*—Ancient history; history of the middle ages and modern history. Physical and political geography.

C. *Mathematics.*—Algebra: Equations of the second degree; arithmetical and geometrical progression; binomial theory. Geometry: Euclid; rectilinear trigonometry; elementary problems of spherical trigonometry; conic sections.

D. *Natural Sciences.*—The principal types of the animal kingdom and general knowledge of the human body; the organs of the higher plants; the principal families of the natural system; the most important minerals. Physics and chemistry: General properties of matter; mechanics of solids, liquids, and gases; the principal laws of acoustics, of optics, of heat, of electricity and magnetism; the principal chemical elements and their most important combinations.

It will be at once seen how ill-defined are the limits of the scheduled subjects. For the guidance of others I will briefly describe my personal experience. In Latin we had a longish piece of Latin prose, for which we were allowed three hours. Then there is a *vivâ voce* in the set authors. I was given a part of one of Cicero's letters and was much questioned on points of grammar and construction. I took English instead of Greek. We were given a piece of French to put into English, and had to translate a piece of Green's "History of England" *vivâ voce*. I took French as my *langue maternelle*. We were given three hours to write the essay. The subjects from which we could choose one were "The Life and Work of Molière," "A Conversation between a Man of Science and a Man of Letters," "The Comparison of the Classical Drama with the Naturalistic." In the *vivâ voce* I was taken over the Chanson de Roland, Boileau, and Victor Hugo. As my second national language I took Italian. We had a longish piece of Italian prose (i.e., French with Italian) and in the *vivâ* I was given half a page of Manzoni's "I Promessi Sposi." In ancient history I was taken over Rameses II. and his times; Athens and Sparta and the comparison of the codes of Lycurgus and Solon; also the "Code Napoléon." In modern history we discussed Louis XIV. and his later times. There is no written paper in history, but the field is absurdly wide. In geography I was taken over isotherms, isobars, and cyclones and anticyclones. There are no paper. The mathematics are very stiff. There are a paper and a *vivâ voce*. The paper consisted of six problems—two in algebra, two in trigonometry, and two in conics. We might choose *one* in each subject *only*. They were all catchy and difficult. In the *vivâ voce* one is called upon to work sums on a blackboard involving the use of logarithms. I was also taken over the ellipse and parabola.

Natural History.—This is all *vivâ voce*. In zoology I was given the crocodile's heart, and the lungs of snakes, and the classification of fishes. In botany the ovary and the signification of the various forms of placentation took up the 20 minutes. In geology the various forms of crystallisation are required. In physics a good deal is required, much more than is indicated in the programme. I was taken over the comparison of electric, heat, light, and Roentgen rays, mirrors, reflection of sound, and the application of electricity to motors. In chemistry I was given nothing but phosphorus and sulphur to talk about. All this is *vivâ voce*. The examination takes four or five days. There is a different examiner for each subject. In the oral examinations another examiner is always present. Six is the highest given in each subject, and 0 is the lowest. One 1 is enough to plough a candidate or 2 twos or 3 threes. There were seven candidates, and only three of us passed.

I found it necessary to spend three or four months in being coached by professors at Lausanne, for the limits of the subjects of the schedule are so ill-defined and it is so difficult to find suitable text-books and so difficult to know what was required and what not required that "coaching" seemed absolutely necessary. I was treated with the utmost fairness and courtesy throughout, and nothing could exceed the kindness of Professor Fovel of Lausanne, the local president of the Maturité examination, or of Professor Lâskowsky and Professor Jenzer of Geneva. I would only add that no M.D. of any Swiss university gives the right of practising in Switzerland. Only the Federal diploma can do it for the whole of Switzerland and the cantonal diploma in certain cantons.

I am, Sirs, yours faithfully,

Davos, Jan. 10th, 1901. EDWARD H. DOUTY, M.D. Cantab.

PERIPHERAL NEURITIS FROM WHISKY-DRINKING.

To the Editors of THE LANCET.

SIRS,—The most important discovery recently made by Dr. E. S. Reynolds that arsenic was present in the beer taken by a number of patients suffering from peripheral neuritis in Manchester will lead to the reconsideration of the etiology of alcoholic neuritis. There can now be no doubt of the correctness of his conclusions that many persons have recently suffered from toxic symptoms due to the presence of arsenic in beer, and that in many cases the peripheral neuritis has been entirely, or in part, produced by arsenic. Whilst his discovery is one which is of the greatest service to the community, and one of which English medicine may be justly proud, it will also lead to renewed investigations respecting the toxic effects of alcoholic beverages. Whether beer free from arsenic is capable of producing peripheral neuritis, as is generally believed, will be clearly shown by the experience of the next year or two when, in Manchester at least, all beer will be free from arsenic. To all interested in the subject the question will probably occur whether peripheral neuritis is produced by the drinking of spirits and if so whether this neuritis is also the result of arsenic as an impurity in spirits. Whilst it is stated in many text-books that alcoholic neuritis is produced by spirit-drinking it must be admitted that spirit-drinkers are often beer-drinkers also. One remembers cases of peripheral neuritis in which the form of alcohol taken was said to be spirits, but recently I have had the opportunity of observing a case in a whisky-drinker which appears to be worthy of record, since so much attention is now being given to the etiology of various forms of neuritis. The patient was under the care of Dr. Tytler,

surgeon to the Ancoats Hospital, where I examined him and obtained a careful history of the case. There could be no doubt that the case was one of advanced peripheral neuritis. All four limbs were paralysed, the wrists and feet were dropped, the knee-jerks were absent, and muscular hyperæsthesia was marked; the bladder and rectum were not affected. There were no cutaneous affections. Death occurred apparently from paralysis of the diaphragm. I made a microscopical examination of the peripheral nerves and found the changes of advanced parenchymatous peripheral neuritis. The patient had been a billiard-marker at a public-house and had had a free choice of alcoholic beverages. He had a great liking for spirits, but did not like beer. He stated, and persisted in the statement on every examination, that he had drunk freely, but that his drink had been almost exclusively Irish whisky. He maintained that during the whole 12 months previously to the onset of his illness he had not taken more than six pints of beer. I had no reason for doubting this statement, but his relatives were questioned separately; they also declared that his statement was quite true and that he had taken large quantities of whisky, but had not been a beer drinker. I separately questioned his friends at the public-house where he had been employed and they also confirmed his statement.

I obtained three samples of the kind of Irish whisky he had taken and tested them for arsenic, employing Reinsch's test, and performing the test in the same manner as I have recently done in the examination of a number of specimens of beer in which I have detected arsenic. In the samples of Irish whisky I could not detect the slightest evidence of arsenic. In order to determine whether arsenic could be detected in whisky by Reinsch's test I made a control experiment by adding a drop of liquor arsenicalis to whisky. With this control solution Reinsch's test gave a very definite reaction. Being informed that at the onset of his illness the patient had occasionally, but rarely, taken a small amount of port wine, I examined the port wine also for arsenic, but obtained no reaction. This case appears to show clearly, that peripheral neuritis can be caused by the drinking of whisky, and that whisky obtained from the same source as that drunk by the patient gave no reaction for arsenic with Reinsch's test. Whether whisky ever contains arsenic is a question for the analytical chemist to decide. As spirits are now being somewhat freely consumed in place of beer in Manchester and neighbourhood a favourable opportunity will probably exist for making observations on the occurrence of peripheral neuritis and its exact cause amongst spirit-drinkers. If arsenic can be excluded as the cause of peripheral neuritis from whisky drinking, as appears probable from the results of examinations of whisky recently published in THE LANCET and from the examination in the case just mentioned, the question remains to be decided whether the neuritis is due to the alcohol (as is generally believed), to furfural, or to other substances or impurities in the whisky. The answer to this question is of much importance with respect to the etiology of alcoholic neuritis. I am, Sirs, yours faithfully,

Manchester. R. T. WILLIAMSON.

"THE COUNCIL OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND."

To the Editors of THE LANCET.

SIRS,—I hardly suppose that any member of the College Council will condescend to reply to Dr. Albert Morton's query as to the utility of the annual meeting of Fellows and Members. Writing as one who has attended practically all of these meetings since their institution, I must say that I think the time has come when they should be either abolished or placed on a different footing. I imagine that the meetings were originally promoted owing to a dim feeling on the part of the Council that the College was becoming somewhat out-of-date, not to say fossilised. Except as an examining body no one thought anything about it. The munificence of Sir Erasmus Wilson created the necessity for a new Charter and gave the College the opportunity of a new lease of life upon broader and worthier lines than hitherto. Unfortunately, this opportunity has been missed. The Council established these meetings but had not the courage to effect what was their obvious corollary—the representation of the members. Consequently for years past matters have been at a deadlock. Year after year the farce which Dr. Morton describes is enacted, and latterly the majority of the Council are conspicuous by their absence.

It was for a long time hoped by many that the Council would agree to make the College a more popular professional institution and would place it at the head of all legitimate efforts for improvement and reform. This hope has hitherto been frustrated owing to timidity and want of confidence in the Members. The Council has allowed its mistrust of individuals to interfere with its higher duty towards the body corporate.

Nothing has been done to encourage Members to take an interest in the College. An outside organisation is allowed to practically summon the meetings and to prepare the resolutions. But for this organisation all interest in College affairs would have long ceased. At the last meeting the Council even refused a request to circulate the report beforehand among the Members. Many Members have striven hard to prevent the College from lapsing into its former mediæval and lethargic condition, but the Council has absolute power over its destinies and should this happen upon it will be the blame. I am, Sirs, yours faithfully,

Putney Heath, S.W., Jan. 22nd, 1901. W. G. DICKINSON.

THE CERTIFICATION OF LUNATICS IN POOR-LAW INFIRMARIES.

To the Editors of THE LANCET.

SIRS,—I write on a matter of legal and ethical interest. An alleged lunatic is brought by the police to the infirmary under Section 20 of the Lunacy Act, 1890. Next day the justice visits the infirmary and brings with him a medical man to examine my patient. This gentleman certifies for removal to an asylum. My longer knowledge of the case leads me to consider that it would be better to detain the patient in the infirmary for further observation. I admit that under Section 16 of the Lunacy Act the justice "shall call in *a* medical practitioner"—i.e., any "doctor" he chooses; but I submit that to pass over the usual medical attendant or surgeon under whose immediate care the patient is and to call in an outside man is contrary to the spirit, if not the letter, of the Lunacy Act. For does not Section 31, dealing with cases in which two medical certificates are required, specially enjoin that "whenever practicable" one "*shall*" "be under the hand of the usual medical attendant, if any"? And surely, if it be advisable in the interests of the private lunatic that his certification be controlled by the closer knowledge of his immediate medical attendant, then is it not equally desirable that the pauper patient should have the advantage of the opinion and skill of those who are in immediate and daily attendance upon him? Medical superintendents of infirmaries are, too, by virtue of their experience experts in lunacy diagnosis.

The Lunacy Act, therefore, in my opinion, requires altering in the interests of the lunatic—i.e., it ought to specially (and not indirectly) enjoin that the infirmary doctor (or "usual medical attendant" of the pauper) be certifier "whenever practicable." So much for law.

Finally, with reference to the ethical side of the question. What is the duty of a medical man when asked to visit a medical institution and examine the patient of a brother practitioner (for the justice cannot compel him to go)? Personally, I would absolutely refuse to be a party to such a practice at any fee however large. Of course I may be wrong, and I should like to have some expression of opinion from you on the matter.

This custom of calling in another surgeon exists, I believe, in a few workhouses and infirmaries, and in the public interest a discussion would be most useful. In my opinion the practice is a dangerous one and most unfair alike to the patient and his "usual medical attendant."

I am, Sirs, yours faithfully,

MARCUS MARWOOD BOWLAN, M.B., B.S. Dunelm., D.P.H. Cantab., Medico-Psychological Cert.,
Resident Medical Superintendent, St. George-in-the-East Infirmary; Visiting Medical Officer, St. George-in-the-East Workhouse.

Jan. 22nd, 1901.

P.S.—I have no monetary interest whatever in this matter.

THE INDICATIONS FOR LOCAL ANÆSTHESIA.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Jan. 19th, 1901, p. 197, is an annotation in which are detailed the circumstances attending the death of a child who died while undergoing an operation

at a provincial hospital. I have read the remarks, which are exceedingly succinct and concise, with great care, and personally I think your readers are under an obligation to the writer for the shrewd and experienced suggestions which are made. My thought on considering the subject-matter was that under the extreme and asthenic general condition of the little patient would not local anæsthesia for the performance of the abdominal operation have been more applicable than chloroform inhalation? I can, and so I know can many other surgeons, speak of the value and the perfect security of performing abdominal sections in patients after the previous employment in the area of the proposed operation of the hypodermic administration of eucaine. Without referring to a number of cases in which minor operations have been successfully and painlessly performed after the injection of the above-mentioned drug, I may further say that I have, without the slightest knowledge or exhibition of feeling on the part of the patient (as stated when questioned afterwards), performed the following abdominal operations: suprapubic cystotomy, an oöphorectomy, and within the last six weeks I have cut down upon the liver, explored it, and finally incised a large abscess, and clearing out the cavity concluded the operation, the patient (a young man) returning to his bed very little the worse for the procedure. I am, Sirs, yours faithfully,

Wolverhampton, Jan. 21st, 1901. T. VINCENT JACKSON.

THE EFFICIENCY OF LIQUID EXTRACT OF ERGOT.

To the Editors of THE LANCET.

SIRS,—In Professor Attfield's "Digest of Researches and Criticisms" on the British Pharmacopœia, prepared for the General Medical Council, he remarks that it is a matter of importance to collect opinions from practitioners as to whether or not the liquid extract of ergot is as trustworthy as the extract (ergotine); and if it is not to remodel the process for its preparation on that of the apparently satisfactory extract. Now ergotine is obtained by extracting ergot with alcohol, whilst the fluid extract is prepared by treating it with cold water. The universal experience of practitioners is, I think, that the latter is most uncertain in its effects and always liable to disappoint. It is also, as I can testify, of very variable strength and prone to decomposition. On the contrary, the solid extract popularly called ergotine is a most efficient drug and may be relied on to act almost with mathematical certainty.

I am, Sirs, yours faithfully,

Dublin, Jan. 19th, 1901. J. C. MCWALTER.

"ISOLATION HOSPITALS."

To the Editors of THE LANCET.

SIRS,—In reply to Mr. E. D. Agnew's letter on this subject in THE LANCET of Jan. 19th, p. 214, I beg to state emphatically that the second outbreak of scarlet fever did not occur till six days after the convalescents had returned home from the isolation hospital. The parents in each case are willing to testify to this, and to use the words of one of the mothers, "their skins were as clear as marble and their health perfect." The boy Neville returned from the hospital with an inflammatory discharge from the nose which was so severe that I have kept all the children of the house away from school—this is not yet quite well; and the desquamation suggested by Mr. Agnew in the case of the child Foster is some congenital cuticular shedding which she was suffering from when attacked and which I have often treated her for. There is not the slightest possible doubt that the second outbreak of scarlet fever was due to infection brought by the "return" cases from the Bishop's Stortford Isolation Hospital.

I am, Sirs, yours faithfully,

Stansted, Essex, Jan. 22nd, 1901. EDGAR PITTWAY.

OBTUSENESS OR ANIMUS?

To the Editors of THE LANCET.

SIRS,—In the review of my "Text-book of Pathology in Relation to Mental Diseases" in THE LANCET of Jan. 5th there is a statement so misleading and so damaging that I must request you to allow me to make an explanation regarding it. Fair criticism should always be welcome to an author, for he can invariably profit by it; unfair criticism, whether attributable to the obtuseness or to the animus of the reviewer, is for many reasons generally best left alone; but gross misrepresentation of facts, involving a serious reflection upon the author, can hardly be allowed to pass unchallenged.

The statement to which I refer is the following: "Many of the illustrations are taken from the standard works, such as those of Golgi, Lugaro, and others." Now, in the common acceptation of the term, a "standard work" is a book, and in this sense the writer of the review himself uses the word "work" in the two immediately succeeding sentences as well as in the first line of his critique. The information that your readers must therefore inevitably gather from the sentence I have quoted, taken in the context in which it stands, is that, in order to illustrate this text-book, I have been obliged to make free use of illustrations contained in already existing text-books. I have done nothing of the kind; the imputation is wholly false. The facts are that the "many illustrations" referred to by your reviewer comprise 14 figures out of 182 contained in my book, and that these 14 figures are taken, not from already existing text-books, but from recent papers in Italian neurological journals, and serve to illustrate that portion of the chapter upon the nerve-cells which purports to be nothing more than a critical digest of recent researches upon the normal and pathological histology of these tissue-elements. It is worthy of note that the "others" in the sentence quoted consist of two individuals.

I am, Sirs, yours faithfully,

W. FORD ROBERTSON.

Hill-square, Edinburgh, Jan. 14th, 1901.

*** We regret that the reviewer should have failed to make clear how many illustrations in Dr. W. Ford Robertson's book were not original and what was their exact source. We wonder that Dr. Robertson did not hesitate before charging the writer of a favourable review with obtuseness or animus.—ED. L.

ROBERT LOUIS STEVENSON: "FEVER" AND MOSQUITOES.

To the Editors of THE LANCET.

SIRS,—It is interesting to note that in 1888 Robert Louis Stevenson wrote of Atuona in "The Marquesas" as follows: "In Atuona, a village planted in a shore-side marsh, the houses standing everywhere intermingled with the pools of a taro-garden, we find every condition of tropical danger and discomfort; and yet there are not even mosquitoes—not even the hateful day-fly of Nuka-hiva—and fever and its concomitant, the island fe'efe'e, are unknown." Stevenson merely records the facts; but in these days this note, made by an accurate observer, of a spot where the absence of mosquitoes coincided with the absence of fever and of elephantiasis is worthy of remark.

I am, Sirs, yours faithfully,

Leeds, Jan. 18th, 1901. H. D. O'NEILL.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Beer Inquiry.

THE inquiry before the Manchester city coroner regarding the death of one of the sufferers from arsenical poisoning is concluded. The jury returned an open verdict, to which a rider was added that a vote of censure should be passed on Messrs. Groves and Whitnall, Limited, the brewers, Messrs. J. Nicholson and Sons, Limited, the sulphuric acid manufacturers, Dr. Morris, the consulting chemist, and Mr. Cook, works chemist to Messrs. Bostock, for carelessness. This, as the coroner said, is practically a verdict that death was due to poisoning by arsenic. He said, moreover, that he did not embody the censure in the verdict because it was a rider. He agreed with a remark of Mr. Fletcher Moulton that there was no evidence of carelessness on the part of the brewers. In his address to the jury the coroner said that the thanks of the whole community were due to Dr. E. S. Reynolds for the part he had taken in the case. He also

thanked Mr. C. H. Tattersall for the prompt and decisive action which he took.

Prestwich Union.

At the meeting of the Prestwich Board of Guardians on Jan. 17th, the overcrowded state of the workhouse was again the subject of discussion. During the previous fortnight there was a remarkable increase in the number of tramps admitted—from 69 to 200. No explanation of this seems to have been given, but doubtless the chronic or professional tramps have their seasons of migration like the swallows. There has been no exceptional severity of the weather to account for it; on the other hand, the weather has been unusually mild. There was also an increase of 50 people in the workhouse as compared with the previous year, and in the hospital some of the patients "had to sleep in a passage in the absence of room for them in the wards." As regards out-door relief, 3030 persons had been relieved during the fortnight as compared with 2589 in the corresponding period of last year. Yet this is said to be a time of great prosperity. The question of extending the buildings is to be considered. Mr. Jenner Fust had written to ask if anything had been done with regard to taking the children out of the workhouse. In answer to this inquiry it was said that "by arrangement with the Manchester guardians the indoor children ..... were sent to the Swinton schools and that there were no children in the workhouse over the age of four years." All who know the excellent management of the Swinton schools will be ready to acknowledge that they are a great improvement on any workhouse. At the same time, they must be looked upon as barrack schools, though of the highest class, so that there cannot be much approach to family life, and the small children must feel, though perhaps they would be unable to express, the lack of the personal interest and individual affection which even a foster-mother may give where she has only a few in her care. Then, too, the imbeciles and epileptics are a difficulty. The chairman said that till the former can be removed from the workhouse, or the workhouse can be enlarged, the classification of the inmates wished for by the Local Government Board cannot be carried out. One member hoped that in any scheme of extension proper provision would be made for these two classes who are "at present herded together, which ought not to be." This discussion showed that there was a wish to improve matters, but it ended with deferring "the consideration of further extension of the workhouse buildings till the new board has been elected in March."

Chorlton Union.

The guardians of the Chorlton Union met on Jan. 18th, and their proceedings, like those of their colleagues at Prestwich, show how humane is the feeling now actuating those who have the care of the very poor. A letter had been received from Mr. Jenner-Fust containing inquiries similar to those sent to the Prestwich Board of Guardians. It was stated in reply that as regards the children as many as possible were removed to the cottage homes at Styal, and that when certain extensions were completed the children still remaining in the workhouse would be taken there. The old men and women had been placed in a separate part of the workhouse and the men were allowed to go out every afternoon. The pauper suit had been abolished—which must be a comfort to sensitive souls, if any such are left. The guardians were "also anxious to provide room for aged married couples to live together." The question of the new dietary order of the Local Government Board was also considered. The reply was to the effect that the medical officer of the workhouse was quite satisfied with the dietary table now in force; that the new dietary would probably cost an additional £1000 a year; that it was not needed in the union and that it was not asked for by the Poor-law guardians of the country; and that they "were in favour of the new order being made optional till it had been proved practicable from its working by some unions in both urban and rural districts." *Fiat experimentum*, &c.

Manchester Union.

The Manchester Board of Guardians recently had to consider a letter similar in purport to those received by the Prestwich and Chorlton boards. The recommendations were: (1) That children should be removed from the workhouse; (2) that where out-door relief was granted to aged deserving persons it should be adequate in amount; and (3) that aged deserving inmates should be classed separately and should be granted special privileges. As to the first point the chairman said the great majority of the children were at the Swinton schools, and when some new arrangements were completed, all but the infants and the sick would be sent there. They were also meeting the wishes of the board as to the second point; and as to the third, should new arrangements for the removal of imbeciles and epileptics from the workhouse be made, either by the erection of a joint asylum or otherwise, the space so gained would enable the guardians "to proceed further in the direction of classification of the aged deserving inmates."

"Manchester Wheelers'" Generosity.

The body of cyclists known as the Manchester Wheelers at their annual meeting held about a fortnight since voted a sum of £50 to the Children's Hospital, Pendlebury.

Salford City Hospital.

At the meeting of the board of the Salford Hospital on Jan. 17th, the chairman reported the receipt of a donation from Mrs. Charlotte M. Pilkington, of Llandudno, of £1250, for the endowment of a bed to be called the "Hope" bed. A vote of thanks was passed.

Jan. 23rd.

WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Unqualified Practice censured by a Coroner.

THE disastrous results which so often follow the treatment of an injury by a "bone-setter" were conspicuously manifested at an inquest held at Merthyr on Jan. 18th. On the Saturday evening prior to last Christmas Day a young collier was carrying home a four and a half gallon cask of beer for consumption on Sunday. Incidentally I may remark that one result of the closing of public-houses in Wales on Sunday is the joint purchase on Saturday by two or three colliers of a small cask of beer which is usually emptied before Monday. The Merthyr collier dropped the cask on to his left foot and caused a compound fracture of the left toe. Instead of consulting Mr. T. J. Webster, the colliery surgeon, he went to a bone-setter named Price who, it appears, has a sufficiently large connexion to enable him to engage as his assistant his son-in-law who up to a few years ago worked as a collier. Price treated the wound with ointment, oil, &c., until the joint became gangrenous, when the patient was persuaded to go into the hospital where he died from septicæmia. The coroner, when summing up the evidence given at the inquest, spoke of the treatment of the bone-setter as "botching" and said: "I consider these kind of men are absolutely irresponsible people and they do a great deal of mischief. I am continually hearing of cases in which they make a terrible mess of patients, and I firmly believe that if a properly qualified doctor had attended this case at the commencement there would have been a very good chance of saving this man's life." It is particularly pleasing to be able to record these remarks of Mr. R. J. Rhys a legal coroner.

Medical Appointments at Swansea.

The Swansea board of guardians have decided to appoint a resident medical officer to the workhouse, and according to the report in the local newspapers it is proposed to engage a "young medical practitioner" at a salary of £100 per annum. The board has been well advised in adopting a qualifying prefix, for the salary offered is not very likely to attract a practitioner of much experience, and it is not improbable that the Swansea board may have as much difficulty in obtaining the services of a medical officer as the Bristol corporation who obtained no response to their advertisement for a medical superintendent of the Ham-green Fever Hospital, and have been obliged to raise the salary offered from £100 to £150 per annum. The guardians also propose to appoint a medical officer for No. 1 district of the Swansea Union who shall devote the whole of his time to the duties of his office and shall be paid at the rate of £120 per annum, together with the vaccination fees which are estimated at £200. This stipend can hardly be said to err upon the side of liberality.

Crematorium near Cardiff.

The crematorium which has been recently erected at Hull is not the first municipal crematorium to be established in England and Wales. Only last year the Cardiff corporation

through their medical officer of health drew public attention to the fact that cremation could be carried out in the crematorium on Flat Holm Island, which has been in an efficient state since 1895.

Police Surgeons in Cardiff.

There has hitherto been only one police surgeon for the whole of Cardiff and for some years the post has been held by Dr. T. Wallace. In consequence of the great increase in the size of the town the watch committee has now decided to appoint three surgeons, each with a defined area. One of these is to be chief surgeon and in addition to his divisional duties he will be required to examine police recruits and to examine lunatics if requested to do so by the magistrates. The druggists in the borough were desirous of dissociating the dispensing of drugs from the duties of the police surgeons and urged the appointment of three police druggists, but the watch committee would not entertain the suggestion.

Death-rate of Caerleon.

The unusually low death-rate of eight per 1000 is reported from Caerleon in Monmouthshire for the year 1900.

Remuneration of Colliery Surgeons.

The medical practitioner of to-day amongst the mining class is not so happily circumstanced as formerly, when the doctor, the parson, and the manager were regarded as the three important personages in each colliery township or village, and all lived in contentment and happiness. To-day, however, when the colliers have forced into them all the ethics and vocabulary of paid agitators and are tutored in all the seductive influences of socialism they become discontented among themselves and adopt an attitude of tyranny towards any persons whom they may have in their power. In several parts of South Wales and Monmouthshire, especially where the poundage system is in vogue, disputes are pending on the ground that the medical man earns too much money. At present the rate of wages are exceptionally high, and upon this basis the amateur statistician computes the salary of the colliery surgeon. He gives little or no thought to the recent five months' strike when the medical fees were *nil*, though drugs and assistants had to be provided. Now that an opportunity arises for recouping the loss then entailed the men agitate for a reform in the mode of payment. Noticeably is this the case at Tredegar, where Mr. G. A. Brown practises, and at Cwmsiflog, where Mr. R. T. E. Davies holds the appointment of colliery surgeon. In each of these districts the colliers wish to appoint a surgeon at a fixed salary and to themselves defray all the expenses of drugs, assistants, &c. The colliery surgeons, on the other hand, prefer to be paid by a poundage—usually 3*d.* in the £1—upon the men's earnings and to discharge all the expenses of the practice.

North Devon Infirmary, Barnstaple.

At the quarterly meeting of the governors of the North Devon Infirmary held on Jan. 15th it was decided that the salary of the house surgeon should be £80 instead of £120 as formerly. There was a considerable discussion in which it was urged that the reduction would be mistaken economy and there was an amendment that the salary be £100. The former house surgeon had received £50 for acting as secretary to the infirmary, but it was determined in future that an honorary secretary be appointed, £20 being allowed for the assistance of a clerk.

West Cornwall Dispensary and Infirmary, Penzance.

The annual meeting of the friends of the West Cornwall Infirmary and Dispensary was held on Jan. 16th, under the presidency of Prebendary Hedgeland. The report stated that 1629 out-patients had been treated during 1900, as against 2171 in 1899; 115 in-patients had been admitted, as against 165 in the previous year; and 68 patients had been sent to the convalescent home. The financial statement showed that the income amounted to £882 and the expenditure to £879. The income of the convalescent home had been £403 and there was a favourable balance of £88.

Bath Eastern Dispensary.

The annual meeting of the friends of the Bath Eastern Dispensary was held on Jan. 17th, under the presidency of the Mayor of Bath. The medical report stated that 4364 patients had been treated during the year, including 899 patients who had been attended at their homes. The financial statement showed that the income amounted to £636 and that a favourable balance of £61 remained. The committee added that there had been considerable difficulty in obtaining the services of a resident medical officer owing to the war in South Africa, but recently Dr. W. H. Lowman had been appointed, and Mr. O. A. G. Collins had kindly performed the duties during the vacancy.

Health of Cornwall.

The report of the sanitary committee of the Cornwall County Council for 1900 shows that during the year the birth-rate was 24·4 per 1000, as against 24·4 in 1899. The general death-rate was 16·4 compared with 15·8 in the preceding year. The zymotic death-rate was 1·01 per 1000, which is practically the same as in 1899. The slight increase in the death-rate is attributed by the committee to the severe epidemic of influenza in the early part of 1900.

Jan. 22nd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Urban Mortality in Scotland in 1900.

THE estimated aggregate population of the eight principal towns of Scotland at the middle of 1900 was 1,606,935. The series of the Registrar-General's monthly reports applicable to these towns being now completed for the year, an examination of them shows that during that period the total number of deaths was 33,368, or at the rate of 20·76 per 1000 inhabitants. Of the deaths 16,393 occurred in Glasgow, 5878 in Edinburgh, 3391 in Dundee, 2864 in Aberdeen, 1230 in Leith, 1608 in Paisley, 1298 in Greenock, and 706 in Perth. The respective annual rate of mortality on the estimated population of the individual towns was as follows per 1000 inhabitants: Glasgow, 22 03; Edinburgh, 19·44; Dundee, 20·24; Aberdeen, 19·05; Leith, 15 67; Paisley, 20·55; Greenock, 21·10; and Perth, 22·91. Of the 33,368 deaths, 4543 were due to specific febrile or zymotic diseases, three to parasitic diseases, 155 to dietetic diseases, 6355 to constitutional diseases, 2454 to developmental diseases, 17,027 to local diseases, 1396 to violence, and 1435 to ill-defined or not specified causes. Of the aggregate general mortality 12,079 were deaths of children under five years of age. With regard to the more familiar zymotic diseases, measles was marked in April, June, and July in Glasgow; in November and December in Aberdeen; in January, February, March, and July in Paisley; and in January in Perth. Whooping-cough prevailed in Glasgow in April, May, June, July, August, November, and December; in Aberdeen in May; in Paisley in March and July; in Greenock in August, September, October, November, and December; and in Perth in January, February, and March. Influenza was marked in Edinburgh in February. in Aberdeen in January and February, in Paisley in January, and in Perth in February and March, while enteric fever was prevalent in Paisley in September.

Edinburgh University Court.

At a meeting of the Edinburgh University Court on Jan. 14th the following were appointed additional examiners for the medical degrees:—Mr. J. Bretland Farmer (botany), Dr. John Gibson (chemistry), Dr. Robert Howden (anatomy, including anthropology), Dr. D. Noel Paton (physiology), Dr. William Russell (pathology), Dr. John C. M'Vail (medical jurisprudence and public health and sanitation, sanitary law, and vital statistics), Dr. Allan Macfadyen (public health laboratory work), Dr. John Shaw McLaren (surgery), Dr. James O. Affleck (practice of medicine), Dr. Alexander James (clinical medicine), and Dr. John W. Ballantyne (midwifery).

Cremation in Scotland.

The annual meeting of the Scottish Burial Reform and Cremation Society was held in Edinburgh on Jan. 16th, Professor Sir Henry Littlejohn being in the chair. Sir Henry Littlejohn, in moving the adoption of the report, which has been already alluded to in these columns, said that in 1865 Professor Sir James Simpson directed his attention to the evils connected with the intermural interments and was exceedingly anxious to have a crematorium established. Sir James Simpson fixed on Hunter's Bog as a suitable site, but public opinion was strongly opposed to such a violation, so to speak, of the sanctity of that spot. Sir James Simpson had also expressed to him

his determination to be cremated. Sir Henry Littlejohn then went on to relate how, through the request of Dr. Robert Lee, he had been induced to investigate the condition of Greyfriars Churchyard and how, as the result of his investigations, the town council at once agreed to the closure of that burying-ground. One churchyard after another was taken up and closed, ending with that of St. Cuthbert's. As one of the directors of the society he had carefully examined the crematorium at Glasgow and had been much pleased with what he had seen and with the manner in which the operation of cremation was carried out there.—The report submitted by the honorary secretaries stated that the number of cremations in Scotland showed a steady yearly increase, the total number since the opening of the crematorium at Glasgow being 75. Dr. Ebenezer Duncan, speaking in favour of the adoption of the report, said that the late Duke of Argyll left definite instructions that his body was to be cremated, but these instructions were disregarded by his relatives; also that the late Marquis of Bute would have warmly advocated cremation if the Church of Rome had withdrawn its opposition.

Appointment of Medical Officer of Health of Leith.

The post of medical officer of health of the burgh of Leith, which had been rendered vacant by the resignation of Dr. W. Leslie Mackenzie on his appointment as medical superintendent under the Local Government Board, was filled up on Jan. 17th at a special meeting of the Leith Town Council by the appointment of Dr. William Robertson of Paisley. The new medical officer of health will begin his duties not later than Feb. 15th at a salary of £400 per annum.

The Scottish National Red Cross Hospital.

The medical and surgical officers of this hospital who have recently returned from South Africa were entertained at a complimentary dinner in Glasgow on Jan. 18th. The Marquess of Breadalbane, K.G., occupied the chair and there was a large attendance of medical men, including Professor Chiene, Dr. G. T. Beatson, Professor H. E. Clark, Dr. John M. Cowan, Dr. John Aitken, Dr. Alexander Garrow, Dr. Robert Stirling, Dr. George M'Intyre, &c. In reply to the toast of "Our Guests, the Officers of the Hospital Staff," Colonel Cayley, R.A.M.C., Commandant, and Professor H. E. Clark gave an account of the work performed by the hospital and referred generally to the demands made on the medical profession by the conditions of war. Sir David Richmond, a member of the South African Hospital Commission and a former Lord Provost of Glasgow, bore testimony to the excellent work performed by the Scottish Hospital which he had visited at Kroonstad. In the afternoon of the same day a reception was held by the Ladies' Executive Committee to meet the nurses of the hospital. This also was largely attended. The main credit of the organisation of the Red Cross Hospital is due to Dr. G. T. Beatson and Dr. Donald Mackintosh who by their enterprise and public spirit secured an appropriate method in which the patriotism of the Scottish people could express itself. At one time some petty local jealousies threatened to interfere with the success of the movement, and though these were not altogether allayed they exercised no practical effect on what was really a national enterprise. The best testimony to the satisfactory equipment of the hospital was the fact that the Government offered to purchase it as it stood. In reply to this offer the committee resolved to present it as a free gift on condition that it was continued under the name of the Scottish National Red Cross Hospital, and it is on these terms that, with some members of the original staff, the hospital now remains in South Africa.

Interesting Legal Case.

A medical man in Glasgow has recently acquired a house in one of the residential terraces in the west-end of the city which he proposes to use as a private hospital or nursing home and has found himself in consequence involved in legal proceedings, for the proprietors of the neighbouring dwelling-houses object to his scheme and have sought to frustrate it by an action in the Court of Session. In this, however, they have not been successful. Their case was based upon an agreement which provided that the buildings erected on the ground concerned "shall permanently continue as dwelling-houses and shall not be converted into shops, warehouses, or trading places of any description," and they contended that the proposed use of the house amounts to the conversion of it into a trading place for the purpose of money-making. They also urged that "the unpleasant sights and sounds, as well as the unpleasant odours of antiseptics and drugs, the great traffic entailed by the arrival and departure of patients, nurses, consulting doctors, friends of patients, and [most unkindly] undertakers" constitutes a nuisance in such a neighbourhood. In reply the defender denied that any nuisance would be created and stated that the house "was not intended to be a direct source of profit." He therefore claimed that there was no breach of the agreement preventing the establishment of a trading establishment, and for this contention he has now received the sanction of the law.

University of Glasgow.

The official statistical report for the year 1899–1900 has just been issued. It contains, as usual, a full list of the University officials and their salaries, and numerous tables showing the number of the students in the various classes and the graduates in the different faculties. In medicine there were 221 degrees conferred. Three of the M.D. graduates were awarded "Honours" and six received "Commendation." Only one M.B. gained the highest distinction, but six were "commended." Amongst the benefactions received during the year are a sum of £11,000 from the trustees of the late James B. Thomson, to be applied in the reconstruction of the anatomical department; a sum of £1000 given by Lord Kelvin, to be used for the encouragement of experimental investigation; £2500 from the late Rev. Alex. Robertson to found a lectureship in defence of the Christian religion; and numerous smaller amounts for the establishment of bursaries, prizes, &c.

Hospital Sunday in Aberdeen

The results this year have been rather disappointing, as there were collections in more churches than was the case last year. The total amount subscribed up to date is about £1200.

Outbreak of Small-pox in North Scotland.

Several cases of small-pox have been discovered in Burghead (on the Moray Firth) and Elgin, and the infection has been traced as coming from Glasgow. Three cases have also occurred in Aberdeen since the beginning of the year.

Epidemic of Small-pox in Glasgow.

Glasgow is suffering from a somewhat severe epidemic of small-pox. Upwards of 50 fresh cases have occurred since yesterday, making a total of 253.

Jan. 22nd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Irish Local Government Board and the Isolation of Tuberculous Patients.

THE Irish Local Government Board have notified the Downpatrick Board of Guardians that, having regard to the infectious nature of pulmonary tuberculosis, it was, in their opinion, highly desirable that provision should be made in workhouse infirmaries for the treatment of persons suffering from this disease in separate wards—that was to say, wards to which patients otherwise affected were not admitted. The guardians have been requested to be so good as to give this matter their early and careful consideration. The inspectors of the Board have from time to time called attention to the matter and the guardians are now strongly advised to have steps taken to isolate consumptive patients. The medical officer of the workhouse was on Jan. 12th directed to prepare a report on this most important question for the guardians.

Medical Fees.

One of the frequently discussed questions in medical circles came up for a legal decision before the Recorder of Belfast on Jan. 10th. Dr W. Calwell, of Duncairn-gardens, Belfast, sued a man in his neighbourhood to recover one guinea "for professional services rendered." Dr. Calwell had been engaged to attend the wife of the defendant at the time of her confinement, but when this occurred he was not called in, a practice apparently common enough among the working classes. Evidence having been given Dr. Calwell was nonsuited on a technical point, as he based his action "for services rendered" instead of upon a "breach of contract." It is a pity that such an unsatisfactory conclusion was arrived at, as medical men are sometimes put to

great inconvenience and distinct loss by treatment such as Dr. Calwell received in this case.

Bangor Dispensary, County Down.

Mr. J. F. Mitchell, of Newtownards, has been elected dispensary medical officer for the Bangor district of the Newtownards Union at a salary of £110 per annum, and £14 per annum as medical officer of health to the Bangor Rural District, and £10 per annum as medical officer of health of the Urban District of Bangor, together with vaccination and registration fees.

The Belfast Lunatic Asylum.

At the monthly meeting of the committee of this asylum held on Jan. 14th the resident medical superintendent, Dr. William Graham, submitted a valuable report upon the villa or colony type of construction, in which he pointed out that the special features in this type of asylum construction are the segregation of the inmates into communities, where they live in more domesticated and home-like style than would be possible in a large building. The accommodation for patients consists of two sections, one a hospital with special arrangements and the other a congeries of villas with simpler arrangements. The advantages claimed for this system are: (1) more homeliness and less institutional character; (2) more careful classification of patients; (3) lessened cost of construction; and (4) facility for enlargement. Two great advantages of the villa type are: (1) a small part may be erected and occupied bit by bit before the completion of the whole; and (2) in case of enlargement a villa or villas can be added as required without any disturbance of existing arrangements. An animated discussion followed, and it was finally decided to print and circulate the report among the members of the committee and to consider the matter at the next meeting of the committee, the medical superintendent in the meantime to collect all possible information in regard to the matter. At the same meeting the report of the inspector of lunacy, Mr. G. P. O'Farrell, was brought forward, in which it was pointed out that the overcrowding on the female side of the asylum was very serious, and that the necessity for relieving it had become pressing and urgent. While the estate at Purdysburn had been acquired five years ago no steps had yet been taken towards the actual building of any part of the new asylum. Although all credit was due to the medical superintendent for his efforts to modernise the old building, yet nothing, the inspector said, could materially alter the back part of the asylum, which was dingy and cheerless in the extreme, and it was here that the larger part of the accommodation was situated. When the forward condition in Scotland in reference to the treatment of the insane was contrasted it was remarkable how little a desire for progress pervaded the general population of the North of Ireland. Unless some definite action was taken in reference to the female patients he (Mr. O'Farrell) could not report to the Lord-Lieutenant that the committee had fulfilled the duty of providing and maintaining sufficient accommodation for the lunatic poor of the city which was imposed on them by the Local Government (Ireland) Act, 1898, and the fulfilment of which duty was made a condition to the payment of the Government grant in aid of maintenance. The inspector regretted that pulmonary phthisis (the most fatal of all diseases amongst the insane in Irish asylums) showed a tendency to increase, as might be expected in an old and overcrowded institution. This report of the inspector, so serious in the faults which it points out in the present condition of the asylum, it has been arranged shall be considered at the next meeting of the committee. It is to be hoped that, taken in connexion with the report of the medical superintendent on the villa type of asylum, we shall in the end have in Belfast an asylum constructed on modern lines worthy of the city and of the North of Ireland.

Jan. 22nd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Magnetisers officially declared to be Illegal Practitioners.

THE medical profession has, from a professional point of view, recently won a signal victory in the law courts—a victory, too, which is all the more gratifying because such victories are so rare. The Court of Cassation has given a final judgment in a matter which has been undecided for years, and has pronounced that persons who treat illnesses by magnetism without possessing the degree of doctor of medicine are guilty of the offence of illegal practice. Hitherto the law on the point has been very indecisive from the legislative point of view. The law of 1892, which laid down regulations for the practice of medicine in France, says absolutely nothing about magnetisers—a fact all the more singular when it is remembered that these gentry had several times been mentioned in the course of the Parliamentary debates which preceded the passing of the law. On this account the courts of law, in the event of a magnetiser being prosecuted for illegal practice, gave the most contradictory judgments. In 1893 the Tribunal of the Seine convicted a magnetiser and found him guilty of illegal practice. In 1894 a woman was convicted of the same offence by the Tribunal of Mans, but she appealed to the Angers Court of Appeal, which acquitted her, giving as its opinion that she was not guilty of illegal practice because she used neither drugs nor surgical manœuvres. This judgment had the result of filling the whole district with magnetisers who pursued their industry unchecked. In 1896 a magnetiser, by name Mouroux, who was prosecuted by the Medical Association of Angers, was acquitted by the Correctional Tribunal of that town; the association appealed to the Angers Court of Appeal, which, however, only confirmed the judgment. The Union of the French Medical Associations came to the aid of the Angers association and the case was carried to the Court of Cassation so that a final judgment might be obtained in a matter affecting the whole medical profession. The Court of Cassation, however, had its hands quite full with the Dreyfus *affaire* and took four years to decide the question. During the interval, however, in 1898, a magnetiser was convicted by the Tribunal of the Seine. At last, on Dec. 26th, 1900, the Court of Cassation delivered judgment in the Mouroux case. The counsel in charge of the case (*conseiller rapporteur*) had decided in favour of the magnetiser, but the court, evidently influenced by the remarkable report laid before the recent Congress of Deontology by M. Dupré and M. Rochet, had no hesitation in giving judgment against magnetism. As a matter of fact the situation was very delicate. The magnetiser argued that as all medical men declared that the practices of his fraternity were pure charlatanism and of no value whatever, he and his colleagues employed no real medicaments and that therefore they could not be guilty of illegal practice. True, they might be accused of swindling, but it would be necessary to prove that they had demanded money from patients—a thing almost impossible to confirm and one which would need a careful consideration of every particular case. The counsel for the medical associations got out of the difficulty very cleverly. He argued that magnetism was a therapeutic agent of the very first order, one which should not be used except by skilled hands and the use of which should be forbidden to those who had not a medical diploma. It certainly cost the dignity of the medical profession something to allow such honour to the fantastic gesticulations of magnetism, but it was the only way in which to arrive at the desired result—namely, the forbidding of magnetisers to "practise."

Muscle Serum.

At the meeting of the Academy of Sciences held on Dec. 31st M. Riche proposed to call by the name of "muscle serum," or "myoserum," the juice obtained by pressure from meat, which is, according to him, the sole portion of the raw meat gifted with curative properties as regards experimental tuberculosis in the dog. Using raw beef in a strong press 33 per cent. of juice can be obtained. It is a red fluid, amphoteric or feebly alkaline in reaction, and coagulable by heat or nitric acid. Besides mineral matters one kilogramme contains about 50 grammes of albuminoids, of which 10 per cent. is hæmoglobin. Despite its richness in albuminoids the serum passes through filter paper like water and so can be easily freed from its fat and formative elements. It is very unstable and even if kept at a temperature of 0° C. putrefies in a few days. In summer at ordinary temperatures it undergoes change within an hour or two. It must therefore be used as soon after preparation as possible. Administered by the mouth to dogs in doses of 20 cubic centimetres per kilogramme of body-weight it brought about a cure in cases of experimental tuberculosis. Given subcutaneously or intravenously it is very toxic and a dose of five or even three cubic centimetres per kilogramme of body-weight brought about a very notable

lowering of blood-pressure. The animals vomited and had bloody diarrhœa, dying in from 24 to 48 hours, or sometimes less, in a state of coma. Post-mortem examination showed intense congestion of the intestines and of the liver; the coagulability of the blood was not altered, neither were the kidneys affected. When coagulated by heat the serum was found to be not toxic.

Separate Wards for Noisy or Delirious Hospital Patients.

A recent meeting of the Hospital Medical Society was the scene of an informal discussion as to the best remedy to be found to prevent those deplorable cases in which delirious patients try to commit suicide, attack their fellow sufferers, or attack the nurses. M. Le Gendre suggested that in every hospital there should be a special ward for such patients, so that they could be carefully watched. As a matter of fact no such facility exists. If a patient goes out of his mind and his state of health permits he is sent to a lunatic asylum and the ease with which such transference is made on a simple order of the head of the hospital has given rise to some objections which are quite justified. The custom is unjust to ordinary lunatics who require various certificates before they can be placed in the asylum. Only too often the head of a hospital simply gets rid of a troublesome patient by sending him to an asylum, and very often such patients are unfairly tainted with the stigma which attaches to anyone who has become a definitely certified lunatic. On the other hand, there is no doubt that noisy or delirious patients, whether suffering from the delirium of fever, from post-operative mania, or from puerperal mania, are a constant source of danger to themselves, to other patients, and to the nurses. The society was in perfect accord with the proposal of M. Le Gendre and various speakers related instances of the imperfect arrangements existing at the hospitals with which they had to do. M. Chauffard said that things were so bad at the Cochin Hospital that visitors were not allowed. M. Barth said that at the Necker Hospital there was but one male night superintendent and one female, and added that the organisation of the hospital was as bad as before the Revolution except that they no longer put two or three patients into one bed. A complete plan of reform should be drawn up and submitted to the Assistance Publique. M. Le Gendre, however, preferred to demand reforms one by one as a plan more likely to meet with success, and the society accordingly resolved that every hospital should provide a ward for the isolation of those temporarily mentally afflicted and that copies of this resolution should be at once forwarded to the Director of the Assistance Publique, to the Municipal Council, and to the Minister of the Interior. A committee was also elected to deal with the question of hospital reform, composed of M. Millard, M. Faisans, M. Troisier, M. Le Gendre, M. Chauffard, M. Barth, and M. Beckler.

Jan. 21st.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Tetanus following Injections of Anti-diphtheritic Serum.

THE greatest consternation has been caused during the past week throughout Northern Italy by the occurrence of a number of deaths from tetanus following upon the injection of anti-diphtheritic serum. It appears that diphtheria has of late been very prevalent in Lombardy and Venetia, and a large demand had in consequence arisen for the curative serum prepared by the Istituto Sieroterapico of Milan. The first alarm came from Valdobbiadene in the Province of Treviso, where four children who had been treated for diphtheria with the serum fell victims to tetanus. Reports of similar tragedies followed from Chiudino in Bergamo, from Prato Sesia and Boca in Novara, from Brescia, and from Milan itself, making a total of some 20 cases, all of which had been injected with serum from the above-mentioned institute. The Government promptly ordered the serum to be seized wherever it could be found and set on foot a searching inquiry in order to discover how it came to be contaminated. At present there are only surmises on this point, but it has been already ascertained from the register of the institute that the serum used in most of the fatal cases belonged to one particular lot, decanted on Nov. 22nd from a flask containing three litres into a series of 306 vials, each of which was closed, sealed, and numbered, and the whole of which were consigned to the firm of Erba of Milan, by whom again they were distributed to purchasers in the same condition as that in which they had been received from the institute. One case of tetanus, that at Milan, appears, however, to have been injected with serum prepared towards the end of December. Many more injections are known to have been made in the last few days with serum belonging to the same suspected stock with results which will doubtless prove equally disastrous. The Istituto Sieroterapico of Milan, which would thus seem to be responsible for a terrible mistake, is under the general direction of Professor Belfanti, assisted by Dr. Airoldi and Dr. Zenoni, to the latter of whom is entrusted the preparation of the anti-diphtheritic serum. When visited by the Inspector-General of Sanitation, Santoliquido, everything in the institute appeared to be in perfect order and a minute investigation will evidently be necessary to disclose the origin and author of the fatal blunder. Fortunately a sample was preserved of each lot of serum as it was prepared, so that it will be possible to subject to microscopic, chemical, and bacteriological analysis all that has been issued from the institute and so to discover any that may have been contaminated, and this is now being done. So far no tetanus bacilli have been detected in the suspected serum and it is thought that the symptoms to which its injection into the diphtheria patients gave rise may have been caused by tetanus toxin alone. As is only natural, under the fear inspired by these fatalities many parents have already refused to allow their children to be treated with antitoxin injections—a very deplorable fact in view of the prevalence of diphtheria and the undoubted value of good serum in its treatment. The Superior Council of Sanitation have under consideration a law for regulating the manufacture and sale of serum, vaccine virus, &c., with the object of preventing the occurrence of such fatal mistakes in the future.

The Proposed Amendment to the Law regulating Foreign Practice in Italy.

The exact scope of the alteration proposed in the present law relating to foreign practitioners will be seen from the subjoined translation of the new clause of the Bill which has now been presented by Santini for the approval of the Chamber of Deputies. The article in the sanitary law under which foreign practice is now sanctioned, after forbidding the exercise of the profession of medicine, &c., to those who have not been duly qualified by some authorised licensing body in Italy, concludes as follows:—

> From this prohibition are excepted foreign physicians and surgeons expressly called for special cases, and those who, possessing the diploma of a foreign university or school of medicine, exercise their profession among foreigners only.

The proposed law substitutes for this clause the following:—

> From this prohibition are excepted foreign physicians and surgeons expressly called for special cases or attached exclusively to the service of a particular person or family whom they accompany in travelling, and those who, possessing a diploma of a foreign university or school of medicine, exercise their profession among their compatriots only, always provided, however, that they [i.e., the foreign physicians and surgeons] belong to a State which accords to Italian physicians and surgeons reciprocity of treatment in regard to academic degrees and freedom of practice.
>
> On the same conditions as the above those foreign physicians and surgeons are also excepted who possess diplomas of universities or schools of medicine considered by the Superior Council of Public Instruction as equivalent to those conferred by the universities or schools of medicine in Italy.

Jan. 16th.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

Plague in Constantinople.

ON Jan. 7th a man died here with symptoms of bubonic plague. The deceased, who was a boatman in the service of the police, fell ill at Beicos, a village on the Asiatic shore of the Upper Bosphorus, and for about eight days lay at a coffee-house, where he was examined by several medical men who considered the disease to be pneumonia due to influenza which is at present epidemically prevalent in Constantinople. Ultimately he was conveyed by his friends to Scutari, a suburb of Constantinople, and a bubo was there found in his left groin. The authorities then removed him to

the hospital of the Civil Medical School at Katirza, where he died in a few hours. When medical men from the Bacteriological Institute arrived for the purpose of making a microscopical examination of the contents of the bubo it was found that rats had entered the room where the body lay and had eaten the left side of the mouth, a portion of the left cheek, and the external genitals. The pulp of the bubo contained an enormous number of plague bacilli. All the places at which the deceased had stayed and the steamboat on which he had travelled from Beicos to Scutari have been disinfected, the small boats used for his conveyance from Scutari to Katirza have been burned, all persons who have been in contact with him are under strict observation and their wearing apparel has been burned, the officials of the hospital have received injections of anti-plague serum, and the hospital as well as the medical school has been surrounded by a sanitary cordon. But the rats! It has several times been proposed at the International Sanitary Commission that a stock of the Danitz culture for the destruction of rats should be brought from Paris, but this has not yet been done. In Russia, Roumania, Bulgaria, and Greece arrivals from Constantinople are now subjected to disinfection and 10 days' quarantine. The International Sanitary Committee was convoked three times last week in order to consider the measures to be taken for preventing the spread of the disease. At these meetings a feeling was expressed that the city ought to be thoroughly cleansed, that the inspection of dead bodies should be better attended to, that careful observation should be kept upon places of public resort, such as refreshment houses, cafés-chantants, and bazaars, and that the public closets should be cleansed and supplied with disinfectants. The British sanitary commissioner, however, declared that it would be very dangerous to have a thorough cleansing of the city, and the sanitary commissioner of the United States of America proposed that the Turkish Government should be informed that it was almost hopeless to expect good results from attempts to cleanse cities where the streets are narrow, badly paved, and bordered by high buildings, and where the houses are built back to back and so disposed as to exclude sunlight and fresh air. The American commissioner thought that the Government ought to prohibit the building of back-to-back houses and he quoted the case of Bombay where great sums of money had been spent almost to no purpose in cleansing and disinfecting; but the council did not take action in accordance with his proposals because it would obviously be a long time before the good effects of such measures could make themselves felt.

Public Health of Constantinople.

Constantinople is a city which in many respects falls short of the requirements of modern hygiene. The houses are badly built, and there are very few of them which the sun enters; the streets are exceedingly narrow and not paved, except some of the principal ones; and the water-supply is very bad, although the charge made to the consumer is high. It is indeed astonishing that the death-rate is not greater than it is. The number of the inhabitants is not exactly known, but it is estimated at about 800,000. The number of deaths of civilians registered during the 12 months from Jan. 1st to Dec. 31st, 1899, was 12 412; the number of deaths in the army is not made known. Of these deaths 135 were due to diphtheria, 100 to measles, 196 to small-pox, 318 to typhoid fever, and 752 to acute inflammation of the lungs. From Jan. 1st to Dec. 31st, 1900, the number of deaths registered was 12 372, of which 80 were due to diphtheria, 86 to measles, 11 to small-pox, 293 to typhoid fever, and 782 to acute inflammation of the respiratory organs. During the last month of autumn there was a widespread epidemic of scarlet fever but the number of deaths from this cause is not known. The deaths from cholera infantum, or gastro-enteritis in children, were as follows during some of the months of 1900: 11 in May, 89 in June, 107 in July, 74 in August, and 24 in September. If a medical man who understood the value of statistics were at the head of the Bureau de la Mortalité of the Sanitary Board better data would be available for arriving at the death-rate of Constantinople.

Institute for Foundling Children.

On Jan. 13th (Dec. 30th, old style) a number of the destitute children of Pera had their new year fête, when the ladies who assist Dr. Zavitziano in the work of caring for the foundlings of the Greek church in Pera distributed toys and pudding. The institute for the reception of these children has now been established for nearly 12 years and has given very good results, the death-rate being comparatively low. During the epidemic of cholera infantum which prevailed from last June to the middle of September there was no death among them from this cause, a result which is perhaps attributable to the treatment by cold baths.

Murderous Attack on a Medical Man.

It is announced that Dr. Sakellarios (the attempt on whose life was mentioned in THE LANCET of Jan. 12th, 1901, p. 142) is now better and will probably be soon able resume practice.

Medicine under the Greek Emperors.

At two of the last meetings of the Biological Section of the Greek Literary Syllogos, Dr. Gabrielides, ophthalmic surgeon to the French Hospital, delivered two very interesting lectures on General Medicine, Medical Organisation, and Ophthalmology under the Byzantine Empire. He quoted the monk Meletius of Tiberopolis the Great in Lydia, Nemesius the archbishop of Palestine, and Photius the patriarch of Constantinople, the latter of whom makes mention of Oribasius, Aetius, Theon, and other medical writers. Dr. Gabrielides discussed the army medical service of the Empire and referred to the case of the Emperor Andronicus who fell ill with "lethargy" at Dedemoticho and was treated by the ἀρχιάτρος Varys. He also mentioned that Aetius was raised to the rank of nobility with title of Count of Opsikion—Κομῆς τοῦ Ὀψικίου—a place in Bithynia.

Jan. 15th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The United States Soldier's Tropical Ration.

SOME short time ago a board was appointed by the United States Government to report to the Secretary of War upon the tropical ration of the American troops and to recommend changes therein. A board sitting in the Philippines had advised that the fresh-meat ration be reduced in quantity, but in the report of the board recently handed in to the Secretary this suggestion was strongly condemned. The board remarked that the recommendation that the fresh-meat ration be reduced in quantity was so opposed to all the teachings of experience both in the United States and in Cuba and Porto Rico that the board was unable to accept this recommendation as conclusive without further information. As the result of interviewing a number of officers and other persons who had been in the Philippines and taking all sources of information together the board came to the opinion that no fixed reduction should be made in the meat ration. "Any ration adopted must comprise a meat, a bread, a vegetable, a seasoning, and a coffee, sugar, and fruit component, and when a careful comparison is made between the articles now composing these components, and all those suitable for the purpose, it will be readily seen that no important addition can be made to the list, and that, in fact, the articles comprising the ration must be about the same in all climates. The problem is really to find such a ration as will by substitutions among its various ingredients be suitable for all climates. Such a ration should possess the following qualifications: it should be nutritious, sufficient in quantity, easy of transportation, and should consist of as few articles as possible. It should be proof against all climatic changes and susceptible at all times to the greatest flexibility and elasticity, suitable to either the tropics or polar circle, and capable of affording such changes in diet as will be best calculated to preserve the health of the soldier under the conditions surrounding him." The most important change recommended by the board in the diet is that an increased amount of sugar be supplied and that a reduction be made in the fruit supply. There has been for years a very considerable difference of opinion among those persons who have dwelt for any length of time in tropical countries as to what is the most suitable food for white men there. Some contend that a thorough change in diet must be made to preserve good health. Others are as strongly of the opinion that if a white man in the tropics endeavours to live on the same description of food as does the native he will soon lose both energy and strength

Probably the true solution of the difficulty will be found in the happy mean, and by finding out by individual experience what diet is best suited to the climate. So far, however, as soldiers are concerned, in whose case the diet must be more or less a fixed one, the majority of those who have gained experience in Cuba and the Philippines would seem to have reached the conclusion that it would be injudicious to decrease the fresh meat ration.

Yellow Fever in the United States in 1900.

There was no yellow fever reported in the United States during the year 1900 until the month of November, notwithstanding the fact that the disease has prevailed extensively in Rio de Janeiro, in Vera Cruz, and in Havana. In November a few cases were reported in Natchez too late in the season to give rise to much alarm. The preventive measures for 1900 were commenced last winter when a medical officer of the United States Marine Hospital Service was detailed to inspect and report upon the sanitary condition of all the towns of Central America both on the Pacific and Atlantic coasts. At Havana, says the Marine Hospital Service report of Dec. 22nd, 1900, where the disease has prevailed extensively and is still prevailing, the maritime quarantine regulations have been enforced by officers of the service. As a precautionary measure a camp was re-established in Florida. Regarding the cause of yellow fever the findings of the Commission of the Marine Hospital Service, identifying the bacillus icteroides of Sanarelli as the causative agent, have been approved (remarks the report referred to above) by a number of contributed articles in the medical press and have also excited opposing statements. Based upon entire confidence in these findings eight horses are being subjected under the direction of officers of the Marine Hospital Service to immunising inoculations with the view of obtaining a curative and prophylactic serum similar in its action to that for diphtheria. A United States Army Commission, whose members are working at Havana and who have recently published the conclusions they have reached so far, state that judging from the result of experiments conducted by them the bacillus icteroides (Sanarelli) stands in no causative relation to yellow fever, but when present should be considered as a secondary invader in the disease. These statements are wholly conflicting and time alone can prove whether Sanarelli's discovery should be discredited or shall stand as a monument to his fame. The subject of international compact with regard to the sanitation of ports and places habitually infected with yellow fever is still receiving the attention of the Marine Hospital Service, and the Surgeon-General reports so marked an interest and approval of the scheme that it is probable the matter will assume definite form for consideration in the near future.

Physique of Recruits for the United States Navy.

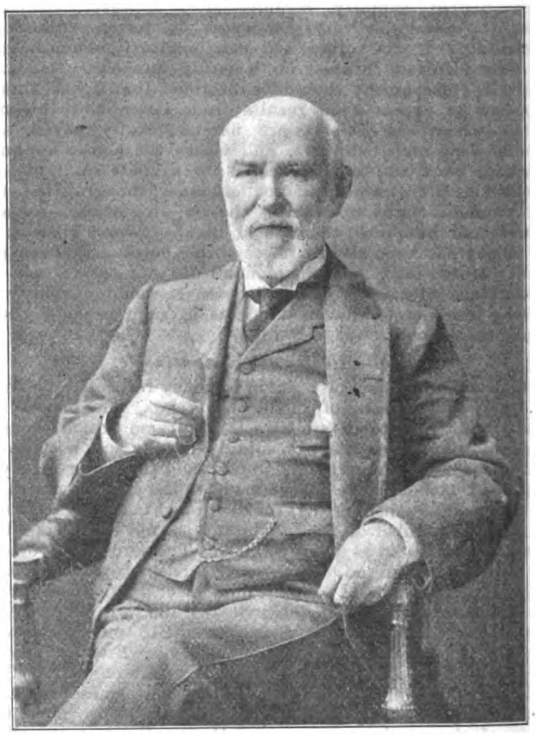
Dr. Edward R. Stitt, assistant surgeon, U.S.A. Navy, writing of the physique of recruits for the navy who came under his notice, states that he was struck by the superiority in physique of those born in the Middle States of North America over the natives of the Atlantic coast. There were noted among the recruits from the Eastern cities a large number of cases of persons who would probably develop unfitness by reason of catarrhal conditions of the throat and nose as well as from relaxation of inguinal rings, these conditions being far less frequent among the recruits from the Western States. While the most striking feature differentiating the two classes was as regards general appearance, yet the following averages, obtained from measurements, are in a degree indicative of this superiority. Of 163 men, natives of the Eastern coast cities, the averages were: age, 20·3 years; weight, 9 st. 3 lb.; height 5 ft. 6 in.; chest expansion, 3·2 inches; circumference of arm, 11 inches; and circumference of thigh. 19 inches. Among those born in the Middle West, numbering 92, the averages were: age, 20·5 years; weight, 9 st. 5 lb.; height, 5 ft. 7 in.; chest expansion, 3·4 inches; circumference of arm, 11·5 inches; and circumference of thigh, 19·5 inches. Of all the 251 recruits enlisted for one ship about a year ago, all coming from the West, the following averages pertained at the time of first examination: age, 21 years; weight, 9 st. 13 lb.; height, 5 ft. 6·6 in.; chest expansion, 3·2 inches; circumference of arm, 11·7 inches; and circumference of thigh, 19·7 inches.

Jan. 14th.

Obituary.

WILLIAM SEDGWICK SAUNDERS, M.D. CASTLETON, U.S.A., M.R.C.S. ENG., L.R.C.P. EDIN.

WILLIAM SEDGWICK SAUNDERS, who passed away on Jan. 18th, was for many years a prominent figure in the City of London. Born in 1824 at Compton Giffard, Devonshire, he was educated at King's College, London, and afterwards at St. Thomas's Hospital, a hospital over which the Corporation of the City of London exercises jurisdiction. After qualifying as M.R.C.S. in 1846 he entered the army as an assistant surgeon and served with the Royal Fusiliers in the West Indies and in North America. Returning to England he served as medical officer to the military prison at Fort Clarence, Rochester, and in 1852 sailed for service in the Kaffir war in the *Birkenhead*. On the way out he was taken seriously ill and had to be landed at the first port of call, a circumstance to which he probably owed his life, for, as will be remembered, the *Birkenhead* caught fire and sank in Simon's Bay with every soul on board of her. On his recovery Dr. Saunders resigned his commission and commenced a private practice in the City. He was soon elected a member of the Court of Common Council and was chairman of the Library Committee, in which capacity he laid the foundation-stone of the Guildhall Library and Museum in



DR. W. SEDGWICK SAUNDERS.

1870. On the retirement of Dr. Letheby, Dr. Saunders was chosen as medical officer of health and public analyst. In both of these capacities he did excellent work, and it is in great part due to the labours of himself and his staff that the City occupies to-day the high position which it does in regard to sanitation. He wrote much on cholera, both on the epidemic of 1866, during which he was medical officer of the City of London Union, and also upon the slight outbreak which occurred in 1893. Other important reports were those on the insanitary condition of St. Bartholomew's Hospital, issued in 1891, and on the insanitary state of Christ's Hospital, issued in 1893, in connexion with an outbreak of scarlet fever. He laboured incessantly to bring

about an improvement in the water-supply of the City and was also much interested in the erection of artisans' dwellings. Apart from his professional career he was a true citizen, being a member of the Broderers' Company and serving the office of Master upon two occasions. He was also a senior member of the Commission of Lieutenancy. A faithful and hard-working servant of the great City which he loved, his death leaves a blank which will be very hard to fill.

EDWARD HODGES CREE, M.D. EDIN., M.R.C.S. ENG., L.S.A.,

DEPUTY-INSPECTOR-GENERAL OF HOSPITALS, R.N.

DR. E. H. CREE, who died at his residence in Upper Holloway on Jan. 16th at the advanced age of 87 years, was in many respects a remarkable man. The first half of his professional life was spent as a surgeon in the Royal navy, in which capacity he served in the first Chinese and Crimean wars. He left the service and set up in practice in Holloway in order that his sons should receive a medical education. They became in succession students of the Middlesex Hospital. Two of them entered the navy, from which the elder son retired to join his father in practice. The other died on board ship from phthisis contracted in the discharge of his duties. Three other sons are at the present time holding commissions in the Royal Army Medical Corps—viz., Lieutenant-Colonel E. R. Cree, now in South Africa; Major G. Cree, at Gibraltar; and Major H. E. Cree, now serving in China. His youngest son is in practice at West Hampstead, whilst the only one of the seven brothers who did not follow their father's profession has been serving in Strathcona's corps in the Transvaal campaign. It is now some years since Dr. Cree himself retired from practice and lived a peaceful life to extreme old age.

Born at Stoke Damerel, Devon, on Jan. 12th, 1814, he was educated at Preston, Lancashire. In 1833, after a five years' apprenticeship to Mr. John Hounsall of Bridport, Devon, he studied at the School of Anatomy, Trinity College, Dublin, and at Edinburgh University. In 1836 he took the L.S.A. and entered the Royal navy as assistant surgeon on June 8th, 1837 After short periods of service in the flagship at Plymouth and at Malta and in the *Firefly* in the Mediterranean he was appointed to the *Rattlesnake* on Sept. 18th, 1839. He went in her to Ceylon and thence to China, where she was engaged in the first Chinese war. On April 4th, 1843, he was transferred to the *Vixen* and remained in her until July, 1846, during her operations against pirates at Borneo. In 1846, after the *Vixen* had returned to England and been paid off, he passed the M.R.C.S. Eng. and also took the opportunity to complete his medical course at Edinburgh University, where he graduated M.D. in 1847. His next ship was the *Fury*, from August, 1847, to December, 1850, serving again in the East Indies and China stations and being present at the destruction of piratical fleets in the Tonquin river (1849). After returning to England he was appointed in December, 1852, to the *Odin* and served in her till May, 1856, in the Baltic, and subsequently in the Black Sea, being present at the fall of Sebastopol. From December, 1856, to February, 1858, he was surgeon of the Coastguard ship at Falmouth, and from October, 1860, to December, 1861, in the *Orion* on the Mediterranean station. This completed his sea service. From September, 1864, to July, 1869, he was staff-surgeon of H.M. Dockyard, Portsmouth, and on July 12th, 1869, he retired from the navy with the rank of deputy-inspector-general of hospitals. During his service he obtained the following war medals: China, Baltic, Crimea, and Turkish.

We have already outlined his subsequent career. Suffice it to add that he gained the confidence and affection of a large circle of patients and passed many happy years in the daily routine of general practice. He was a man of sterling worth, of enlightened ideas, and of high attainments. An artist of no mean order the exercise of his talent enabled him to produce many admirable pictures of the scenes which he had visited during his naval service. His love of art also proved a great solace and source of occupation to him in his latter years when he was freed from the cares of professional life.

CHARLES ROBERTS, M.R.C.S. ENG., L.S.A.

BY the death of Mr. Charles Roberts Uxbridge loses one of its most prominent townsmen. On the morning of Jan. 7th Mr. Roberts, who had only lately taken a house in Belgrave-road, S.W., was waiting at Victoria Station for the Uxbridge train. While talking to the bookstall clerk he suddenly staggered and fell. He was removed to St. George's Hospital but on his arrival he was found to be dead. At the inquest, which was held on Jan. 10th, the house physician at the hospital, gave evidence of receiving the deceased and said that he considered that death had taken place about 15 minutes previously to his admission. Witness had made a post-mortem examination and had found the heart to be fatty while there was atheroma of the aorta. Death was due to syncope. A verdict was accordingly returned of "Death from natural causes." Mr. Roberts, who was born in 1836, received his medical education at St. George's Hospital where he filled the post of house surgeon. He first practised at Dunster, removing to Uxbridge in 1869. In the same year he was appointed divisional surgeon of police, and he also held the post of surgeon to the post office and of medical officer of health of the Uxbridge Rural Sanitary Authority, afterwards the Rural District Council. He took a great interest in the cricket and cycling clubs, and was a prominent member of the Constitutional Club, the Conservative Association, and of the Primrose League. Latterly he had given up his practice except as regards his public appointments. He was buried on Jan. 11th at Uxbridge, the actual burial service being preceded by a celebration of the Holy Communion in the early morning. For over 30 years he had been one of the best known public men in Uxbridge and his decease is very widely felt as a personal loss. Mr. Roberts, who was twice married, leaves a widow and nine children.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—In January the following candidates passed in the subjects indicated:—

Surgery.—S. R. Dudley, St. Bartholomew's Hospital; A. E. U. Hawkes (Sections I. and II.), Liverpool; H. A. Higgens (Section I.), Guy's Hospital; C. G. Meade (Section I.), St. Bartholomew's Hospital; A. U. Parkhurst, Cardiff and St. Mary's Hospital; W. B. Price, St. Thomas's Hospital; F. A. Segreda (Section II.), Guy's Hospital; and A. H. Thomas (Sections I. and II.), and A. J. Watson, (Section II.), St. Mary's Hospital.

Medicine.—S. R. Dudley, St. Bartholomew's Hospital; H. B. Hanson (Section II.), Royal Free Hospital; A. E. U. Hawkes (Sections I. and II.), Liverpool; S. F. Hickman (Section I.), Royal Free Hospital; C. J. Marsh, University College Hospital; L. R. Marshall, St. Mary's Hospital; B. S. O. Maunsell (Section I.), St. Bartholomew's Hospital; S. Page (Section I.), Birmingham; F. M. Payne (Section I.), Royal Free Hospital; E. R. Risien (Section I.), St. Bartholomew's Hospital; F. A. Segreda (Sections I. and II.), Guy's Hospital; and W. C. Spooner (Sections I. and II.), Edinburgh.

Forensic Medicine.—S. R. Dudley, St. Bartholomew's Hospital; A. E. U. Hawkes, Liverpool; F. A. Hort, Middlesex Hospital; B. S. O. Maunsell, St. Bartholomew's Hospital; F. M. Payne, Royal Free Hospital; and W. C. Spooner, Edinburgh.

Midwifery.—H. J. Aldous, King's College Hospital; H. T. Barber, Geneva and St. Mary's Hospital; S. F. Hickman, Royal Free Hospital; R. L. Jones, Middlesex Hospital; C. E. H. Leggatt, St. Mary's Hospital; F. McTavish, Toronto; R. A. Pitter, Middlesex Hospital; F. P. Rose, London Hospital; and P. Southan, Birmingham.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—S. R. Dudley, C. J. Marsh, F. A. Segreda, W. C. Spooner, and A. J. Watson.

UNIVERSITY OF CAMBRIDGE.—Mr. P. V. Bevan has been appointed an Assistant Demonstrator in Physics.—Mr. H. A. Wilson has been elected to the Clerk Maxwell Studentship in Experimental Physics.—At the Congregation on Jan. 17th the following medical and surgical degrees were conferred:—

M.B.—G. O. Lambert, St. John's; S. Bousfield, Caius; H. S. Gabb, Downing; and W. L. Ascherson, non-collegiate.

B.C.—W. E. Moore Ede, King's; N. Maclaren, Trinity; G. A. C. Shipman, Trinity; R. H. Urwick, Trinity; G. O. Lambert, St. John's; H. Edmondson, Clare; L. Wilkin, Pembroke; S. Bousfield, Caius; T. W. S. Paterson, Caius; L. B. Scott, Christ's; A. H. Style, Emmanuel; and H. S. Gabb, Downing.

PROPOSED CONSUMPTION SANATORIUM FOR DEVON AND CORNWALL.—At the meeting of the Sanitary Committee of the Cornwall County Council held on Jan. 18th it was decided to recommend the Cornwall County Council to grant £50 per annum for two years for the support of a bed in the proposed sanatorium for the treatment of tuberculosis.

LUNACY IN DEVONSHIRE.—At the meeting of the Plymouth Board of Guardians held on Jan. 15th it was reported that the accommodation for female lunatics in the borough asylum at Blackadon and also in the workhouse was overtaxed. The guardians passed a resolution urging the corporation to proceed with the extension of the asylum as soon as possible.

LITERARY INTELLIGENCE.—Messrs. Herbert S. Stone and Company, Chicago, announce that they have in preparation, and will shortly issue, a Text-book of Special Surgery, translated from the seventh German edition of Dr. Franz Keenig by Arthur B. Hosmer, M.D., and edited by Christian Fenger, M.D. This is the authorised translation of a well-known German work.

VACCINATION GRANTS.—Mr. J. Dibble Staple, M.R.C.S. Eng., L.S.A., public vaccinator for the Ashley district of the Bristol Union, has been awarded a grant for successful vaccination by the Local Government Board.—Mr. Edward James Sheppard, L.R.C.P., L.R.C.S. Edin., public vaccinator for the Clifton district of the Bristol Union, has been awarded the Local Government Board grant for efficient vaccination for the seventh consecutive time.

THE LATE MR. J. G. SYMES.—Mr. Joseph Gustavus Symes died at his residence, Southfield House, Weymouth, on Jan. 14th, in his seventy-sixth year. The deceased, who was born at Crewkerne, Somerset, was a son of the late Admiral Symes. He received his medical education at St. George's Hospital, London, and qualified as M.R.C.S. Eng. and L.S.A. in 1848. Shortly afterwards he became medical officer at a private asylum near Devizes, Wiltshire, and in 1854 he was appointed medical superintendent of the Dorset County Lunatic Asylum, which post he held for 33 years.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bonn:* Dr. Karl Grouven has been recognised as *privat docent* of Dermatology.—*Breslau:* Dr. Alfred Schaper has been appointed Extraordinary Professor of Anatomy.—*Cadiz:* Dr. Manuel Roca y Bermudo has been appointed Professor of Histology and of Pathological Anatomy.—*Erlangen:* Dr. J. N. Oeller of Munich has been appointed to the chair of Ophthalmology in succession to Dr. Eversbusch.—*Florence:* Dr. G. Mya has been appointed to the chair of Pediatry.—*Freiburg (Baden):* Dr. Adolf Schüle, *privat-docent* of Medicine, has been promoted to an Extraordinary Professorship.—*Geneva:* Dr. Alcide Jentzer has been appointed Professor of Midwifery and Gynæcology in succession to Dr. Vaucher, resigned.—*Göttingen:* Dr. Verworn, Extraordinary Professor of Physiology in Jena, has been appointed to the chair vacated by Dr. George Meissner, who is retiring.—Dr. Boruttau, First Assistant in the Physiological Institute, has been granted the title of professor.—*Gratz:* Dr. Meinhard Pfaundler has been recognised as *privat-docent* of Pediatry.—*Groningen:* Dr. K. F. Wenckebach of Utrecht has been appointed Professor of Clinical Medicine.—*Heidelberg:* Dr. Fürbringer of Jena has been appointed to the chair of Anatomy.—Dr. Kossel of Marburg has been appointed to the chair of Physiology.—*Iurieff (Dorpat):* Dr. Yevetski of Moscow has been appointed Professor of Ophthalmology.—*Jena:* Professor Maurer, who has been prosector under Professor Gegenbaur, has been appointed to succeed his late chief (who has gone to Heidelburg) in the chair of Anatomy. He has done a considerable amount of original work in embryology and comparative anatomy.—*Kiel:* Dr. Theodor Kirchhoff, *privat-docent* of Psychiatry, has been granted the title of Professor.—*Munich:* Dr. Friedrich Voit and Dr. Richard May have been promoted to Extraordinary Professorships of Medicine.—*Palermo:* Dr. Russo-Travali has been recognised as *privat-docent* of Operative Medicine.—*Strasburg:* Dr. Richard Ewald (brother of Professor Carl A. Ewald, Professor of Medicine) has been appointed to succeed Dr. F. Goltz who is retiring from the chair of Physiology.—Dr. Hermann Fehling of Halle has been appointed to the chair of Midwifery and Gynæcology in succession to Dr. Freund, resigned.—*Tübingen:* Professor Robert Wollenberg of Hamburg has been appointed to the chair of Psychiatry as successor to Dr. Siemerling.—*Vienna:* Dr. Richard Paltauf has been appointed Professor of General and Experimental Pathology in succession to the late Dr. Knoll.—Dr. V. Hammerschlag has been recognised as *privat-docent* of Otology.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

ALLEN, H., L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer, Crediton Union, vice G. A. H. Barton, resigned.

BARTLETT, T. W., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed District Medical Officer, Halstead Union, vice R. Reynolds.

BRADFORD, W. G. H., M.B., B.C. Camb., has been appointed District Medical Officer, Bosmere and Claydon Union, vice D. M. French, resigned.

BRIGSTOCKE, C. A., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Haverfordwest District in the County of Pembroke.

COLEMAN, E., M.B., B.S. Lond., L.R.C.P., M.R.C.S., has been appointed District Medical Officer, Sleaford Union, vice J. H. Pim, resigned.

DODD, HENRY NOEL N., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Assistant House and Visiting Surgeon to the Stockport Infirmary.

FIELD, R. C., M.B. Lond., has been appointed District Medical Officer, Patrington Union, vice E. Robinson, resigned.

FOX, G. A. T., L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer, Dore Union, vice T. C. Lawson, resigned.

HARDY, C. M., M.B., B.S. Durh., has been re-appointed Medical Officer of Health by the Croft Rural District Council.

HOLMES, THOS., M.B. Lond., has been appointed District Medical Officer, Lancaster Union, vice G. R. Parker, resigned.

HOWDEN, ROBERT, M.A. Durh., M.B. Edin., F.R.S.E., has been appointed Examiner in Anatomy in the University of Edinburgh.

HUEY, J. J., L.S.A., has been appointed District Medical Officer, Doncaster Union, vice B. Sweeten, resigned.

JACKSON, H. W., M.D. Lond., D.P.H., has been appointed District Medical Officer, Middlesborough Union, vice A. Webster, deceased.

MACKENZIE, JOHN, L.R.C.P. & L.R.C.S. Edin., has been appointed District Medical Officer and Public Vaccinator for Ingleton, Thornton-in-Lonsdale, and Burton-in-Lonsdale, Settle Union, vice F. A. Griffiths, deceased.

MCLAREN, T. D., M.B., C.M. Edin., has been appointed District Medical Officer, Mitford and Launditch Union, vice E. R. McDonnell, resigned.

MONTGOMERIE, HUGH MAYER, M.D., C.M. Edin., has been re-appointed Physician to the West Cornwall Infirmary, Penzance.

MONTGOMERY, JAMES BARCLAY, M.D. Glasg., L.R.C.P. Lond., M.R.C.S., J.P., has been re-appointed Honorary Consulting Physician to the West Cornwall Infirmary, Penzance.

OYSTON, W. F., M.B., Ch.B. Vict., has been appointed District Medical Officer, Northallerton Union, vice J. Clark, resigned.

PARRY-JONES, MAURICE, M.D., B.S. Lond., M.R.C.S., has been appointed Honorary Physician to the Derbyshire Royal Infirmary.

RIVIÈRE, CLIVE, M.D. Lond., M.R.C.S., M.R.C.P., has been appointed Pathologist and Registrar to the East London Hospital for Children and Dispensary for Women, Shadwell, vice Thomas D. Lister.

ROBERTSON, WILLIAM, M.D. Glasg., D.P.H., has been appointed Medical Officer of Health for Leith.

SMITH, R. R., L.R.C.P., L.R.C.S. Irel., has been appointed District Medical Officer, West Derby Union, vice J. J. Flinn, resigned.

SYMONS, JOHN, M.R.C.S., L.S.A., J.P., has been re-appointed Surgeon to the West Cornwall Infirmary, Penzance.

THOMPSON, PETER, M.D. Vict., has been appointed Lecturer on Anatomy at the Middlesex Hospital Medical School.

WILKINSON, W. A. H., M.B., Ch.B. Vict., has been appointed Medical Officer of Health, Gainsborough Urban District.

WILLCOX, W. H., M.B., B.Sc. Lond., D.P.H., A.I.C., has been appointed Lecturer on Chemistry and Physics at St. Mary's Hospital Medical School, Paddington. London, W.

YOUNG, C. W., L.R.C.P. Lond., M.R.C.S., D.P.H. Camb., has been appointed District Medical Officer, Luton Union, vice W. Duncan, resigned.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM CITY FEVER HOSPITAL, Lodge-road.—Assistant Medical Officer. Salary £120 per annum, with board, residence, &c.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Assistant House Surgeon. Salary £60 per annum, with apartments and board.

BOLTON INFIRMARY AND DISPENSARY.—Senior House Surgeon. Salary £120 per annum, with furnished apartments, board, and attendance.

BRADFORD ROYAL INFIRMARY.—Dispensary Surgeon, single. Salary £100 per annum, with board and residence.

CENTRAL LONDON SICK ASYLUM DISTRICT.—First Assistant Medical Officer (salary £100 per annum) and Second Assistant Medical Officer and Dispenser (salary £75 per annum), each with board and residence.

CHORLTON-UPON-MEDLOCK DISPENSARY, Manchester.—Resident House Surgeon, unmarried. Salary £130 a year, with furnished rooms and attendance.

DONCASTER GENERAL INFIRMARY AND DISPENSARY.—Assistant House Surgeon, unmarried. Board and residence provided.

GENERAL HOSPITAL, Nottingham.—House Physician for two years. Salary £100, rising £10 a year to £120, with board, lodging, and washing.

GUEST HOSPITAL, Dudley.—Senior Resident Medical Officer. Salary £100 per annum, increasing £10 a year to £120, with board, residence, attendance, and washing.

GUY'S HOSPITAL MEDICAL SCHOOL.—Gordon Lectureship in Experimental Pathology.

HOSPITAL FOR WOMEN, Soho-square, London, W.—Assistant Physician, also Assistant Surgeon.

LEEDS GENERAL INFIRMARY.—House Physician for six months. Board, lodging, and washing provided.

LEEDS UNION, East Parade, Leeds.—Assistant Medical Officer, single, not above 35, for Workhouse, Schools, and Infirmary. Salary £130 per annum, rising £10 annually to £150, with board, washing, apartments, and attendance (subject to deduction under the Poor-law Officers' Superannuation Act, 1896).

LINCOLN HOSPITAL FOR INSANE.—Locum Tenens for six weeks from about 6th of February. Three guineas a week.

LIVERPOOL DISPENSARIES.—Assistant Surgeon. Salary £100, with board and apartments.

LIVERPOOL STANLEY HOSPITAL.—Junior House Surgeon. Salary £70 per annum. Also Third House Surgeon as Ambulance Surgeon. Salary £70 per annum, with board, residence, and washing.

MIDDLESEX HOSPITAL, W.—Assistant to the Bacteriologist. Salary £80 per annum.

MILLER HOSPITAL and ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer, tenable for six months, with prospect of re-election as Senior. Salary at the rate of £60 per annum, with board, attendance, and washing.

NORFOLK AND NORWICH HOSPITAL, Norwich.—Resident Secretary and House Steward, twenty-eight to forty five years of age, with previous hospital experience. Salary £150 per annum, rising £10 yearly to a maximum of £200, with apartments, board, and laundry.

NORTH DEVON INFIRMARY, Barnstaple, Devon.—House Surgeon. Salary £80 per annum, with board, residence, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Salary £140 per annum, all found except board.

OLDHAM INFIRMARY.—Senior House Surgeon. Salary £100 per annum, with board, residence, and washing.

PADDINGTON-GREEN CHILDREN'S HOSPITAL, London, W.—Pathologist.

ROXBURGH DISTRICT ASYLUM, Melrose, N.B.—Assistant Medical Officer. Salary £110, rising to £120 per annum, with board, lodging, and washing.

ROYAL SEA-BATHING HOSPITAL, Margate.—Assistant Resident Surgeon. Salary £52 per annum, with board and residence.

RURAL DISTRICTS OF BUNTINGFORD, &C., AND CERTAIN URBAN DISTRICTS.—Medical Officer of Health. Salary £600 per annum, including travelling and all other expenses.

ST. BARTHOLOMEW'S HOSPITAL, Rochester.—House Surgeon, Salary £120 per annum, with board, lodging, washing, firing, and light.

SEAMEN'S HOSPITAL SOCIETY.—Senior Dental Surgeon and also Junior Dental Surgeon. No salary, but first-class railway fare between London and the Hospitals will be allowed.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary at the rate of £24 per annum, with board, washing, and residence.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies for Certifying Surgeons under the Factory Acts at Totnes, in the County of Devon; at Broughton, in the County of Hants; at Uxbridge, in the County of Middlesex; at Bangor, in the County of Carnarvon; and at Cerrig-y-Druidion, in the County of Denbigh.

UNIVERSITY OF ST. ANDREWS.—Examiner for Graduation in the subject of Physiology.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House Surgeon. Salary £50 per annum, with board, lodgings, washing, and attendance.

WESTERN GENERAL DISPENSARY, Marylebone-road.—Second House Surgeon, unmarried. Salary £75 per annum, with 10s. per month for washing, and board and residence.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for one year, eligible for election to the post of Senior House Surgeon for a further year. Salary as Junior £75 per annum, with board, residence, &c.; as Senior £100.

Births, Marriages, and Deaths.

BIRTHS.

NUTTALL.—On Jan. 17th, at 18, Clough-street, Bury, Lancs., the wife of A Peel Nuttall, M.D. Lond., of a daughter.

RICHARDSON.—On Jan. 22nd, at Kirkstall, Alverstoke, Hants, the wife of Dr. Martin Richardson, of a daughter.

MARRIAGES.

NEWTON—GRAY.—On Dec. 27th, at Marylebone Presbyterian Church, Upper George-street, W., by the Rev. George Hanson, M.A., D.D., Duncan Gray Newton, M.B., C.M. Edin., Brook-hill, Sheffield, to Janet Mackinnon, daughter of the late Archd. Gray and Mrs. Gray of 37, Holland-park, W.

DEATHS.

KEMP.—On the 2nd of Jan., 1901, at Lewes, G. T. R. Kemp, M.D., late of Nassau, New Providence, Bahamas, aged 68 years.

MYERS.—Died at Pará, Brazil, January 20th, 1901, Walter Myers, M.A., M.B. Cantab., only son of George and Flora Myers, 166, Hagley-road, Birmingham, of yellow fever, contracted whilst working for the Liverpool Tropical School of Medicine, in his twenty-ninth year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

DEATH AND QUACKERY.

ON Jan. 18th Mr. R. J. Rhys held an inquest at the Merthyr General Hospital upon the body of William John Lewis, a repairer, who died in the hospital on Jan. 15th. A short reference to this case will be found in a letter from our Welsh correspondent. William Richards, a friend of the deceased, said that they were together on Dec. 22nd. Witness was carrying a four-gallon cask of beer and as he was shifting it to the shoulders of Lewis the cask slipped and fell on to the foot of the deceased. In answer to the coroner witness said that they were not sober but were not drunk. John Lewis, father of the deceased, said that he saw his son's foot on the day following the accident and that then it had a nasty look. On Dec. 24th the deceased went to see Mr. Price, the bone-setter of Pontmorlais. He went again on the two following days, and then as the toe got no better he stopped his visits and the toe was poulticed at home. Mr. Price then took to visiting the deceased at his own home and gave him ointment and oil, and Price and his son-in-law, a man named Davies attended the deceased until his admission to the hospital on Jan. 12th. Mr. P. F. James, assistant to Mr. T. J. Webster saw the deceased about a week after the accident and recommended his removal to the hospital, saying that amputation of the toe should be performed, and warning the parents of the deceased of the danger of blood-poisoning. Deceased worked in the Cwmdu drift and paid in to the "works doctor," but he had faith in Price. Mr. T. J. Webster, surgeon to the Merthyr General Hospital, gave evidence of seeing Lewis on the morning of his admission. The left big toe was smashed and gangrenous, and the lymphatics and veins of the leg were implicated. There was an abscess above the ankle and effusion into the left shoulder-joint. On Jan. 14th the deceased developed pleurisy and he died on Jan. 15th simply from blood-poisoning. The gangrene was not brought on by the ointment and oil, but the case was not treated an tiseptically in any way. Price and Davies gave evidence and detailed how they had treated the case, Davies adding that he had advised the parents to call in a medical man on Jan. 10th because then the patient was "suffering with his body as well." Mr. James gave evidence of seeing the deceased and of recommending his removal to hospital about a week after the accident. The coroner in summing up expressed himself very strongly that the treatment of Price and Davies was nothing but botching. He continued, according to the report in the *Western Mail* of Jan. 19th:—

> Neither of these men was competent to take charge of such a case. If it had been a case of a simple burn he should not have thought very much of it, but when it was a case of a fracture of the toe he thought that in meddling with it Price and Davies were very much to blame. These bone-setters were absolutely irresponsible people, and he considered they did a good deal of mischief. He was continually hearing of cases in which they made a terrible mess of patients. Not long ago he had a case at Hirwain where a man who had been injured underground was mauled about by some person who was called in from Merthyr, in a most shameful way about three days before he died. It did not appear to him that this was a case which amounted to manslaughter, but, at the same time, he could not help expressing the opinion that this poor man's life had been allowed to slip away between this precious couple, Price and Davies. He firmly believed that if a properly qualified doctor had attended the case at the commencement there would have been a very good chance, indeed, of the man being still alive. It was monstrous for people to pay to the works doctor and not to avail themselves of his services. A man's life was of some value to others besides himself, and if he were injured it was his duty to do the best he could to recover. He did not do the best he could to recover if, instead of going to a doctor he went to someone who was nothing more than a quack.
>
> The jury, after a short consultation in private, returned a verdict in accordance with Mr. Webster's evidence.

We have quoted the coroner's remarks because they are so excellent that we can really add nothing to them. It is perfectly inexplicable to us how miners, men who are a very shrewd, hard-headed class, should be so fond of being treated by bone-setters and other quacks. However, as the law stands, if anyone is fool enough to consult such people there is nothing to stop them from practising.

ACCOMPLISHED BATH ATTENDANTS.

ABOUT a year ago the question was raised in a coroner's court at Manchester as to what proportion of the attendants in the Manchester baths were competent to give aid to the apparently drowned. The son of a well-known philanthropist—the late Mr. Thomas Wright—was found unconscious in one of the private baths. In this case the attendant was able to give first aid, but without success. The coroner suggested that all the attendants at all the public baths of the city should be made similarly competent. The Baths Committee took the question up. All the male and female attendants were supplied with

copies of the National Life Saving Society's Handbook, with special suggestions that they should study the Sylvester method, and they were drilled from time to time by a past secretary and examiner of the society. This gentleman has reported the result of the exhaustive examination which he has made as regards the knowledge of the attendants and their skill in using the means of resuscitation. This examination comprised a practical demonstration of the steps necessary for restoring breathing and the reasons for the various movements. Each attendant was made to act in turn the parts of operator, assistant, and patient, and each one of them is stated to be "competent to render assistance to an apparently drowned person until the arrival of medical help." Charts are exhibited in prominent positions in the various baths showing the method of life saving, so that bathers may learn if they wish. This is certainly to the credit of the Baths Committee and it would be well if all the public baths in the country had an equally skilled staff of bath attendants.

CHRONIC DIARRHŒA; SUGGESTIONS FOR TREATMENT DESIRED.

To the Editors of THE LANCET.

SIRS,—I shall be obliged if any of your readers can help me in prescribing for the following case. A man, aged 60 years, has been the subject of chronic diarrhœa for the past 12 months, blood very frequently appearing in the stools. He has not lost flesh and his appetite remains good. I have given him opium, bismuth, chalk, quinine, and a host of other remedies commonly employed, but with no avail.

I am, Sirs, yours faithfully,

Jan. 21st, 1901. PERPLEXED.

AN ARTIFICIAL SPONGE.

WE have received from Mr. C. Hamilton Whiteford of Plymouth a specimen of an artificial sponge which he has devised. It is composed of "camel-hair blanketing" covered with buttercloth. He claims for it the following advantages: (1) easy sterilisation by boiling; (2) great power of absorption; (3) elasticity, with soft, smooth surface; and (4) cheapness, as the materials for each sponge cost 2½*d*. With the justice of most of these claims we agree, as we have tried the specimen sent to us, pointing out, however, that its power of absorption is certainly less than that of a good sea sponge. It is likely to prove useful in certain cases, as, for instance, when a large, smooth, flat surface is desired. As to the price, the cost must necessarily be decidedly higher than the cost of the material.

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—I should be much obliged if you or any of your numerous readers could tell me of a home for a little boy, aged six years, suffering from Friedreich's palsy, and if possible the annual cost.

I am, Sirs, yours faithfully,

JOHN TAYLOR, M.D. Edin.

Ivy Cottage, Rhymney, *vid* Cardiff, Jan. 16th, 1901.

"THE INCOME-TAX REPAYMENT AGENCY."

To the Editors of THE LANCET.

SIRS,—At this time of the year you have always allowed us to inform your readers of the refunds of income-tax to which they may be entitled. This year the refunds are greater because the rate of tax is much higher. We would call particular attention to the fact that it will soon be too late to claim a return of tax for the year 1897-98. Claims can be made as follows: For the year ended April 5th, 1898, for a refund of (*a*) the whole tax paid or deducted if the income did not exceed £160; (*b*) £5 6*s*. 8*d*. if the income exceeded £160 without exceeding £400; (*c*) £3 6*s*. 8*d*. if the income exceeded £400 without exceeding £500. For each of the years ended April 5th, 1899 and 1900, for a refund of (*a*) the whole tax paid or deducted if the income did not exceed £160; (*b*) £5 6*s*. 8*d*. if the income exceeded £160 but did not exceed £400; (*c*) £5 if it exceeded £400 but did not exceed £500; (*d*) £4 if it exceeded £500 but did not exceed £600; (*e*) £2 6*s*. 8*d*. if it exceeded £600 but did not exceed £700. For the current year to April 5th, 1901: (*a*) the whole tax paid or deducted if the income does not exceed £160; (*b*) £8 if the income exceeds £160 without exceeding £400; (*c*) £7 10*s*. if it exceeds £400 without exceeding £500; (*d*) £6 if it exceeds £500 without exceeding £600; (*e*) £3 10*s*. if it exceeds £600 without exceeding £700. The refund for the four years may thus amount to £24 or to double that amount in case of separate assessment of husband and wife. Claims for four years can still be made on life insurance premiums. A claim for one year can be made on decreased profits from profession, trade, or farming, also for any loss made during the past year, the refund being claimed out of the tax paid on other sources of income. We would call attention to the fact that income-tax can be recovered on rent of property and on dividends said to be paid free of tax.

We are, Sirs, yours faithfully,

THE INCOME TAX REPAYMENT AGENCY.

Chichester-road, Paddington, London, W., Jan. 16th, 1901.

Surgeon writes:—"Does the time a medical officer has passed on retired pay count if required to serve again as 'continuous service towards' an increase of service on again reverting to retired pay? And are officers who have been called upon to volunteer their services in time of war placed on the same footing as if they had actually been recalled? Also are they eligible for further promotion?"

Disgusted has, we think, a very real grievance. We will grant at the outset that he was unduly trustful in sending the originals of his testimonials. Copies should always be sent; if it is necessary for the presumptive employer to see the originals they can be exhibited at a personal interview. Photographs, as our correspondent says, cost money, and common honesty, to say nothing of courtesy, demands the return of both photographs and of testimonials. There are generally many applications for one post, only one man can be successful, and it is the undoubted right of those who are not successful to have the documents returned to them which are necessary for their application for another post. Of course, if an advertiser should state that testimonials and photographs will in no case be returned he is freed from the obligation of returning them, but if no such statement is made they should without doubt be sent back.

Asterion.—1 and 2. The Home Secretary appoints the medical officers of the prison service. 3. The medical visitors of lunatics are appointed by the Lord Chancellor and the Commissioners in Lunacy by the Crown.

Inquirer.—It is not our custom to receive such advertisements.

ERRATUM.—In Dr. Ninian Falkiner's letter on "Arsenic and Aerated Waters" in THE LANCET of Jan. 19th, page 213, line 13, the word "organism" ought to be *arsenium*.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 24th, 1901.

Date	Barometer reduced to Sea Level and 32° F	Direction of Wind.	Rainfall	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb	Dry Bulb.	Remarks at 8.30 A.M.
Jan. 18	30·07	S.W.	...	55	49	43	43	44	Overcast
,, 19	29·75	S.	0·07	50	49	44	43	44	Cloudy
,, 20	29·81	S.W.	0·06	73	51	41	40	41	Fine
,, 21	30·21	W.	...	60	54	41	49	50	Foggy
,, 22	30·19	W.	...	56	52	49	47	49	Overcast
,, 23	30·58	N.E.	...	60	47	40	39	41	Foggy
,, 24	30·20	ESE	...	48	45	41	43	44	Foggy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

WEDNESDAY (30th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

THURSDAY (31st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

FRIDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.). West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

SATURDAY (2nd).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (28th).—ODONTOLOGICAL SOCIETY OF GREAT BRITAIN (20, Hanover-square. W.).—7 P.M. Council Meeting. 8 P.M. Casual Communications:—Mr. C. Schelling: An Obscure Case elucidated by means of the X-rays.—Mr. H. B. Dowsett: A Dental Cyst arising from the Root of a Living Tooth. Paper:—Mons. J. Choquet: The Non-Specificity of the Micro-organisms of Dental Decay (with lantern illustrations).

MEDICAL SOCIETY OF LONDON.—8.30 P.M. Discussion on the Treatment of Typhoid Fever (opened by Dr. F. J. Smith).

WEDNESDAY (30th).—BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Discussion on Anæmia and its Therapeutics (opened by Prof. C. Allbutt).

THURSDAY (31st).—OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.—8 P.M. Cases. 8.30 P.M. Papers:—Dr. G. A. Berry: (1) On so-called Paresis of Divergence; (2) Note on Two Rare Forms of Non-paretic Non-concomitant Squint.—Dr. R. D. Batten: "Eclipse Blinding" with Choroido-retinitis and Obstruction of a Retinal Artery.—Mr. A. Critchett: A Case of Bullet Injury of Occipital Lobes with Loss of Lower Half of each Visual Field.—Dr. Edridge-Green: Evolution of the Colour-sense.

FRIDAY (1st).—LARYNGOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—5 P.M. Cases and Specimens will be shown by Sir Felix Semon, Dr. Bronner, Dr. Wingrave, Dr. Donelan, Mr. Waggett, and others.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY (West London Hospital, Hammersmith-road, W.).—8.30 P.M. Discussion on the Feeding of Infants in Health and Disease.

WEST KENT MEDICO-CHIRURGICAL SOCIETY (Royal Kent Dispensary, Greenwich-road, S.E.).—8.45 P.M. Paper:—Mr. E. Clarke: The Diagnosis and Treatment of Corneal Affections (illustrated by a number of typical clinical cases). Special General Meeting. In accordance with a requisition signed by five members the Council (under Rule 23) hereby summons a Special General Meeting, to be held at the Royal Dispensary at 8 P.M. on Friday, Feb. 1st, 1901, to consider a proposed addition to the rules enabling the Society to deal with the expulsion of a member legally convicted of any criminal offence involving imprisonment, or complained against for grossly unprofessional conduct.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c

MONDAY (28th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. Galloway: Consultation. (Skin.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. H. P. Dunn: Cataract.

TUESDAY (29th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. Taylor: Consultation. (Medical.)

WEDNESDAY (30th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. R. Harrison: Consultation. (Surgical).

THURSDAY (31st).—CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Dr. D. Grant: Treatment of Inflammatory Affections of the Pharynx and Larynx.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

CHARING-CROSS HOSPITAL.—4 P.M. Dr. Bruce: Medical Cases. (Post-graduate Course.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. Saunders: Arsenical Neuritis.

FRIDAY (1st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. D. Grant: Consultation. (Throat.) 5–7 P.M. Mr. J. Griffith: Class: The Use of the Ophthalmoscope and Refraction.

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1900, which was completed with the issue of Dec. 29th, and the Title-page to the Volume were given in THE LANCET of Jan. 5th.

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The Baillie Lectures

ON

CONSIDERATIONS TOUCHING THE PATHOLOGY AND RELATIONS OF DIABETES.

Delivered at St. George's Hospital on Dec. 5th and 12th, 1900,

BY W. HOWSHIP DICKINSON, M.D. CANTAB., F.R.C.P. LOND.,

CONSULTING PHYSICIAN TO ST. GEORGE'S HOSPITAL AND TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET; HONORARY FELLOW OF CAIUS COLLEGE, CAMBRIDGE.

LECTURE I.

Delivered on Dec. 5th, 1900.

GENTLEMEN,—In seeking for a topic for the Baillie Lectures it occurred to me that I might find something to say about diabetes mellitus both in retractation and reassertion. It would be difficult to light upon any disease which is more distinct clinically, or of which the pathology is more obscure. Not that we know nothing about it. We can with some confidence associate an infrequent form of diabetes with disease of the pancreas. As to the variety of more ordinary occurrence, though we know enough to indicate with probability that the organic seat of the disorder is in the nervous system, yet we are not able to discern the special centre of the mischief, the *fons et origo mali*, nor can we say to any pathologist *rem acu tetigisti*. The needle of Claude Bernard can make a rabbit glycosuric, and something of the kind has been observed in the human subject; but the way of disease is less simple or more minute, nor can we as yet work out the analogy between experimental and human pathology. Much is left for the future. We are conscious that we do not see everything and are well assured that there is much to be seen that has not yet come within our discernment. Indeed, so recent is minute or microscopic pathology as compared with medicine that the wonder is that we have found out so much rather than that we have not found out more. To call a disease "functional" is generally a confession of ignorance. In medicine we must all be materialists and must seek structural change as at the bottom of every persistent perversion of action that is not accounted for by as persistent a perversion of external influences.

The nineteenth century has witnessed greater progress in the science of disease—in other words, in pathology—than all preceding time, and in no department has the progress been more remarkable than in diseases of the nervous system. We no longer talk of serous apoplexy as a frequent cause of death but of uræmia, embolism, or thrombosis. Many lesions which our forefathers knew not of or recognised only by their symptoms have become definite and tangible. Syphilis as affecting the nervous system has become amenable both to observation and treatment. As to essential paralysis, what is now known to be essential is not the paralysis but the mischief in the anterior horns which has caused it. Tetanus is no longer vaguely attributed to nervous irritation but is definitely traced to special and living organisms introduced from without. It has been shown that chorea is accompanied with substantial changes in the cord which, though they do not reveal the pathological starting-point, suffice to show that the relation of the arteries to their surroundings is largely and roughly abnormal. What may be said about chorea applies equally to other diseases of the nervous system, among which we cannot hesitate to place the ordinary form of diabetes.

In all that relates to the ultimate morbid anatomy and fundamental pathology of the nervous system it must be suspected that what we now know is as nothing compared to what the next century will reveal. But we have already seen enough to be able to infer that there is more to be seen. The knowledge of the minute morbid anatomy of the nerve-centres scarcely dates beyond the introduction of methods of hardening which is within the memory of many who do not think themselves senile. In the examination by new modes of a substance so unstable as the tissue of the brain and cord errors were at first inevitable; nor can I claim exemption from the common lot. Post-mortem changes have been supposed to be of ante-mortem origin. Isolated spots refusive of carmine, the results of faulty preservation, have been supposed to indicate degeneration during life and have received the name of "miliary sclerosis." And too much importance was attached in early days to certain appearances of erosion and degeneration about the perivascular canals, which, however produced, were too common to indicate vital change, or at least change of vital importance.

I propose to review the morbid anatomy of diabetes in the light of our present knowledge, excluding everything to which doubt can attach and all appearances which admit of any interpretation other than as the results of living and morbid processes. It must be acknowledged that no constant change has yet been recognised such as would serve to define the disease in terms of morbid anatomy as pneumonia is defined by hepatisation of the lung. The most frequent morbid appearance found in connexion with diabetes is extravasation of blood in the perivascular canals of the brain, not limited to, or constant to, any one part, but scattered apparently at random around the deeper arteries which, microscopically speaking, are of considerable size and also in connexion with the more minute vessels of the pia mater. These extravasations are not the results of rupture, but of transudation, leakage through healthy vessels, implying, if nothing else, that the internal pressure is too much for the parietal resistance. It may be observed in passing that the extravasations in question have no necessary connexion with the coma of diabetes and the disturbance of cerebral circulation which may be supposed to ensue upon it but are found as often as not without the intervention of this possible cause of intravascular disturbance. An instance of the hæmorrhage in question which is displayed by one of the preparations on the table and also by the drawing which I show[1] was found in connexion with some vessels, apparently arterial, in the median line above the fourth ventricle. The vessels, comparatively small ones, were thickly embedded in blood which retained its corpuscular structure. I reproduce some other illustrations which show the blood outside instead of inside its proper vessels, a state of things which, whether peculiar to diabetes or not, must be regarded as undoubtedly abnormal.

I have before me preparations taken from 22 diabetic brains; eight of them display perivascular hæmorrhages—blood in a recent state outside the vessels. Some of these instances were striking, even conspicuous, like those which have been selected for representation. Such hæmorrhages are not essential to diabetes, but they cannot fail to indicate an abnormal condition of the cerebral circulation which is thus declared in more than a third of the fatal cases. This statement takes no account of blood crystals but only of blood in a recent state and, microscopically speaking, in bulk. Still, to limit myself to the brain, other signs and results of morbid action are found in connexion with the perivascular canals. One of these, which is conspicuous as well in the recent state as after hardening, is enlargement of groups of these channels which gives to certain districts of the white matter a cribriform appearance. This is frequent and obvious in diabetes but not peculiar to it. Whether it is the result of distension of the canals or shrinkage of the intervening substance it is occasionally to be recognised in other conditions. I have seen it conspicuously in chronic disease of the brain attended with mental failure and in a less degree where its pathological association was less evident. Beside this cribriform dilatation the spaces about the more considerable vessels appeared in some instances to be enlarged and presented contents which could not but be regarded as abnormal. I have a drawing which was published in the Transactions of the Royal Medical and Chirurgical Society which shows an artery within the corpus denticulatum encrusted with a thick sheath of disorganised nerve-tissue. In other cases leucocytes and amorphous matter were found in these canals, and often blood-crystals in unusual multitude. We see, therefore, in the brain a widely scattered disturbance of the relation between the arteries and their surroundings, not always in the same place nor to the same extent, but significant of morbid action. Though we have not found out the

[1] This preparation and some others here referred to are represented in my work on "Renal and Urinary Affections, vol. i., pages 35, 36, 37, and 38.

initial source of the disturbance we cannot but suspect the vaso-motor centre as holding the key of the mystery.

Proceeding to the cord I may refer to an appearance which, though only occasional, is not without significance. I allude to dilatation of the central canal, which has received the name of syringomyelia. I have before me preparations of eight diabetic cords, in two of which the condition in question is fully displayed. The dilatation in both was conspicuous to the naked eye and admitted of no doubt as to its pathological origin. In a third instance the evidence of dilatation escaped my notice until my attention was called by Professor Woodhead to a puckered state of the walls of the canal as if contraction had succeeded upon dilatation. The dilatation was probably caused by effusion into the canal connected with hyperæmia. It is worth noting that similar dilatation has been observed in other diseases. I have recognised and described a striking development of this condition in chorea.[2] There is reason to believe that it may be either congenital or acquired; if acquired, as it presumably is when in connexion with disease, it appears to be associated with hyperæmia and exudation.

Certain of the diabetic cords (three out of eight) presented a peculiar hyaline modification of the lateral parts of the grey horns which I have represented elsewhere.[3] Renewed examination has, however, led me at least to entertain the probability that this local change, limited as it was to the deeper parts of the structure, may not have been wholly unconnected with post-mortem change. There were, indeed, some unequivocal evidences of morbid action, particularly in the shape of vascular engorgement, but the translucency of the grey matter, limited as it was to the deeper parts, admitted of doubt. I have referred the sections in question to an eminent pathologist and to an eminent neurologist. One considers the negative change as morbid, the other as post mortem. I incline myself to the latter opinion, and therefore rest no argument on the so-called sclerosis.[4] Since my observations were made Dr. R. T. Williamson has published two cases of diabetes with evidences of degeneration of the posterior columns. These consisted of change of colour, swelling of the nerve-fibres, and proliferation of the connective tissue. These local alterations were supposed by Dr. Williamson to resemble in place and character the degenerations found to follow experimental section of the cord and were hypothetically attributed to the action of the toxic blood. This explanation, however, does not explain the limitation of the change to the posterior columns. Dr. Williamson found what he has described in two out of five cases examined.

In reviewing the morbid anatomy of diabetes we must, in the first place, have regard to the fact that we have to do with a structure which is prone to rapid alteration as soon as the antiseptic influence of life is removed and, in the next place, make due allowance for the effect which saccharine blood has upon certain tissues lest we associate with the origin of the disease changes which are its consequences.

Next to the brain the liver calls for consideration as supplying an early, though probably not the initial, step in the diabetic process. None of the recognised diseases of the liver, such as cirrhosis, cancer, or abscess, are connected with diabetes; nevertheless, the diabetic liver presents certain characteristics which differ from those of health and which suffice to show that this organ is in some way involved in the disturbance. The organ is large, hard, red, and congested. The vessels are full of blood and have been known to present coagulation both in the arteries and veins which is open to question as having formed after death or shortly before it, but which in either case implies an abnormal fulness of the vascular system. I have published as an instance of ante-mortem coagulation in the disease in question a drawing of a section of a diabetic liver in which both the portal vein and the hepatic artery contain clot.[5] I need not say that after death the arteries are usually empty, while for the veins to hold their contents *in situ* after the organ is cut into small pieces very complete coagulation must have taken place before the post-mortem examination. On the other hand, it is clear that if the clotting occurred before death it was not long before, for the clot shows no sign of morbid action. Whenever the coagulation occurred, especially in the arteries, it must be taken as indicating an abnormal fulness of the vessels.

It is not always easy to decide between ante-mortem and post-mortem changes. This remark applies not only to coagulation in the vessels, but also to a condition of capillary dilatation about which I was long in doubt. I thought formerly that the evidence was in favour of this having occurred during life; I now have come to the conclusion that the greater probability is on behalf of its having been created after death by the development of gas in the tissue as the result of decomposition.

I do not propose to dwell upon the pathological changes which are obviously consequent upon diabetes, but only to deal with such as are presumably connected with its cause. Among the consequential changes is a form of "pulmonary consumption" which resembles that due to tubercle and is sometimes, but not always, tuberculous. The kidneys become inflamed, presumably as a result of the passage of the abnormal urine, and the same cause gives rise to irritation and inflammation of the external urinary organs. Cataract is engendered apparently by the physical action of the saccharine blood. But the morbid interest centres in the nervous system and the question whether the changes in the brain and cord are results of the disease or are antecedent to it. It is not impossible that the dilatation of the canal of the cord may be the result of an inflammatory process set up by the morbid blood. The same hypothesis may be hazarded with regard to the changes, be they of the nature of spinal myelitis or peripheral neuritis, which occasion the loss of the patellar reflex. I say these morbid conditions *may* be secondary to the glycosuria; it is not certain that they are so. But when we ascend to the brain we see probably not all there is to be seen, but certain things which are difficult to explain except as the results of morbid processes primary to the brain itself. Such are the evidences of morbid action in the perivascular canals, more especially the frequent hæmorrhages by transudation. Not that these are peculiar to diabetes; all that can be maintained is that they are not results of the saccharine state of blood, but are in some way connected with its cause. They indicate not so much irritating blood as an abnormal attitude of the blood-vessels, as if their walls had become relaxed owing possibly to some change in their innervation. Whence this change of innervation, if this there be, or how engendered, is as yet hidden from our view. There must necessarily be something behind, though we do not know what. If we could find some constant change in an appropriate vaso-motor centre we might discern in this the reason of the scattered arterial disturbances and the essential origin of the disease, but no such fundamental discovery has yet been made. Nevertheless what has been found means something; if we have not yet reached the root perhaps we have got hold of a branch. Disorders proper to the nervous system, chorea in particular, show a similar condition of the cerebro-spinal centres; this may be held to indicate that diabetes like chorea concerns these structures, though in neither case are we able to get deeper than what must be superficial manifestations.

Turning from the dead to the living I may recall the fact that the famous discovery of Claude Bernard that the urine of the rabbit was made saccharine by puncture of the floor of the fourth ventricle was anticipated in the human animal by the elder Larrey, the great surgeon of the First Napoleon. Bernard made the earliest experiments which led him to this conclusion in the year 1849. Baron Larrey[6] records a case which came under his observation in 1820 in which the same result was recognised from a similar cause. A fusilier, 22 years of age, received a thrust from a foil, from which the button had broken, through the inner wall of the right orbit, deep into the interior of the skull. Two and a half months after the accident he was suddenly attacked with diabetes, the urine displaying a large quantity of sugar. This condition lasted for seven days and then disappeared. Three months after the accident the patient died somewhat suddenly. After death it was found that the weapon had penetrated deeply into the brain, its course being indicated by a canal containing coagulum. This involved first the inner and fore part of the right hemisphere and then entered the left, piercing it as far as the lower wall of the left lateral ventricle almost to the medulla oblongata. This detached observation, made as it was 29 years before Bernard's discovery, has

[2] Dickinson: On the Pathology of Chorea, Transactions of the Royal Medical and Chirurgical Society, vol. lix., 1876.
[3] Dickinson: Diabetes, p. 46. Plate III.
[4] Brit. Med. Jour., Feb. 24th, 1894.
[5] Diabetes, p. 49.
[6] Larrey: Clinique Chirurgicale, vol. i., p. 177.

a sort of prophetic interest and may be associated with much that has since come to light with regard to traumatic glycosuria. Many instances might be brought together in which injuries of the head have been followed by glycosuria, generally temporary. I have elsewhere[7] quoted the case of a railway guard who was knocked on the head by a lever in connexion with the brake and who subsequently passed saccharine urine in such abundance that all the vessels in a cottage to which he was taken did not suffice to contain it. I need not multiply cases of this sort, of which several will be found in my book to which I have referred. They are of the highest interest taken in connexion with Bernard's discovery and with the hypothetical origin of diabetes in the brain.

CLINICAL CAUSES OF DIABETES.

With these indications, as provided by morbid anatomy, physiological experiment, and human accident, we may glance at the ordinary clinical aspect of the disease in relation to the nervous system. Grief, anxiety, terror, may all be followed by diabetes so closely that there is no room for doubt as to their having occasioned it. The great Dr. Willis, the describer of the circle which bears his name, the first, so far as I know, to draw attention to the presence of sugar in diabetic urine, refers the condition to "the guzzling of strong drink" and to "sadness or long sorrow," and he held that "the nervous juices" had much to do with its origination. It is well known as a result of commercial disaster, and it may be said truly that every panic on the Stock Exchange produces its result in diabetes. It has recently come to light that engine-drivers are especially subject to this disease, presumably from the anxious nature of their occupation.[8] Dr. A. H. Smith of New York appears to have been the first to draw attention to this connexion which has been confirmed by Dr. Saundby on the authority of Mr. Herbert Page, surgeon to the London and North-Western Railway Company, who finds that the engine-drivers on this railway become diabetic in nearly twice the proportion of the ordinary population.

There are other causes of this disorder, the most prominent of which is heredity. Ancestral association does not bear upon this question of nervous origin; some nervous diseases are hereditary, so are others which have their origin elsewhere than in the nervous system. Diabetes presents itself together with gout with greater frequency than can be explained otherwise than by a pathological connexion between the two disorders. Gout causes, or at least precedes, diabetes as if diabetes were one of the consequences of the gouty state. The diabetes subsequently, when attended with much loss of sugar, is followed by a disappearance, or rather a non-recurrence, of the gout. Thus it would seem that gout causes diabetes and diabetes cures the gout. Of all the circumstances to which the disease can be attributed the two that stand out with the greatest prominence are heredity and mental impressions.

CLINICAL ASSOCIATIONS OF DIABETES WHICH RELATE TO THE NERVOUS SYSTEM.

The loss of the patella reflex has long attracted notice and may be regarded as one of the most constant signs of the disease. I have known this loss to be accidentally discovered when no other sign of diabetes had been recognised and sugar to be subsequently found. I should say that the loss of knee-jerk is an early manifestation of the disease and that it occurs in a larger proportion of cases than is commonly supposed. It is impossible not to connect this with some change either in the cord or in the nerves. I have not myself examined the peripheral nerves in diabetes, but others have without finding any morbid changes. As to the cord I need not repeat what I have already stated. Peripheral neuritis has been regarded as one of the results of the toxæmia of diabetes, and thus may arise the loss of reflex; on the other hand, it is not impossible that this loss may have to do with a primary change in the cord.

EARTHY PHOSPHATES IN DIABETES.

Another point of contact between diabetes and the nervous system is to be found in the occurrence of phosphaturia, an excess of the earthy phosphates, essentially phosphate of lime, in the urine in this disease. In certain conditions of nervous irritation the urinary phosphate of lime is increased sometimes to double its normal amount, or even more.[9] The action of liquor potassæ in its ready and conspicuous precipitation of the earthy phosphates affords a ready guide to states of the nervous system, of which worry and overwork are among the more prominent. Whether the phosphoric acid or the lime be the leading partner in the dance may be taken into question, since the superabundance presents itself in a combination of the two. Considering that brain-tissue contains much phosphorus and little lime, it is to be presumed that much wear or waste of brain may give rise to increased making and discharge of phosphoric acid and that the acid takes the earth out with it by virtue of their mutual affinity. However this may be it is a matter of familiar observation that in certain states of brain expressed by such terms as "worry" and "nervous irritation" the discharge of lime with the urine, virtually as phosphate, is increased. Many a student in expectation of an examination has been alarmed by the appearance of phosphate of lime in his urine, often in a crystalline form, though the shape is immaterial, to disappear when the peril is over-passed. But I need not repeat instances to show that phosphaturia goes with perturbation of brain.

Turning now to diabetes it appears that in severe and advanced conditions the increase of urinary lime (practically all in the form of phosphate) may be termed extraordinary, since it is unexampled in any other disease. I have placed on record a case where the daily excretion of lime exceeded three grammes, another where it exceeded two grammes, and several where it approached one gramme. The average of the urinary lime in health according to Dr. Parkes is 0·26. Call it 0·3 by way of being liberal. The maximum of my cases of diabetes was 3·38, 11 times the average of health. The calcareous increase in these cases does not wholly depend on the amount of urine, for it is out of proportion to the diuresis. To take a single example—a woman passed in one day 4980 cubic centimetres of urine, which was found to contain 3·38 of lime. Supposing that this urine contained only the normal percentage of lime this would amount for the whole quantity of urine to under one gramme. Thus the lime is increased out of proportion to the urine. Having regard to the affinity which exists between lime and sugar it may reasonably be suspected that the superabundance of lime in diabetic urine may depend on the attraction of the sugar for the lime, as a consequence of which the sugar carries out the lime with it. But the facts give no encouragement to this supposition. I found that a patient with severe diabetes under strict diabetic diet passed on an average of two days 3·28 grammes of lime. When the urinary sugar was largely increased by the addition of sugar to the diet the lime amounted to 2·76 grammes.[10] With more sugar there was less lime—as if the one did not directly depend on the other. Much has yet to be learned concerning the connexion of the nervous system with diabetes, but having regard to the undoubted relation of the excessive secretion of the earthy phosphates with certain conditions of cerebral irritation it cannot but be suggested as a provisional hypothesis that the extravagant exit of phosphate of lime in some cases of diabetes has to do with the state of the nervous system in this disease.

Another clinical fact in diabetes which suggests a connexion with the nervous system is the peculiar dusky redness of complexion which is often presented in severe and advanced cases. This is not a bright arterial flush nor is it venous lividity, but something between the two, not unlike what is sometimes connected with chronic alcoholism. Some degree of vaso-motor paralysis would explain the appearance. The peculiar tongue of advanced diabetes may be open to a similar explanation though another may be offered.[11] The dry tongue often becomes red and raw-looking and has been likened to raw beef. Hyperæmia of the mucous surface is obvious. This may be attributed to deficiency of saliva and consequent retention of irritant matters which are not washed off, or to a nervous failure which promotes the congestive process.

INSANITY AND GLYCOSURIA.

As possibly throwing light on the connexion of glycosuria with changes in the nervous centres it occurred to me many years ago to inquire whether this condition showed any bias in favour of lunatics. If both insanity and diabetes are results of changes in the brain it is probable, to say the

[7] Dickinson: Diabetes, p. 85.
[8] Dr. Saundby on Diabetes, THE LANCET, May 19th, 1900, p. 1421.
[9] Dickinson: Renal and Urinary Derangements, vol. iii., p. 1233; Diabetes, p. 122.
[10] Dickinson: Diabetes, p. 172.
[11] Dickinson: The Tongue as an Indication in Disease, p. 76.

least of it, that the lesions of insanity might sometimes be such as to make the urine saccharine.[12] I put this to the test at Bethlem Hospital with the result that among 106 lunatics the urine of 14 gave appreciable reductions of copper, together with some degree of darkening with liquor potassæ. I pass over minute evidences of reduction and such as were not confirmed by the potash test. Copper may be reduced by other things than sugar, and it may have been so in some of the cases in question, but in every one the reduction was decided. In three it was considerable and in all it was corroborated by liquor potassæ. I must add that in no instance did the urine or the symptoms present marked diabetic characters. The conclusion appeared to be indicated that glycosuria in small amount accompanied insanity, not frequently, but often enough to imply a morbid relation between the two. The proportion of glycosuria thus indicated, minute as might be the glycosuria and small the proportion, appeared to be necessarily abnormal, since sugar is no tangible ingredient of healthy urine. Dr. Hale White, who repeated my observations with the legitimate purpose of subjecting them to criticism confirmed them to a certain extent in so far that in the urine of 49 lunatics at Bethlem he found slight cupric reduction in five and undoubted sugar in two. As the testimony of an adversary (an adversary in a scientific sense only) this evidence is of value as presenting the irreducible minimum of concurrence. Here the question rested and remained in oblivion so far as I know for 19 years. My observations were published in the year 1877. In the years 1896 and 1897 Dr. Hubert Bond of the London County Asylum revived the subject with results which I will briefly recapitulate.[13] Putting together Dr. Bond's two papers the sum of his results is this. Among 355 recent cases of insanity Dr. Bond found sugar in the urine in 19, a proportion of 5·35 per cent. In addition to this series where the numerical proportion of saccharine to non-saccharine urine was ascertained Dr. Bond became acquainted with 13 other cases of insanity complicated with glycosuria, making a total of 32 instances in which the mental was associated with the urinary change. Dr. Bond appears to have made repeated examinations in every case and to have employed in each both the copper and the fermentation test. Taking all the evidence together the inference is not to be avoided that glycosuria in a small but tangible proportion of cases is a necessary concomitant of insanity. Insanity is a disease of the brain, though the morbid anatomy like that of diabetes can scarcely be said to have been reached by our crude and infantile attempts. Much remains for the future. But with both we have discovered indications of a pathology though not its essentials. It may be presumed that the cerebral changes which belong to insanity have something in common with those which give rise to glycosuria, though the relationship is evinced only in a minority of instances.

It must be confessed that we have not got to the bottom of the pathology of diabetes. Is it possible, then, that it has none, or rather none which is fundamental? Is it possible that diabetes is a "functional disease"? I say it is not possible. The phrase is useful as a cover for ignorance, but it is mischievous where it substitutes acquiescence for inquiry. If a machine goes wrong there must be something wrong in the works, or in the stuff supplied to it if the machine be of a consuming kind, or in the influences, motive power, and what not which are brought to bear upon it. If the machine goes wrong notwithstanding that it is supplied with proper stuff to work upon and actuated with proper moving powers there must be something wrong in the machinery which we ought to be able to find out. If a mill were to go wrong and to discharge bran where it ought to discharge flour we should scarcely be satisfied with the engineer who assured us that the mischief was functional. If the perverted action which constitutes diabetes persists notwithstanding that the material supplied to the organism and the circumstances by which it is surrounded are such as in other cases are attended with no such perversion we must look into the organism for the cause of the error, for though we may not succeed in finding it it is surely there.

What may be called the superficial morbid anatomy of diabetes has been sufficiently dwelt upon with due allowance for what may be consequent upon the disease rather than antecedent to it. Enough remains to give significance to certain clinical observations: the undoubted origin of the disease in mental causes; its association with a larger excretion of phosphate of lime than can be accounted for by the diuresis and which presumably has to do with the nervous phase of the disease; the loss of the patella reflex, which must be taken *cum grano* as of somewhat uncertain bearing; and, finally, the concurrence of glycosuria with insanity, which is too frequent to be accidental.

[12] Dickinson: Diabetes, p. 62.

[13] Some Points in the Relation of Diabetes to Insanity, by C. Hubert Bond, M.D., Journal of Mental Science, January, 1896, April, 1897.

ABSTRACT OF

A Clinical Lecture

ON

FEMORAL HERNIA.

Delivered at St. Thomas's Hospital on Oct. 19th, 1900,

BY WILLIAM H. BATTLE, F.R.C.S. ENG.,

ASSISTANT SURGEON AND JOINT LECTURER IN PRACTICAL SURGERY, ST. THOMAS'S HOSPITAL.

GENTLEMEN,—Although in the majority of instances it is possible, especially in hospital practice, to distinguish a femoral from other forms of hernia met with in the groin, there are cases in which it may be not only difficult but almost impossible without operation. Few surgeons of much operative experience are unable to recall examples of such mistakes. It is very easy for you to remember the anatomical landmarks which define the position of a femoral hernia, how its neck is situated below Poupart's ligament, to the outer side of the pubic spine and to the inner side of the femoral vessels. As a guide in ordinary practice, if you wish to find the ring quickly place the tip of the finger on the femoral artery immediately below Poupart's ligament, allow half an inch to the inner side for the femoral vein and then comes the femoral ring. You must make yourselves acquainted with the various points mentioned by examining carefully the patients who come before you in the out-patient department. In the ordinary subject of this hernia [a specimen of which was shown] you may have no difficulty in finding the pubic spine, but when the patient is a woman and stout and makes examination difficult it may be hard to define the adductor tendon which acts as a guide to that point of bone. Most of the mistakes in diagnosis arise in stout women who refuse a proper examination, and there are many such. Even when suffering from strangulation of the bowel in a hernia they may deny the presence of a swelling in the groin and refuse to be examined, although they are told that their life may depend upon it. I have recently heard of a case in point, that of a woman who refused examination for three days and in whom the gut was gangrenous at the operation, which, of course, was performed as soon as the hernia was found. It would be your duty in such circumstances to insist on the examination or to retire from the case, giving your reasons for refusing to take the responsibility of it. In the very stout it may be difficult to find a small hernia, although strangulated, the pain being chiefly referred to the umbilicus and not to the femoral region, whilst examination elicits no complaint of tenderness from the patient. I have twice been called upon to operate for intestinal obstruction when in each case the cause was femoral hernia of small size which had been overlooked. Examine the groins carefully in all cases of intestinal obstruction.

As the sac of a femoral hernia often turns up over Poupart's ligament the hernia may be mistaken for an oblique inguinal, but it is usually possible to feel the neck of the sac extending downwards to the femoral ring, and the direction in which the contents can be reduced indicates the line of the sac. If the patient is intelligent the history of the point of commencement and duration of enlargement of the rupture will probably assist you. Interstitial hernia may (but rarely) simulate a large femoral hernia as shown by an illustration in Macready's treatise on ruptures. Abdominal hernia, the variety which comes through the lower part of the linea semilunaris, may resemble an exceptionally large protrusion through the femoral ring. As regards strangulated femoral hernia I do not intend to say more at present than advise you to insist on early examination of the femoral region. When a

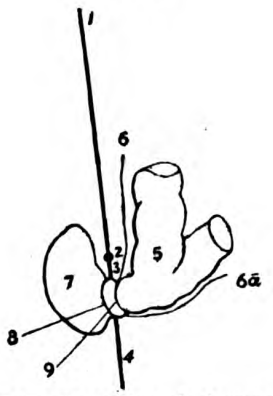
patient has symptoms of intestinal obstruction do not take it for granted that he will know if there is a hernia, for patients are often ignorant of the fact. Remember also in the operation when dividing the edge of Gimbernat's ligament to cut as little as possible, using a blunt knife. Do not make the tendency to hernia worse by enlarging the opening unnecessarily.

We have to consider the diagnosis of this form of hernia from other swellings in the femoral region, and in the first place it is well to ascertain if there is a hernia or not. I have recently had under my care a patient sent to me by Dr. Donelan in whom the sac is so thin that it can hardly be felt when she is lying down, but when she stands and coughs there is no doubt of the presence of a femoral hernia. Some of us could not find it when she was examined lying down. Examine your patient when standing, afterwards when lying down on the back. In most cases it is easy to state whether a hernia is reducible or not; there is a definite swelling which goes back on lying down and it is easy to feel the empty sac where you expect to find it. In some this sac feels lobulated and thickened and there may be difficulty in arriving at the correct opinion as to the presence of a thickened fatty sac or an irreducible omental hernia—the sensation conveyed to the hand may be much the same. If there are no symptoms pointing to the involvement of abdominal contents in the hernia the history of the case may afford a clue; for instance, the patient may state that the hernia had suddenly become larger and remained so; a date on which this occurred may even be mentioned. A sign which may be elicited in cases of irreducible femoral hernia is the dragging on the sac of which the patient complains when pressure is made over the lower abdomen on the affected side, especially if the abdominal walls are lax. I think this sign of more frequent usefulness than that of feeling the band of omentum or mesentery which may be adherent. In the reducible form a condition which is frequently mistaken for a hernia is a varix of the internal saphena vein. Some of you will remember a case sent in for radical cure during the summer, and may remember the difference between the two—the swelling was lower down, the impulse on coughing was accompanied by a thrill, and after lying down when a finger was placed over the femoral ring the resumption of the erect position with the finger still applied did not prevent a return of the swelling; its colour was bluish; there were no other dilated veins in the limb, but such are usually found. Excision of a portion of the vein below it sufficed to cure it. The ordinary psoas abscess does not much resemble a hernia unless the fascia below Poupart's ligament has yielded and permitted the abscess to bulge forwards; in this case it may have a soft elastic feel, very like a hernia of intestine; but it is dull on percussion, is but partly reducible, and fluctuates above and below the ligament. Evidence of spinal disease will usually be found—if looked for.

When the hernia is irreducible there are two conditions which may be mistaken for it—enlarged glands and lipoma. Here, again, the evidence of a pedicle must be sought for passing into the femoral ring. Careful inquiry into history (as mentioned in the reducible form where a fatty sac remains) must be made. There is not much difficulty in most cases of glandular enlargement, for there are usually several glands affected, but if the gland is single and placed over the saphenous opening with an attachment to deeper parts the diagnosis is less easily made, and in the absence of a cause for the enlargement and a doubtful history it may be advisable to explore. A year ago a young man was admitted with a swelling in the left groin over the saphenous opening. He gave a history of sudden onset five days before with vomiting and constipation. The testis was absent from the scrotum on the same side and he had some fever. Exploratory incision showed a gland-like body over the femoral ring with a pedicle passing into the canal; in this was a fair-sized artery. This was removed and he rapidly recovered. The glandular swelling was an enlarged lymphatic gland.

Irreducible inflamed hernia and enlarged glands may be co-existent, the glands being enlarged in consequence of absorption of inflammatory products from the sac contents. In a case of this kind sent to my care by Mr. A. J. Southey of Colnbrook I was able to come to a right conclusion as to the presence of a hernia by the history of the case, and at the operation found an inflamed and adherent appendix vermiformis in the sac, closely surrounding and attached to which were several inflamed glands. Hydrocele of the hernial sac occurs with sufficient frequency to require consideration; in this there is an accumulation of fluid in a sac which is shut off from the general peritoneal cavity. This occlusion may arise from adhesion of the omentum or of the intestine to the sac, or as a result of adhesion of the opposed peritoneal surfaces possibly caused by this pressure. The accompanying diagram (Fig. 1) was used to illustrate the changes

FIG. 1.



Vertical antero-posterior section. 1, Aponeurosis of the external oblique. 2, Poupart's ligament. 3, Falciform process. 4, Fascia lata of thigh. 5, Intestine with lateral projection into the canal. 6, 6a, Peritoneum. 7, Larger sac. 8, Firm fibrous membrane separated from the adherent intestine by the fluid contained in the smaller sac, 9.

found in a case under my care some years ago,[1] at a time when hydrocele of the hernial sac was not so well known as at present. When comparatively small there is not much difficulty in the diagnosis, but when larger—and they may attain large size—psoas abscess, hydatid, and distension of the bursa under the psoas muscle must be considered. A small chronic glandular abscess may resemble a small hydrocele, but careful consideration should prevent a mistake.

An interesting case of hydrocele of the sac was recently sent to me by Dr. Wansbrough Jones of Harrow. The patient, a girl, aged 22 years, had a swelling over the external abdominal ring, which it occupied completely, there was an impulse on coughing, but not reduction on pressure. It was internal to the spine of the pubes. When submitted to operation we found a hernial sac containing free fluid and from this sac a narrow neck was found to pass, not along the inguinal canal but downwards over Poupart's ligament to the femoral ring. The fluid had accumulated in consequence of the sharp bend in the narrow neck of the sac in the unusual course taken by it. Cases of femoral hernia which have been submitted to operation may present curious developments in the sac, but it is rare for them to simulate inguinal hernia, though such are recorded.

When a femoral hernia is irreducible it should be submitted to operation unless there is something in the state of the patient to contra-indicate it. You must then arrange for the proper adjustment of a truss according to the necessity of the case, but my experience of such treatment is that it is not often successful in preventing strangulation in later life.

To consider the radical cure of femoral hernia is to approach a subject of much interest, and many procedures have been recommended at various times and by different surgeons to solve this problem. The chief of these are: 1. Simple ligature of the sac. This method, like that employed formerly in the attempted cure of inguinal hernia, does not diminish the size of the opening through which the protrusion has passed, nor alter to any extent the conditions which predisposed to the hernia. By itself it can seldom succeed, but it is a preliminary part of the operation in the following methods unless the contrary is expressly stated. 2. Isolation of the sac and its displacement upwards into the abdominal wall (Kocher's method). 3. Closure of the saphenous opening by suture of the pubic to the iliac portions of the fascia lata. 4. Suture of Poupart's ligament and

[1] THE LANCET, Feb. 26th, 1887, p. 413.

falciform process to the fascia over the pectineus. 5. Suture of Poupart's ligament to the periosteum of the pubic ramus. 6. Formation of a flap from the fascia over the pectineus and its implantation into the femoral ring. 7. Formation of a flap from the pectineus muscle and its implantation into the femoral ring. 8. Excision of the sac, suture of the peritoneal opening, clearing of the femoral canal. The anterior wall of the canal (with Gimbernat's ligament) is then sutured to the posterior wall, Poupart's ligament is sutured to the fascia over the pectineus, and finally sutures are placed to close the saphenous opening (Stimson).

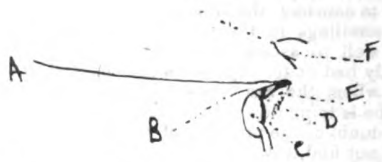
The question which of these methods (if any) will give the desired result is not one that can be decided at once without a consideration of many factors in the case. The most important of these are the age of the patient, the size of the femoral canal, and the general condition. You will do wisely not to pin your faith on any one method as suitable to all cases. It is of importance to consider the age of the patient, because the suturing of tendinous structures to fascia cannot be expected to succeed in a patient who has a fatty degeneration of that tissue, and this is often found in the subjects of femoral hernia who are getting on in life. Again, if the femoral canal is large and rigid as the result of distension by a long-standing hernia, sutures are very likely to yield to the strain and to cut out of the fascia into which they have been passed. The general condition of the patient as at the termination of an operation for strangulation is also important, as the shortest method of treatment likely to assist in making things secure, if only for a few months, may have to be adopted.

In many instances when the ring is small simple suture of Poupart's ligament to the fascia over the pectineus will suffice if the sac has been ligatured and the stump pushed well into the upper part of the canal. I have used the flap of muscular tissue raised from the pectineus and impacted in the canal, but the result was unfortunate. The muscular flap atrophied and the patient appeared later with a hernia much increased in size and a femoral ring which was decidedly larger than before the operation. I have also tried a flap of fascia raised from the pectineus, but do not think that more good resulted than from suture alone. Mr. Carwardine speaks highly of Stimson's method, but there are two things which would make me hesitate to employ this—one is the number of sutures required in such a small area and inserted in structures of low vitality; the other is that the femoral canal is not to my mind satisfactorily blocked at its upper end.

In thinking over the question of radical cure it seemed to me that we required a method which would enable us not only to bring the remains of the sac into the abdomen, but also to place an obstacle to the descent of a hernia between this and the canal. A plan for making a shutter out of the external oblique described below occurred to me and I have successfully performed the operation in three cases, one male and two female. The inguinal canal is strengthened by the operation, its outer wall being doubled and the external ring diminished in size. Not many months have elapsed since the first case was operated on, so it is not possible to speak about the ultimate result, but I am hopeful that it will prove effective (it has answered well so far) and stand the test of time.

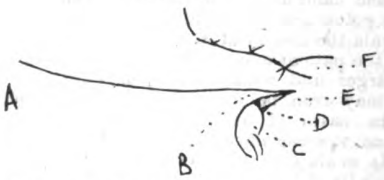
The last case and the operation performed are as follows. A married woman, aged 23 years, was admitted to St. Thomas's Hospital under my care on July 4th, 1900, for an irreducible femoral hernia on the right side. She could not say how long there had been a swelling in the groin, but it had been there for at least two years, and she did not think that there had been any increase in size during the past four months. The hernia could only be partly reduced when the patient was lying on her back. Some omentum remained, the intestine going back easily, and the hernia quickly recurred when she stood up. The opening through which the protrusion came admitted a large forefinger. The general condition was satisfactory. She had never undergone operation or worn a truss. On July 12th the following operation was performed. A vertical incision was made over the sac and portion of abdominal wall adjoining it, directly over the line of the femoral canal. The sac was exposed, opened, and the contents were reduced after ligature and division of adherent omentum. The sac was then dissected out, ligatured at its neck with silk, and cut away. This silk ligature was kept long. The first incision which exposed the sac also exposed the aponeurosis of the external oblique and by the use of a retractor in the upper part of the wound the external inguinal ring was easily defined to the inner side. Incision was made outwards from this and the aponeurosis of the external oblique was divided in a line almost parallel to

FIG. 2.



Poupart's ligament and along the course of its fibres. The external pillar of the ring and aponeurosis of external oblique muscle attached to it were now separated from the contents of the inguinal canal down to the femoral canal. The neck of the sac, freed from its attachments, was lifted out of the

FIG. 3.



latter by its ligature, which was then cut short. Sutures of thin silk were inserted in the upper part of the severed aponeurosis, which easily came down, and carried as indicated in the diagram (Fig. 3). No 1 was secured to Poupart's ligament over the femoral vein; No. 2 passed through the femoral ring and then into the fascia over the pectineus, which formed the posterior boundary of the ring; and No. 3 was sutured to Gimbernat's ligament. By this means a shutter of great strength was secured at the upper end of the femoral canal. Additional sutures were then

FIG. 4.

placed as follows: three to unite the lower half of the external wall of the inguinal canal to the aponeurosis, which was now beneath it, and two to close the femoral ring further by drawing the pectineal fascia and

Poupart's ligament into apposition. The aponeurosis was thus fixed not only by the deep stitches but also by the more superficial ones and could not slip back to its former position. Any dragging on the aponeurosis would thus be at the junction of the two parts of the inguinal canal and not at the line of insertion of sutures. The external wall of the inguinal canal was thus doubled in thickness throughout most of its width and the external ring was diminished in size. The wound was closed in the usual way and healed by first intention. The only thing noticeable now besides the scar is some want of fulness of Scarpa's triangle owing to absorption of fat from pressure of the former hernia. The operation requires strict antiseptic precautions and it is desirable to clear the outer surface of the lower part of the inguinal canal from the overlying fascia. I think this method of operation suitable to cases in which the canal appears too large for the ligature of the neck of the sack and the suturing of Poupart's ligament to the fascia over the pectineus to be done with a prospect of success. There are some cases which may be beyond relief by this method, of which the following is an example.

The patient was a woman aged 56 years. She had suffered from a hernia for 30 years, and it had been irreducible for 27 years. About five years ago she had symptoms of strangulation, which were relieved by operation at another hospital, but as no account of the operation was kept I am unable to say what was done, but probably no radical cure was attempted. She came into St. Thomas's Hospital on Dec. 8th, 1899, with a complaint of pain in the rupture and of vomiting. The hernial swelling was very large, thin-walled, shaped like a big sausage, and when she stood, reached almost to her knee. There was a scar over it remaining from the former operation and the hernia could not be reduced. The contents appeared to be almost entirely intestinal in character. The opening through which they had come was large and it was difficult to imagine how a femoral ring could be dilated sufficiently to permit of the passage of such a large protrusion. Her condition was unsatisfactory, she was feeble and suffered from chronic bronchitis, and was not then in a good condition for operation. Had the symptoms continued, however, it would have been necessary to operate at once, but rest and proper diet relieved her and whilst attempts by means of elastic pressure to reduce the hernia were being made, her bronchitis was satisfactorily treated and her general health improved considerably. On Jan. 8th, 1900, the hernia was subjected to operation and the opening through which it had come was closed. A long incision was made over the upper part of it extending over the lower abdomen, the thin sac was opened, and the contents (all small intestine) were reduced; this was not quickly or easily effected as the intestinal coils were thickened, adherent to each other and to the lining of the sac. The opening into the peritoneal cavity easily admitted four fingers and all around the peritoneum was closely adherent to the fibrous structures, so that the neck of the sac could not be tied; it was sutured like the peritoneum of an abdominal wound after the sac had been separated and excised. Sutures, also of silk, were then inserted between the deep fascia of the thigh and Poupart's ligament, both internal and external to the femoral vessels. The pectineal fascia was very fatty. A large piece of redundant skin was then removed and the superficial wound was stitched with silkworm gut. A drainage-tube was inserted. Some localised suppuration followed in the upper part of the wound, but it was not extensive, and there was some return of the cough, but she was able to leave the hospital and has been seen since. The wound has soundly healed and is without bulging. This hernia is the largest femoral hernia that I have seen, and had the abdominal walls been at all rigid there might have been some trouble in reducing its contents into the abdomen. There was formerly a cast[2] in our museum at St. Thomas's Hospital which showed a femoral hernia of even larger size. It extended to within an inch of the knee-joint and in its lower part was an artificial anus through which the fæces were discharged. The coverings were so thin that the peristaltic movements of the intestines could be seen through them.

[2] Catalogue, vol. iii., 1859, p. 333.

BRISTOL NATURALISTS' SOCIETY.—Dr. A. B. Prowse has been elected President of this society for the ensuing year.

THE HÆMORRHAGIC DIATHESIS IN TYPHOID FEVER AND ITS RELATIONSHIP TO PURPURIC CONDITIONS IN GENERAL.[1]

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IT is a matter of common observation that in certain infectious and presumably infectious diseases like typhus fever, scurvy, Werlhoff's disease, and peliosis rheumatica, hæmorrhagic eruptions develop in the skin and mucous membranes. That which is the primary and cardinal train of symptoms in these diseases may be found exceptionally as a complication in certain others, like variola, scarlet fever, measles, enteric fever, cholera, yellow fever, sepsis, and acute atrophy of the liver.

In the course of typhoid fever or enteric fever a number of examples have been recorded during the past two decades where hæmorrhagic complications have supervened. Of course, minor hæmorrhagic manifestations, like epistaxis which so frequently ushers in the attack, or like intestinal hæmorrhage which is present in a considerable proportion of ordinary cases, are common enough, while either of these conditions may, under certain conditions, be part and parcel of a general hæmorrhagic tendency and represent its first symptom. This does not in itself constitute the hæmorrhagic diathesis. This term should be restricted to those cases where multiple hæmorrhages take place and which are evidenced clinically by purpuric eruptions into the skin, oozing of blood from the mucous membranes, epistaxis, hæmoptysis, hæmatemesis, melæna, or metrorrhagia. All of these symptoms, of course, may not be present simultaneously, since very varying grades of the condition exist. Most authorities are agreed that such occurrences are very rare, though their possibility has been recognised for many years.

Some hesitation has arisen in our minds in regard to the proper expression which should be used to designate this interesting form of typhoid fever. The term "hæmorrhagic diathesis" is possibly open to criticism, since to many minds it connotes the idea of some pre-existing constitutional deficiency or dyscrasia of the blood or some congenital weakness of the blood-vessels. With the single exception of certain of Wagner's cases, to be referred to later, such inherited defects can usually be excluded in the type of disease under consideration, and yet it is clear that there is at work some serious disturbance of the blood. Further, the term "purpura hæmorrhagica" is not altogether suitable, since it has not been settled between clinicians and pathologists what conditions are properly to be included under this designation. Litten, for instance, restricts the term to Werlhoff's disease, Schönlein's disease, and some others, and would deny it to the purpuras which occur in variola, typhoid fever, sepsis, and mineral poisoning. We must, however, dissent strongly from Litten's view, for the trend of recent pathological research, as we shall see, is to prove that the prime factor underlying the vast majority of cases is some systemic intoxication, either bacterial, chemical, or animal, and there is no sufficient reason for believing that Werlhoff's disease and the group of so-called "idiopathic purpuras" differ essentially from the others in this respect.

That circulating toxins, bacterial or otherwise, do produce marked alterations in the quality and composition of the blood and lead to degenerations of the blood-vessels may be regarded as proven. Since, then, we have to admit a serious qualitative vitium in the blood, even though it be acquired, and since we are unable entirely to exclude the presence of some inherited defect, it would seem fairly scientific and at the same time less liable to misapprehension if we use the designation "hæmorrhagic diathesis" for these cases in preference to any other.

[1] We desire to express our thanks to Dr. W. F. Hamilton of the Royal Victoria Hospital, Montreal, for the opportunity of recording this case of hæmorrhagic typhoid fever.

We in Montreal have had the unusual experience of meeting with four cases of a more or less hæmorrhagic type in a series of about 200 cases of enteric fever from the clinic of Professor James Stewart at the Royal Victoria Hospital. These were recorded by one of us (Nicholls[2]) in 1896, but at that time little attempt was made to analyse the clinical symptoms or to determine pathological conditions.

In the present communication we are enabled to report an additional most extreme example of enteric fever with the hæmorrhagic diathesis, which has been very carefully worked out and which will, we hope, help to place the subject on a more satisfactory basis.

The hæmorrhagic type of enteric fever has for years been recognised as a clinical entity and was first brought into notice by the earlier French school, notably Trousseau, who referred to it under the name of "*fièvre putride hémorragique*." Liebermeister in Von Ziemssen's Cyclopædia notes the occurrence of hæmorrhages from the nose, gums, stomach, bowels, lungs, kidneys, ecchymoses into the skin, and extravasation of blood into the various organs and serous cavities. He further remarks that hæmorrhages into the skin, true petechial vibices, are most likely to occur in patients of a hæmorrhagic diathesis, but occasionally appear in others. Murchison[3] had occasionally observed hæmorrhages into the muscles. Wilson and Loomis mention hæmorrhages from mucous surfaces and in the skin. Wood and Fitz[4] state that "hæmorrhagic typhoid fever is a very deadly complication of the disease, especially prone to occur in debilitated subjects suffering from scorbutus, alcoholism, &c. There is in it a rapid alteration of the blood with profuse hæmorrhage from the nose, mouth, intestines, and kidneys—indeed, from all the mucous membranes, the formation of abundant ecchymoses, blotches, and suggillations, &c. In these cases the adynamia is extreme from the beginning, the fever is high, the pulse very rapid and small, heart's action greatly enfeebled, tongue and mouth loaded with a brownish deposit, the breath very fœtid and even ammoniacal. Death usually occurs before the tenth day in these cases and has been recorded as early as the third."

Osler[5] says of hæmorrhagic typhoid fever: "This is excessively rare. ..... Hæmorrhages may be marked from the outset, but more commonly they develop during the course of the disease. The condition is not necessarily fatal." Hare[6] in his admirable monograph on "The Medical Complications of Typhoid Fever" states that "hæmorrhagic eruptions may occur in the course of typhoid fever, and, as a rule, they appear in the neighbourhood of the joints, when the exudation may be small or quite large."

It is somewhat singular that the cases of hæmorrhagic enteric fever published during the past four or five years have been regarded chiefly as clinical curiosities and no attempt has been made to study the condition fully or to ascertain its cause. Indeed, in most even the clinical features are very inadequately described, and in a very few where a post-mortem examination has been made the investigation has been, to say the least, very superficial. After a careful study of the recorded cases we have been obliged to conclude that they are of little scientific value and do not materially advance our knowledge of the intimate nature of this process. In the case herewith presented we have endeavoured to make a minute examination of the various organs in the hope of arriving at a more adequate conception of the processes involved. The case was as follows.

A female, unmarried, aged 21 years, a school-teacher, was admitted to the Royal Victoria Hospital under the care of Dr. W. F. Hamilton on June 19th, 1900, with headache, anorexia, and pain in the back. Her history was as follows. She was born in Canada. She had had measles eight or nine years previously, but no other illness; her habits were regular and her food and clothing were satisfactory. Her father was subject to asthma; her mother was weakly and "bothered with her kidneys"; and two sisters were dead (one from diphtheria). Careful questioning failed to elicit any evidence of hæmophilia or rheumatism. The patient first felt ill six days before admission, but kept at work for two days. The illness began with chill, pains in the back, and following this some fever. The condition persisted and gradually got worse until she applied for admission to the hospital. On admission the patient was a well-nourished girl of medium size. Her face was flushed, her eyes were dull, and her lips were dry and sore. The temperature was 100° F., the pulse was 98, and the respirations were 22; the mucous membranes were pale. The pulse was regular and of good volume; tension was slightly *plus*. The apex beat was visible in the fifth intercostal space, two and three-quarter inches from the mid-sternal line. Cardiac dulness was normal. On auscultation the first sound at the apex was rather muffled; at the base the pulmonary second sound was extremely accentuated. With regard to the respiratory system expansion was good; a few fine crackling râles could be heard over the base of the right lung posteriorly; the lungs otherwise were normal. The tongue was dry and caked; it was moist at the edges. The teeth were covered with sordes; anorexia was marked; the bowels were regular. The abdomen was slightly prominent below the level of the umbilicus. There was no rigidity; general tenderness was present. The percussion note was tympanitic throughout. The spleen was doubtfully palpable. The liver was not palpable and dulness was normal in extent. The skin was hot and dry. Numerous rose-spots were present upon the abdomen. The muscles were small and flabby. The lymphatic glands were not palpable. The intelligence and memory were good; there was no headache; the patellar reflexes were increased. Menstruation began at 14 years of age and was normal. On June 7th, 14 days from the onset of the first symptoms, a hæmorrhagic area made its appearance near the umbilicus following the application of an ice-bag. There was distinct ecchymosis of the skin of a dark purple colour which did not disappear on pressure. On the 20th the abdomen was still distended but less tender. On the 29th the patch on the abdomen was fading. During the night the patient had two intestinal hæmorrhages and multiple hæmorrhages were present over the left half of the trunk posteriorly. On the 30th, during the night, there were profuse epistaxis and hæmorrhage from the lips and gums and effusion of blood into the conjunctivæ, and during the day there was hæmaturia. A blood count gave 13,000 leucocytes. Widal's reaction was present. On July 1st subconjunctival hæmorrhages of the right eye had partially disappeared, but now there was hæmorrhage below the right lower eyelid. The urine still contained blood, but there was no vaginal bleeding. There were a few subcutaneous hæmorrhages upon the trunk. During the night there were epistaxis and hæmorrhages from the back of the throat. On the 2nd ten ounces of saline solution were injected below the mammæ. A few subcutaneous hæmorrhages appeared upon the lower limbs. The patient was much weaker. A blood count gave 1,540,000 erythrocytes and hæmoglobin 35 per cent. On the 3rd the patient did not sleep and became gradually weaker and died at 8.40 A.M. The treatment adopted was as follows. Cold baths, 18 in all, were given until the hæmorrhagic tendency developed. Spirit of turpentine and liquor calcis chloridi were given internally; applications of suprarenal powder in glycerine were made to bleeding mucous surfaces.

This case may be described as one of typhoid fever of moderate severity occurring in a young person in previously good condition. The course was typical except that the disease set in with a chill and the spleen was at no time definitely discoverable by palpation. The abdomen was not particularly distended and the bowels were regular, moving generally once daily; during the last three days of life the bowels were constipated. The highest point which the temperature reached was 104·3° on the day of admission. During the following four days the temperature kept about 103° or 102·2°, being reduced about two degrees by the tubs. During the next three days the temperature averaged about 101·2°. On June 29th, when the hæmorrhages from the bowels took place, the temperature in the course of seven hours dropped from 103° to 100·2°, but rapidly returned to 102·3°. On the 30th the incidence of the submucous hæmorrhages led to a more decided fall, the temperature coming down to 98·2°; the return was almost immediate to 101·3°. On July 1st the average was 100°, on the 2nd 99·2°, and at death on the 3rd the thermometer fell to 95·2°. The character of the temperature curve at no time suggested the idea of any septic infection, nor was it affected by the development of the hæmorrhagic diathesis in any other way than is usually seen in enteric fever where there is considerable loss of blood.

Necropsy.—A post-mortem examination was made two

[2] Hæmorrhagic Typhoid Fever, Montreal Medical Journal, June, 1896 (Bibliography).
[3] Continued Fevers, 1873, p. 609.
[4] Practice of Medicine, 1897.
[5] Practice of Medicine, 1899.
[6] Medical Complications, Accidents, and Sequelæ of Typhoid or Enteric Fever, 1899.

hours after death by Dr. W. W. Ford. The body was found to be that of a well-developed young female presenting the usual signs of death. The skin and mucous surfaces were pale. The breasts were well developed, the genitalia were normal, and the rectum was normal. In the left eye hæmorrhage had taken place into the sclerotic at the internal canthus. There was also slight hæmorrhage into the conjunctiva of the right eye in the neighbourhood of the inner canthus. The skin below both lower eyelids was discoloured. The mucous membrane of the lips showed small ecchymoses; the pharynx was apparently normal. There was subcutaneous discolouration below the right breast at the site of the saline injection. There were a few dark areas of subcutaneous hæmorrhage over the left buttock. Petechial spots were scattered rather plentifully on the skin of the trunk in front together with some irregular ecchymoses; one most striking feature was a large ecchymosis, roughly oblong in shape, about 12 centimetres across, which was situated near the umbilicus and represented the site where the ice-bag had been applied. A few petechial spots and small ecchymoses were present on the left thigh just above the knee and above the left internal malleolus. The cranium was not touched. The diaphragm reached to the height of the fifth rib in the right side and the fourth on the left. The right lung presented a few old adhesions posteriorly and to the diaphragm. The pleural surface of both lungs showed numerous punctate hæmorrhages. The right lung weighed 460 grammes. The bronchi were filled with frothy fluid; the mucous membrane was normal. The tissue on section was congested and œdematous and numerous indefinite patches of hæmorrhage, some of them of the size of small peas, were present throughout the substance. The edges of the lung were emphysematous. The left lung weighed 450 grammes. On section it was found to be congested about the posterior surface; in other respects it was similar to the right. The heart weighed 190 grammes. The right ventricle was filled with red blood-clot; all the valves were normal. The tricuspid orifice admitted the tips of two fingers. The edges of the mitral valves were a trifle thickened; the mitral orifice admitted three fingers. The left ventricle was filled with blood-clot. The heart muscle was pale and contained a few pin-point hæmorrhages. In the abdomen there was a fair amount of subcutaneous fat of a normal deep straw colour except at the umbilicus, where it was discoloured by free extravasation of blood into the tissues. On opening the abdomen the intestines were found to be slightly distended. The great omentum lay coiled up on the left side below the spleen. The peritoneum was smooth and glistening. The appendix lay on the brim of the pelvis pointing upward and inward; no fluid was found in the peritoneal cavity. The retro-peritoneal tissues over almost the whole of the lower part of the abdominal cavity were occupied by a large recent hæmorrhage which spread over the whole surface of the pelvis, over the top of the bladder to the front, and towards both sides. The spleen weighed 90 grammes; the surface was smooth and the capsule was rather wrinkled and showed a few minute subcapsular hæmorrhages. On section it was rather friable but was not congested or juicy. Except for the points noted it was practically normal and was far removed from the appearance of the ordinary typhoid spleen. There was nothing special in the stomach. In the duodenum, one inch below the pylorus, there was a minute pale scar as if from a healed peptic ulcer. The peritoneal surface of the small intestines showed numerous areas of a dark red colour. The serous coat, however, was smooth and showed no signs of exudate. At these points the intestinal walls were thickened and the patches evidently corresponded to hæmorrhages into the inflamed patches in the bowel wall. The mesentery was occupied by a large hæmorrhage which was dark red in colour. On cutting into this the blood was found to be coagulated. The lymphatic glands of the mesentery were enlarged and succulent. In the ileum the Peyer's patches were only slightly swollen, showing marked hyperplasia of the lymphoid elements. One of these patches showed hæmorrhage into its substance. In the lower part a few shallow serpiginous ulcers were present. The peritoneal surface of the rectum and the meso-rectum were occupied by a number of hæmorrhages. Numerous hæmorrhages were also present in the appendices epiploicæ of the sigmoid flexure and the rectum, dark red in colour. The mucous membrane of the large intestine was congested and catarrhal throughout. The solitary follicles were numerous and somewhat swollen. Many shallow and some deep ulcers were present in the cæcum about the ileo-cæcal valve and in the first part of the colon. The bases were somewhat indurated. The ulcerations were fairly characteristic of typhoid fever at the end of the third week, except that they appeared to be more indurated than usual. This was explained by the fact that many of these were infiltrated with dark-red blood which caused the bases and edges to appear to be thickened, somewhat masking the typical appearances. The ulcers in the neighbourhood of the ileo-cæcal valve were large and sinuous. About 30 ulcers all told were present in the intestines. The mucous membrane of the rectum was apparently normal; the rectum was filled with clotted, dark greenish, altered blood. The pancreas weighed 130 grammes. On section it was found to be of pale colour and well lobulated. A few minute hæmorrhages were present upon the surface. The lymphatic glands in the neighbourhood were large and succulent. The liver weighed 1225 grammes. Its serous surface was smooth; on section it was markedly pale with cloudy swelling. No fæcal necroses were seen. No hæmorrhages were present. The gall-bladder was filled with dark-coloured bile. The wall, where the organ was attached to the liver, was infiltrated with blood. The left kidney weighed 140 grammes. Its capsule peeled off with ease. Many small pin-point hæmorrhages of a dark reddish-brown colour were noticed on the cortex. The surface was congested. On section the organ was very much congested, the glomeruli showing as reddish points. Numerous hæmorrhages were seen in the Bowman's capsules and along the course of the interlobular and straight vessels. The cortex measured 18 millimetres in thickness. The kidney was fairly firm and was of a dark greyish-brown colour. The right kidney weighed 120 grammes; in all respects it was similar to the left. The mucous membrane of the bladder was pale and showed above a few submucous hæmorrhages. The bladder was filled with clotted blood and there was a very large submucous extravasation of blood in the lower two-thirds of the organ posteriorly, from which the oozing apparently had taken place. The uterus was small; the external os contained blood-stained mucus. The vagina contained no blood. The ovaries were small; the left contained a few clear cysts of small size; there were no hæmorrhages. The Fallopian tubes were normal.

Microscopical examination. — Stained with Ehrlich's hæmatoxylin the fibres of the heart muscle were somewhat thin and wavy. The staining of the nuclei was faint and the transverse striation was indistinct. The longitudinal fibrillation was well marked. Beyond some cloudiness there was no special change. In sections stained by the carbol-thionin and Gram-Weigert methods no bacteria were seen. Hæmatoxylin preparations of the lung showed small irregular hæmorrhagic patches here and there throughout the tissue. These were somewhat poorly defined at the margins, passing off gradually into the more healthy condition. The alveolar walls throughout were on the whole rather thin and those within the infarcted areas were much compressed. The walls everywhere stained fairly well. The interstitial tissue showed slight anthracosis. Small areas of collapse were noted in many portions. There was distinct catarrh of the lining endothelium of the alveolar processes, many of the alveoli being filled with, in addition to a few red cells, large mononuclear cells containing granules of pigment and débris. The débris in part consisted of broken-down erythrocytes. No emboli were seen.

Portions of the tissue were stained with osmic acid (Fleming's solution) and Sudan III. for fat. The osmic preparations were the less satisfactory since it was hard to distinguish fatty particles from pigment granules. The Sudan preparations, however, showed very well in places moderate fatty degeneration of the endothelium covering the alveolar walls. Sudan III. possesses the property of staining fat-droplets a golden yellow or carmine colour, according to the size of the droplet. In some places the alveolar walls were distinctly picked out by the stain, showing as a pinkish network. With a high power this was seen to be due to minute particles of fatty matter dotted throughout the endothelial plates. Certain of the desquamated mononuclear cells within the alveoli were loaded with fatty matter. Many others, and some also of the lining cells of the walls, contained pigment of a brownish colour, which was not fat but was apparently derived from the broken-down red cells. By the Gram-Weigert stain no bacteria were noted. By carbol-thionin certain of the bronchi were seen to be plugged

with exudate, the lining columnar epithelium being desquamated and in part degenerated. The exudate consisted in large part of oval or spindle-shaped mononuclear cells together with crowds of bacteria consisting of coccus forms and medium-sized bacilli having rounded ends. These bacilli varied much in length, some being very short, some were slightly curved, and others were bulbous at the ends. Most showed bipolar staining. Similar bacilli were present in great numbers in the collapsed areas. One small bronchiole was found to contain blood, an infarct having presumably burst into it.

Spleen: the staining agent used was hæmatoxylin. It was not congested and was without any special abnormality except some hyperplasia of the so-called epitheloid plates. The tissue was not œdematous and there was no perisplenitis. By the Gram-Weigert and carbol-thionin methods no bacteria were seen. Liver: the staining agent used was hæmatoxylin. The tissue stained fairly well and the nuclei were distinct. The cells were swollen and cloudy. No particular fatty change was observed and there were no hæmorrhages. Everywhere could be seen in the intercellular spaces within the lobules little scattered groups of two or three polynuclear cells. In the portal sheaths, by the carbol-thionin method, a small amount of acute interstitial infiltration could be made out chiefly along the course of the portal vein. These aggregations were not at all striking, however. In one or two sections also a few small lymphomatous masses could be observed consisting of small round mononuclear cells, with a few larger mononuclear hyaline cells resembling macrophages. No true focal necroses were noted. No bacteria were observed. By the Gram-Weigert method no bacteria were noted. Pancreas: hæmatoxylin was the staining agent used. Except that the tissue stained rather faintly there was nothing specially worthy of note. Kidney: hæmatoxylin was the staining agent used. Numerous areas of hæmorrhage were present both in the cortical portions and in the medulla. This hæmorrhage was marked in the interstitial substance in various places but was very strikingly shown in those parts where the blood had forced its way into the kidney-tubules, many of which were greatly distended with blood. In the cortical portion the hæmorrhages appeared to be most marked in the neighbourhood of the interlobular vessels running vertically forwards to the cortex. In one section a Bowman's capsule contained much blood and the glomerulus was distinctly compressed. The tubules, mainly the tubuli contorti, which contained the blood, were over-distended and the lining secretory cells were greatly flattened. In the medullary portion the straight and collecting tubules contained blood. Everywhere the extravasation was of recent appearance. Small, more wedge-shaped, masses were common just beneath the capsule. The glomerular tufts were not congested but the lining endothelial cells of the Bowman's capsules were swollen and occasionally desquamated. In a few capsules small masses of albumin could be made out. In the remaining parts the lining cells of the secreting tubules were swollen and granular-looking and the staining was defective. In the medulla and in one specimen surrounding a glomerulus and capsule near the cortex there was fairly extensive round-celled infiltration consisting of inflammatory leucocytes. The surrounding congestion was not great, however. The endothelium of the affected capsule was notably catarrhal. One of these infiltrated areas was large enough to suggest an abscess. A few small areas of round-celled infiltration were seen in some sections consisting of mononuclear elements and no doubt to be regarded as the so-called "lymphomata" of Wagner. The osmic acid and Sudan III. preparations showed practically the same features. There was a moderate degree of fatty degeneration affecting in some instances the basement membranes of the Bowman's capsules and very generally the secreting cells of the contorted tubules and the descending loops. Those tubules which contained blood showed this in a very extreme degree. The capillaries of the tufts were, as a rule, free, though certain of them showed slight fatty change. The sections stained by carbol-thionin showed that in the small inflammatory areas there were to be seen short, fine bacilli with rounded ends and with well-marked bipolar staining. By the Gram-Weigert method no bacteria were observed. The small intestine showed by the hæmatoxylin method marked catarrh of the mucosa, with some mucoid and cellular exudate upon the surface. The lining epithelium was swollen and the cells were active. The mucosa showed a moderate round-celled infiltration. On the submucosa the lymphoid follicles were swollen and proliferated, the epithelioid plates being specially numerous. The acute inflammatory infiltration extended through the muscular wall, round cells in considerable numbers being found between the various layers of muscle. The serosa was free. Small hæmorrhages were present in the submucosa and muscularis. The carbol-thionin method showed a few short bacilli with rounded ends and of moderate size imbedded in the mucus on the surface. None were seen in the deeper layers. By the Gram-Weigert method no bacteria were seen. The blood-vessels were examined very carefully in the lung, liver, and kidney with the view of ascertaining if any clots were present. The most that could be said was that in these different organs the blood in both arteries and veins showed a tendency to break down, the red cells being apparently converted into a fine granular material of pale brownish colour in which a few leucocytes were imbedded. Besides these there were certain large clear mononucleated cells which appeared to be swollen and desquamated endothelial cells. These endothelial cells of the small vessels and capillaries were everywhere more prominent than usual, a condition which has been described by F. B. Mallory[7] as a constant feature in typhoid fever, but found also in diphtheria and some other infectious fevers. Nowhere were definite fibrinous clots of emboli observed. The condition of alteration of the blood is one that we would lay no particular stress upon, for it is one which we have often seen in other cases, particularly in specimens which have been kept for some time in methylated spirit. Nowhere were bacterial emboli, acute arteritis, or phlebitis discovered. The arterioles and the larger vessels showed no histological peculiarities.

Bacteriological examination.—Unfortunately, through an oversight, cultures were not taken from the spleen or mesenteric glands. Agar cultures were made from the heart-blood, peritoneal cavity, and the kidneys. Small round pearly-white growths were developed in the peritoneal fluid. These were elevated and discrete; they proved to be cocci staining by Gram's method. They grew readily on all media, liquefied gelatin, coagulated milk, and produced acid. They were regarded as the staphylococcus pyogenes albus. From the heart-blood two varieties were isolated: the first was a thick, elevated, soft, moist growth of a whitish colour and the second was a thinner, more pearly growth, in the shape of more star-like colonies. These were isolated. The first variety were cocci, positive to Gram's method, giving all the cultural peculiarities of the staphylococcus pyogenes albus, and were identical with those found in the peritoneal fluid. The pure growth of the second variety showed a variety of forms, short fine bacilli with bipolar staining, pairs of oval short bacteria, cocci or single short ovoids. Some bacilli present were thicker than the others and somewhat swollen at the ends, apparently involution forms; when of full size the bacilli had rounded ends and were about four times as long as broad. No spores were seen. All were non-motile. These turned litmus milk red and coagulated it, although it took some time to do this. The coagulum was at first in the form of small flakes. It did not liquefy gelatin and did not produce gas in glucose broth. Inoculated into rabbits it proved to be non-pathogenic. Three forms were isolated from the kidney. The first conformed in morphology and cultural peculiarities to the staphylococcus albus. The second presented a variety of forms, short ovoids or cocci, bacillary forms about three times as long as broad with bipolar staining. They were non-motile and without spores; they did not liquefy gelatin and did not produce gas. Litmus milk was unchanged. They were non-pathogenic for rabbits. The third variety was a rather small delicate bacillus producing a greenish fluorescence. The chloroform test did not show any true pigment production. The bacillus was motile; it liquefied gelatin; it did not produce gas or acid and did not coagulate milk. Its reaction to the Gram method was uncertain. A rabbit inoculated through the auricular vein died six weeks later from purulent peritonitis. The original germ was not recovered, however, and the lesions found did not suggest the presence of the bacillus pyocyaneus. The rabbit probably died from some intercurrent infection, the bacillus coli being found in the various organs. The bacillus was finally regarded as the bacillus fluorescens liquefaciens.

The anatomical diagnosis was typhoid fever; typhoidal

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ulceration of the small, but principally of the large, intestine; general hæmorrhagic diathesis; mixed infection; multiple hæmorrhages from the mouth and nose, the bowels and into the skin, lungs, heart, spleen, kidney, intestines, bladder, gall-bladder, and connective tissues; small spleen; cloudy organs; acute diffuse nephritis; fatty degeneration of the capillaries of the lungs and kidneys; healed old duodenal ulcer; and right old pleural adhesions.

A careful scrutiny of this case shows that it was enteric fever, atypical in the particulars that the intestinal lesions were most marked in the large bowel, that the spleen was small, that there was a general hæmorrhagic diathesis, and that there was a mixed infection with the staphylococcus albus.

We do not think that the fact that the bacillus typhi was not found in the cultures invalidates the conclusion that the case was one of enteric fever, for the intestinal ulcers were characteristic for the age of the condition and the Widal reaction was positive, both facts together being practically conclusive. Owing to an oversight cultures were not taken from the spleen and mesenteric glands, and even if the bacillus typhi had originally been present in the kidney in such a situation it would be apt to be attenuated and would be the more easily overgrown by other forms of germ life. Further, it is notoriously difficult to obtain the bacillus typhi from the blood, so that a negative result in these particulars would have no special importance. Throughout the various organs there were the marked swelling and proliferation of the endothelial cells to which Mallory has directed attention. Altogether the facts above-mentioned, together with the histological appearances of the various tissues, are to our minds conclusive.

With regard to the cause of the extensive hæmorrhages we must conclude that one main factor was the fatty degeneration of the basement membranes of the capillaries and the various endothelial cells which was so noticeable in the case of the lungs and kidneys. It is, of course, possible to say that these changes in the kidneys were due to the acute diffuse nephritis which was undoubtedly present, but it is to be pointed out that the same condition was observed in the lungs where a true inflammation of the parenchyma certainly did not exist. The fact that in the alveoli of the lung in parts where there was no infarction the endothelial cells were desquamated in large numbers and very fatty goes to show very strongly that the condition was a primary one. No doubt, however, as the specimens of kidney clearly show, the fatty degeneration of the cells was most marked when there were extravasation of blood and pressure upon the cells, so that it is probable a vicious cycle existed as well. The slight alteration found in the blood within certain vessels, if not, indeed, an artefact, was certainly not sufficient to cause any blocking of the lumina. No thrombi, no emboli, bacterial or otherwise, were found nor was there arteritis or phlebitis. Further, there was at no time marked dilatation or insufficiency of the heart as in another of our Montreal cases.

As will be seen shortly, the development of hæmorrhagic manifestations in infectious and other diseases has been, upon histological and experimental grounds, attributed to a variety of factors. Many have sought for the cause in some local disturbance of the blood current, such as would be produced by acute arteritis and phlebitis, thrombosis, or bacterial emboli. In our case we have been unable to discover any conditions of this nature and can only conclude that in so far as any local cause was operative it is to be found in the fatty degeneration of the various endothelia and basement membranes. In what way this fatty degeneration leads to the condition of blood extravasation we do not feel able to say. There would certainly be weakening of the capillary walls, but our studies do not settle whether the hæmorrhages were per rhexin or per diapedesin. Great numbers of sections were examined, but in none could we find actual rupture of the capillaries.

With regard to the ultimate cause of the fatty degeneration, since we are able to exclude any inherited defect, such as hæmophilia or hypoplasia of the vascular system, and can further exclude any pre-existing state of malnutrition, scurvy, rheumatism, alcoholism, and cachexia, we can only refer it, not to any local action of bacteria, but to a condition of systemic intoxication and septicæmia. What particular germs were concerned in this it is difficult to say. The pathological investigation shows clearly that we were dealing with a case of mixed, or at least secondary, infection with the staphylococcus albus, and the history excludes the possibility of primary typhoidal purpura. No doubt all the micro-organisms present played a part in bringing about the degenerative changes, so that we are safe in referring these to the intensity and to the quality of the intoxication, which practically means to qualitative changes in the blood.

With regard to the frequency of the general hæmorrhagic diathesis in typhoid fever, all are agreed that it is very rare, although a petechial eruption, which is probably merely a mild type of the complication, is not so infrequently met with. Below we have tabulated all the large series of enteric fever cases which we have been able to find recorded.

Authors.	Clinic.	Total cases of typhoid fever.	General hæmorrhagic diathesis.	Purpuric eruptions.	Hæmaturia alone.
Ouskow[8]	—	6,513	4	—	—
Berg[9]	Leipsic.	1,626	6	0	53
Liebermeister[10]	Basle.	1,900	3	9	—
Weil[11]	Leipsic.	105	1	—	—
J. C. Wilson[12] ...	German Hospital, Philadelphia.	147	0	0	37
Bosanquet[13] ...	Charing Cross.	215	0	2	—
J. M. Anders[14]	Med. Chir. Hospital, Philadelphia.	266	0	2	—
Osler[15]	Johns Hopkins Hospital, Baltimore.	685	1	—	—
Authors	Royal Victoria Hospital, Montreal.	543	3	2	—
Totals	—	12,000	18	?	?

Of course, fairly numerous cases are met with in the literature in addition to the above, but they could not be included in the table since they did not form part of any extended series of observations. Examples, for instance, have been recorded by Trousseau,[16] Barlow,[17] Gerhardt,[18] Wagner,[19] Hawkins,[20] Hughes and Lévy,[21] Adami,[22] Nicholls,[23] Gilman Thompson,[24] and Hamburger.[25] It is possible that some of the cases are not examples of the condition under discussion, as many either occurred before the day of the Widal test or were not controlled by post-mortem examination. The following remarks are based upon a careful study of the recorded cases, any doubtful ones being neglected.

Etiology of the hæmorrhagic tendency.—Comparatively little is known as yet as to the causative factors in the condition. The few authors who have dealt with the subject confine themselves to general statements, nor do the various opinions expressed altogether coincide. A study of the cases recorded, however, goes to show that some of the etiological factors, so-called, have really little weight. A pre-existing scorbutic, hæmophilic, or rheumatic taint does not seem to have been noted. Alcoholism, on which Fereol and Roger[26] and Curschmann[27] laid stress, cannot be of

[8] Archives des Sciences Biologiques, St. Petersburg, ii., No. 1, 1893.
[9] Deutsches Archiv, Band liv., S. 161, 1895.
[10] Ziemssen, Handbuch, 1876, Band ii., S. 198; ref. in Curschmann. Der Unterleibstyphus, 1898, Wien, S. 297.
[11] Ibid. (ref.).
[12] Typhoid Fever Report, Philadelphia Medical Journal, Feb. 25th 1899.
[13] Notes on 215 Cases of Typhoid Fever, Brit. Med. Jour., July 8th 1899.
[14] Philadelphia Medical Journal, Feb. 25th, 1899, p. 416.
[15] Johns Hopkins Hospital Reports, Studies in Typhoid Fever, vol. viii., 1900.
[16] Clinique Médicale, tome i., 1865.
[17] THE LANCET, April 26th, 1884, p. 745.
[18] Zeitschrift für Klinische Medicin, Band x., S. 201.
[19] Deutsches Archiv für Klinische Medicin, Band xxxvii.; ibid., Band xxxii., S. 298.
[20] Transactions of the Clinical Society, vol. xxvi., 1892, pp. 50, 51.
[21] Archives de Médecine et de Pharmacie Militaires, August, 1892.
[22] Montreal Medical Journal, 1894, p. 691.
[23] Loc. cit.
[24] Unusual Complications of Enteric Fever, Medical and Surgery Reports of the Presbyterian Hospital, New York, 1898.
[25] Johns Hopkins Reports: Studies in Typhoid Fever, vol. viii., 1900.
[26] Ref. in Brouardel et Thoinot, La Fièvre Typhoïde, 1895.
[27] Der Unterleibstyphus, Nothnagel's Specielle Pathologie und Therapie, Band iii., No. 1, 1898.

much importance. It was not present in any of Wagner's or our cases, though present in Gilman Thompson's and two of Curschmann's cases.

Others, like Gerhardt[28] and Griesinger,[29] regard defective nutrition due to scurvy, overcrowding, and scanty food as powerful contributory causes. The state of the previous nutrition, however, which on *a priori* grounds would seem to be an important consideration, does not appear to be a factor in all cases. Most of the cases recorded were in a previously healthy condition and some were of unusually good physique.

One of Wagner's cases was scrofulous in childhood and one of the Royal Victoria Hospital patients was puny as a child. A case under the care of Gerhardt had gone through an attack of measles three weeks before and the patient in Adami's case had had pneumonia and empyema. How far these factors were concerned in the subsequent development of the hæmorrhagic tendency is very problematical.

In this connexion the views of Gerhardt are of some interest. He thinks that the hæmorrhagic tendency has been more frequently observed since the introduction of the cold-bath treatment, and thinks further that a too rigid restriction of the patient to an animal diet is an important cause as tending to induce a scorbutic condition.

Leudet[30] in an epidemic which occurred at Rouen in 1869–70 lays stress upon a certain "epidemic influence," whatever that may mean.

Wagner has recorded a curious instance where a family idiosyncrasy seemed to play a part. Of five children in one family suffering at the same time from typhoid fever three developed a more or less pronounced hæmorrhagic tendency. That this was not due to poverty and malnutrition was shown by the fact that one of the sisters so affected was not living at home and was well nourished.

Wagner, Gerhardt, and Curschmann agree that the condition is commonest in childhood and early adult life. Of the cases recorded one patient was eight years and another was 16 years old. The vast majority were considerably under 25 years of age; the oldest was 32 years of age. The age average was 21·4 years. With regard to sex there seems to be an equal liability of males and females to the complication.

The type of the original typhoidal disease seems to be of some importance. The vast majority of cases are found in those suffering from typhoid fever of a severe form. The patients are much prostrated, the temperature is high, the heart's action is weak and rapid, and there may be coma or delirium. The mouth is usually very foul and the excretions may have an ammoniacal odour. In certain rare cases, as Curschmann points out, the hæmorrhagic diathesis may be one form of the "foudroyante" typhoid fever. One of our Montreal cases was, on the contrary, comparatively mild.

The character of the onset of the original typhoidal attack does not give any clue to the development of the hæmorrhagic complication. More than half the cases occurred in the ordinary gastro-intestinal type of the disease. In certain cases severe pains in the legs, rhachialgia, and cutaneous paræsthesiæ have been noted.

PATHOLOGY.

With the exception of the changes due to the special complication the necropsies show that the anatomical lesions differ very little from the ordinary typhoid. The anæmia is usually marked, as would be expected. Of 11 necropsies of which we have notes the typhoid ulcers were in two cases mainly confined to the large intestine, the ileum showing only very moderate involvement of the Peyer's patches. In Trousseau's case, where death occurred on the eleventh day, the Peyer's patches were softened but not ulcerated. In one of Wagner's, where death occurred on the thirty-ninth day, the ulcers showed signs of healing. In our own case the only feature of note about the ulcers was the extensive hæmorrhages into their bases and margins, giving them a much more red and swollen appearance than usual.

The spleen is, as a rule, found enlarged. The hæmorrhagic patches in the skin may be infected and break down, forming gangrenous ulcers.

Coming to the hæmorrhagic manifestations there is considerable diversity in their character and distribution. Hæmorrhage into a muscle, perhaps one of the slightest forms of the complication, is not very uncommon even in ordinary typhoid fever, but may be part of the general hæmorrhagic tendency. It is supposed to be due to a vitreous degeneration (von Zenker) of the muscle. The hæmorrhages may be minute, petechial, ecchymotic, or may form tremendous extravasations into all the loose tissues. Petechiæ may be present on the skin and all the mucous and serous surfaces. Parenchymatous hæmorrhages occur in the various organs. In fact, no organ or tissue of the body is necessarily exempt. Nor are the external manifestations of the condition a true index to the extent of the internal lesions, for, as Hamburger[31] points out, the most extensive involvement of the internal parts may be present when but little suspected.

The recorded necropsies show that the skin, subcutaneous tissues, and the various mucous membranes are by far the most frequently involved; next to them the lungs, spleen, and urinary organs. Infarcts have been found in the lungs, spleen, and kidneys, and thrombi in the renal and femoral veins, the chambers of the heart, the pulmonary artery, and the cerebral arteries. Curschmann says that embolism of arteries is very rare, but when found is usually in the kidneys and spleen. In certain cases the clotting of the blood has been undoubtedly ante-mortem.

With regard to the ultimate cause of the hæmorrhagic tendency but little is known; no cases have up to the present been studied with sufficient detail finally to settle the question, but, as already hinted, various theories have been propounded. Curschmann says: "We are uncertain what is the exact nature and mode of origin of hæmorrhagic typhoid, whether it is to be looked for in a certain peculiarity or activity of the typhoid germ or in some complication or state of the body."

The older writers supposed that there was some special change in the blood, a *dissolutio sanguinis;* but while this view has been ridiculed in certain quarters very little better has been proposed for it. Trousseau noted that the blood in "putrid hæmorrhagic fever," as in yellow fever, was of a dark colour and was deficient in coagulating power. This theory is interesting in connexion with Osler's case where the coagulation time of the blood was 10 minutes, sinking to four minutes during convalescence. No doubt this change in the blood is due to the character of the bacterial toxins present, for we know that in diseases like croupous pneumonia and acute rheumatism the coagulating power of the blood is increased. This seems to depend in part upon the number of the leucocytes present in the blood, for they are very abundant in pneumonia and rheumatism. Leucopenia, on the contrary, is the rule in ordinary uncomplicated typhoid fever. We would expect *a priori* that in typhoid fever during the acme the coagulating power of the blood would be diminished. The thrombosis of the crural vein which not infrequently is met with in typhoid fever is never seen during the height of the disease but invariably in the stage of profound asthenia and anæmia, when arterial relaxation and weak driving power of the heart are the rule. An interesting confirmation of this view is seen in a recent case of hæmorrhagic typhoid fever recorded by T. V. Openchowski[32] where the bleeding from the mucous membranes was very obstinate, not yielding to the usual remedies. Suddenly the blood began to clot and the hæmorrhage ceased. The next day signs of croupous pneumonia became manifest. On the contrary, in a case examined by Curschmann, no special external or histological peculiarity of the blood was observed. Further, neither hæmoglobinuria nor hæmoglobinæmia have been noted in these cases.

Any vitiated state of the blood must necessarily react upon the vessels and, arguing from what has been found in symptomatic purpura of other types, would afford a probable clue to the mystery.

Uskow[33] demonstrated swelling of the lining epithelia of the vessels in the gums and periosteum in cases of scurvy, and von Kögerer[34] has observed thrombosis of the vessels in the neighbourhood of the subcutaneous hæmorrhages in both scurvy and morbus maculosus Werlhofii.

Letzerich[35] in a case of purpura isolated a bacillus which when injected into rabbits produced widening of the capillaries with hæmorrhagic injection of the gums. Bacilli were present in the capillaries. The hæmorrhages were said to be due to hyaline plugs which were present at the bifurcation of the vessels. It should be remarked, however, that the presence of thrombi in the various vessels must be interpreted with caution. It is very possible that these

[28] Loc. cit.
Virchow's Handbuch der Infektionskrankheiten, Band ii., S. 217.
[30] Clinique Médicale de l'Hôtel Dieu de Rouen, 1874.

[31] Loc. cit
[32] Klinische Therapeutische Wochenschrift, Jan. 2nd, 1898.
[33] Centralblatt für die Medicinischen Wissenschaften, S. 498, 1878.
[34] Zur Enstehung der Hauthämorrhagien, Zeitschrift für Klinische Medicin, Band x., S. 234, 1886.
[35] Ueber Purpura Hæmorrhagica, Leipsic, 1889 (Vogel).

thrombi are due to the weak circulation and the relaxed and degenerated condition of the vessels which are present at the time of impending death. They are to be regarded as associated conditions rather than the true cause of the hæmorrhagic tendency.

In one case of purpura occurring in the course of acute endocarditis which we examined recently the subcutaneous tissues were found to contain large numbers of a rather slender bacillus in pure culture and both arteries and veins showed considerable acute inflammation of their walls with some surrounding leucocytic inflammation.

In sepsis and variola hæmorrhagica bacterial emboli have been found in the capillaries and give rise occasionally to ring-like hæmorrhages, particularly about the hair follicles.

According to Litten [36] these are not present in hæmorrhagic typhoid fever and this observation is confirmed by von Recklinghausen [37] and Meyer and by our own studies. It is probable that a variety of factors enter into the causation, a deficiency in the fibrinogen of the blood, together with relaxation and fatty degeneration of the vessel-walls. No doubt a feeble circulation may be an important element as in our first Montreal case, where the heart was much dilated and its action very rapid, together with cyanosis and coldness of the extremities. These conditions would certainly promote clotting of the blood and since old decolourised thrombi have been found post mortem the possibility of such an occurrence during life cannot be denied.

Numerous attempts have been made to connect purpura hæmorrhagica with bacterial activity. Klebs, Ceci, Jones, Tizzoni, Petrone, Babes and Letzerich, Hanot and Luzet, Widal and Therèse found streptococci; Lebreton and Litten found staphylococci in their cases. Hamilton and Yates [38] in a well-marked case isolated the staphylococcus aureus, the bacillus aerogenes capsulatus, and an unknown bacillus. Kenneth Cameron [39] has also noted a hæmorrhagic tendency in general infection in children with the bacillus pyocyaneus. It seems to us that this attempt to connect the hæmorrhage with the action of those micro-organisms found post mortem is open to fallacy.

Patients who are bleeding into the skin and mucous membranes are in the best of all conditions for bacterial invasion, and, in fact, we see this in those cases which develop abscesses or gangrene in various parts, as they often do. These cases no doubt die, not merely from the exhaustion of anæmia, but from septicæmia. When germs are found in the various organs post mortem under such conditions it is impossible to deny that they may be a result rather than the cause of the hæmorrhagic condition. Still, we know that in some cases bacterial emboli have been found in the vessels strongly suggesting a causal relationship, and to a certain extent the condition can be reproduced in experimental animals. Further, the absence of hæmophilia or other blood dyscrasia points strongly to the action of a bacterial cause. While, then, the bacterial origin of the hæmorrhagic condition is extremely probable the final proof is still wanting.

ONSET AND CHARACTER OF SYMPTOMS.

Analysis of the cases recorded shows that the hæmorrhagic tendency may occur at any time during the course of the primary attack. During the first week the condition is rare. In two cases recorded by Roger the hæmorrhage began on the third and fourth days and in one by Ferreol on the fifth. Such are undoubtedly cases of primary typhoidal purpura and strictly comparable to purpura variolosa and scarlatinosa. Griesinger remarks: "In all forms of typhoid, exactly as in small-pox, cases occur where very early, in the first week or later, abundant petechiæ and suggillations into the skin, sometimes into the muscles, set in; intractable nose-bleeding, ecchymoses, and bloody extravasations into the serous sacs, infarct of the lungs, bloody urine, intestinal hæmorrhages, meningeal and brain apoplexy, hæmorrhage into the connective tissue of the iliac fossa and formation of tumours." Cases are slightly more frequent in the second week and most common in the third week. The condition may occur during a relapse, as in Osler's case, or later in a protracted course, as in one of ours where it developed on the fortieth day.

[36] Die Hämorrhagischen Diathesen. Nothnagel's Specielle Pathologie und Therapie, Band viii., Thiel iii., 1898.
[37] Handbuch der allgemeinen Pathologie der Kreislauf und der Ernährung, S. 87, 1883.
[38] Montreal Medical Journal, August, 1897.
[39] Ibid., March, 1896.

The fact that most cases occur during the third week when the sloughs are separating from the ulcers is an argument in favour of the view that some at least of the cases are due to secondary infection. The recorded cases fall naturally into three groups: (1) primary typhoidal purpura; (2) purpura due to secondary bacterial invasion; and (3) cachectic purpura, occurring later in the disease or during convalescence. It is questionable, however, whether the third class is to be properly separated from the infective category.

The onset of the symptoms varies considerably. Sometimes, though rarely, epistaxis, melæna, or hæmaturia is the first symptom; generally, however, the first signs are in the buccal mucous membrane or in the skin. The hæmorrhages are generally multiple in distribution, petechiæ, bleeding from the mucosæ, hæmaturia, and epistaxis frequently going together. Hæmoptysis is met with and is due to oozing from the bronchi or to infarction.

The skin lesions consist of petechiæ or ecchymoses, the latter being sometimes of large size. If rose spots are present the eruption may take place into or between them. The petechiæ do not disappear on pressure. Sometimes hæmorrhagic pustules are present. Small bluish, elevated subcutaneous nodules are occasionally met with. In some cases a sort of diffuse subcuticular purplish mottling has been observed. The skin hæmorrhages have been known to occur into a bed-sore or on the application of cold. Gangrene may supervene and œdema.

No special symptoms seem to usher in the hæmorrhagic condition. Neither chills, sweating, nor a septic temperature seem to have been noted. Marked distension of the abdomen is not uncommon and diarrhœa is fairly frequent at the onset. The effect on the temperature is usually very slight, though in severe cases a gradual fall to subnormal has been noted, as in other cases of hæmorrhage. Profound anæmia usually develops. The hæmorrhage is not sudden, but rather a gentle oozing from all the surfaces of the body, and is apt to be precipitated by any slight injury.

PROGNOSIS.

The condition is generally very grave. About two-thirds of the cases recorded ended fatally. The previous history of the patient has some weight. As a rule the earlier the condition sets in and the more extensive it is the more serious is the prognosis.

TREATMENT.

Treatment is purely symptomatic. Gerhardt, in accordance with his views as to the etiology, discontinues the cold-bath treatment and substitutes a daily warm bath at a temperature of from 33° to 34° C. He includes potato, spinach, and vegetable juices in the diet. To control the hæmorrhage many plans have been tried. On the assumption that the cause is a secondary infection small doses of calomel or other mercurial have been given. One of our Montreal cases recovered under this treatment, as did one which was left alone. Turpentine and ergot were used by Gilman Thompson in his case which recovered.

Attempts have been made to increase the coagulability of the blood by means of calcium chloride as suggested by Wright.[40] In severe cases 15 grains should be given twice daily. This treatment has to be carefully controlled by repeated blood examinations, as if it is too vigorously pressed it may have the contrary effect to that intended. The same writer also advocates inhalation of carbonic dioxide. The effect of this was *nil* in Osler's case. Local applications of gelatin solution, tannic acid, or suprarenal extract may be tried. It is, however, very uncertain how far any of these remedies are efficacious.

From a study of hæmorrhagic typhoid fever and its relationships to purpuric conditions in general some suggestive ideas may be derived. On the whole it seems best to regard "purpura hæmorrhagica" not as a distinct disease entity but as merely a train of symptoms. Litten would restrict the term to the so-called "idiopathic purpuras," Werlhoff's disease, Schönlein's disease, purpura simplex, &c., and would deny it to that form met with in variola, typhoid fever, pernicious anæmia, leukæmia, sepsis, snake-bite, and some others. This, however, seems to be too narrow a view. The trend of modern pathological research, far from accentuating the divisions of the earlier clinicians, tends to show that the processes at work in all these different

[40] Brit. Med. Jour., Dec. 19th, 1891; vol. ii., 1893, p. 223; and vol. i., p. 237, and vol. ii., 1894, p. 57.

conditions are capable of unification. Most cases come under the head of "infections."

In the light of our present knowledge it would be better to speak (1) of an "essential" purpura hæmorrhagica, including under this term morbus maculosus, morbus Werlhofii, purpura simplex, peliosis rheumatica, and purpura urticans. Whether scurvy (purpura scorbutica) should be included in this class is perhaps doubtful, since "essential" purpura is a sporadic disease, while scurvy is apt to be epidemic and endemic. Some observers, however, would place scurvy with the others in the "infective" category. Babes particularly has described a bacillus which he thinks is the cause, but other observers have obtained negative results. Hæmophilia certainly should not be included in the first group, since it is characterised by family and hereditary peculiarities. It might be termed a "normal" condition for certain individuals and is not to be regarded as a true pathological state, since it is a permanent and not an incidental or transient condition. The second group might be termed (2) "symptomatic purpura" and would include all those cases which are met with in the course of the infective fevers, such as typhoid fever, variola, measles, scarlet fever, pest, yellow fever, sepsis, acute yellow atrophy, icterus gravis, &c. A third group might be termed (3) "cachectic," including forms found in pernicious anæmia, leukæmia, carcinoma, Bright's disease, &c. A fourth group is (4) the toxic purpuras, such as are met with in certain forms of poisoning, snake-bite, phosphorus, copaiba, antipyrin, &c. A fifth form is that found in (5) disseminated sarcomatosis, to which attention has been called by Martin and Hamilton,[41] where in one case which they studied there was actual sarcomatous invasion of the internal coat of the vessels and in another emboli of sarcoma cells. Whether these were the only factors or not seemed to be doubtful. The first two groups, and possibly the third, would fall under the head of "infectious" purpura.

THE TREATMENT OF TYPHOID FEVER.[1]

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TYPHOID fever is a disease the ultimate etiology and pathology of which seem to be now pretty well worked out and understood, and the life-history of the bacillus typhosus, outside the human body, is rapidly becoming a commonplace of medical science; but I venture to think there is still plenty of room for discussion upon the best clinical treatment of the disease. I have for many years held an opinion that the lines laid down for our guidance in the matter have been laid down too strictly on the assumption that the intestinal lesion is the point to which our therapeutical measures must be mainly directed. That the intestine, or mouth at least, is probably in all cases the portal of entrance of the bacillus and that the intestinal lesions have very serious dangers of their own it would be idle for me to deny; but this paper is an offer to break an argumentative lance with those who hold that these dangers are entirely, or even in the main, due to departures from the routine milk treatment of our text-books of medicine. My statements are based upon my own experience of the disease both in hospital and in private practice and they are intended to have a practical value and bearing as well as to serve as a peg whereon to hang a discussion. I shall therefore consider the subject from the commencement of the illness and will strike at once the keynote of my ideas and contention, which is to object to the customary orthodox proverb that runs thus: "If the disease were only diagnosed early enough and appropriate treatment adopted many lives would be saved and much suffering avoided." The statement has a certain amount of truth in it, but it contains a great exaggeration and covertly throws on the profession as a body an undeserved amount of blame and obloquy, for the unspoken accusation is that any medical man ought to be able to diagnose typhoid fever at a glance and having recognised it that he ought at once to treat it on routine lines. With the first of these propositions I have, of course, nothing to do, though its absurdity is known to us all; it is with the second that my whole paper will deal.

An attack on the human frame by the bacillus typhosus goes through the usual stage of incubation followed by that of invasion, and most cases come under observation when the former is merging into the latter. The symptoms present are commonly headache of more or less severity, a general feeling of seediness and lassitude, a dirty tongue, and an upset of appetite and of bowel action, all probably coupled with some degree of pyrexia. Now such symptoms, and especially their ingravescent persistence, are in themselves absolutely pathognomonic of the necessary treatment—viz., bed. This is the only place where a patient presenting these symptoms ought to be, and provided we have insisted with sufficient authority on this one item of advice we have for the moment done all in our power to mitigate the severity of the attack which may be coming on. Whether the patient follows our advice and goes to bed or not, we usually consider that he will be the better for having the primæ viæ cleared out, and accordingly few of us resist the temptation to treat such a patient, probably with a blue pill, and certainly with a saline aperient. Now I hold very strongly that such a treatment cannot possibly have any ill effect if too violent a purgative, such as croton oil or elaterium, be avoided, even should the case ultimately prove to be one of typhoid fever. Again, if, on the one hand, the patient feels so ill that he follows our advice and goes to bed he will as a matter of routine be put upon bed diet—viz., milk or bread-and-milk, beef-tea, soup, or cups of tea with bread-and-butter or dry toast; if, on the other hand, the symptoms be so mild that he neglects our advice and does not go to bed his appetite will still be so poor that he is not likely to take food enough to incommode the intestines. In either case I cannot conceive that the food, either by quantity or quality, can be in a position to inflict any mechanical injury on the intestine, for it is inevitably reduced to a pulpy condition before it leaves the stomach, and the intestines are not yet in that dangerously ulcerated condition which they may later assume; hence, neither by drugs nor by food is the patient in this early and possibly doubtful stage likely to be harmed. If harm does really accrue from neglect in this stage it is, I believe, entirely, or at any rate mainly, due to the attempt of the patient to get about and do his work while the microbes are multiplying in him, and his organs, the heart especially, are being wasted by pyrexial oxidation and poisoned by foreign toxins of a most deleterious character. It is this which makes bed such an imperative point in treatment.

I will now pass on to the cases where the diagnosis is certain and the disease is fully developed. I may incidentally mention that statistics will take no part in my argument. Statistics have their uses, but when we are considering the why and wherefore of a given patient's death our minds turn to the question, Could I have averted this catastrophe by any alteration in my plan of treatment? The patient, or his body, is before us as an individual case with its own secrets and interests, and not as a unit in a row of figures with some subtle paper relationship to percentages. I shall mention one or two cases that I have watched with the deepest interest. Now, in the treatment of such cases there are, in my opinion, two general principles of such overwhelming importance that I must deal with them first in general terms and later come to individual points: they are (1) the examination of the stools; and (2) the appetite of the patient.

EXAMINATION OF THE STOOLS.

I lay it down as a golden rule from which no exception should be made that one stool at least must be carefully examined in every 24 hours during the active course of the disease. In my hospital cases, where special facilities exist, I wash a stool through with running water in a large glass vessel. In private houses this is rarely practicable, but the stool even here should be carefully stirred about with something (that can be burnt) so that its composition may be investigated. In the stools may be found (1) obviously undigested milk or other food; (2) blood; (3) sloughs; and (4) mere feculent débris.

1. *The presence of undigested milk or other food.*—This I take to be at once conclusive proof that more milk or other food is being given than can be digested and is an absolute indication that the quantity must be considerably diminished. My own plan is to stop *all* food absolutely for 24 hours and then begin with very small quantities indeed, and if it be

[41] Journal of Experimental Medicine, vol. i., No. 4, 1896.

[1] A paper read before the Medical Society of London on Jan. 28th, 1901

milk curds that are found I prohibit that article altogether in its natural raw state.

2. *Blood.*—If this be visible to the naked eye and yet is present only in small quantity it is an indication that the intestinal lesions are of considerable severity, and it serves more to cross the *t* and dot the *i* of caution than to give any special line to treatment; but if it be present in large quantity it gives the strongest indication for the free exhibition of opium, say 10 minims every two hours for eight or 10 doses, or until the patient is drowsy, and for the stopping of all food absolutely for 24 or 48 hours so as to give as complete rest as possible both to the mind and to the intestine.

3. *Sloughs.*—These by themselves and without blood in quantity merely indicate a natural state of affairs in a case of considerable severity about the third or fourth week. They make us anxious lest hæmorrhage should supervene and suggest starvation or caution in feeding for a day or two, and their total bulk is a matter of some importance as indicating the extent of the ulceration.

4. *Feculent débris.*—This is the desirable constituent of the stools, and the more they consist of this and the less we are able to discern of the other named elements the stronger the indication to persist in the line of treatment which we have adopted.

THE APPETITE OF THE PATIENT.

I am sufficiently teleological in my opinions to hold very firmly that in the economy of nature appetite means the readiness of the stomach for food as well as capability of that organ for dealing with appropriate articles put into it. (I am not here dealing with the pathology of dyspepsia, which undoubtedly seems to offer many apparent exceptions to the above rule.) I have, therefore, in typhoid fever long made it a cardinal rule to allow the appetite of the patient to be, within very wide limits indeed, the sole arbiter of his diet, provided that vomiting, hæmorrhage, or distension of the abdomen are all absent. The temperature I entirely ignore in the matter, feeling absolutely certain that if the wish for the food exists the stomach is clean enough and strong enough to deal with the articles enumerated below, so that what gets into the intestines will do no mechanical damage to the walls of that viscus. While thus stating so emphatically my belief in a liberal dietary when appetite asks for it and other circumstances allow it I must equally emphatically present the other extreme—viz., that in which appetite is completely in abeyance. I am quite confident that during the active ingravescent stage and the height of the fever the digestive function of the stomach is absolutely stopped, and probably that of the intestine too. Experience in the post-mortem room of full stomachs has convinced me very strongly of the truth of this dictum. I am sure that the only food that can during this time be dealt with, as it is the only food craved for by the patient, is plain cold water. We are very much afraid of thus starving our patients—too much so, I am sure; for though we may lead a horse to water we cannot make him drink, and so we may pour food into the alimentary canal, but we cannot make it digest or absorb; nature starves the patient if we do not, witness the universal wasting in all severe cases of enteric fever; and the food we put in only travels slowly on, decomposing as it goes, and causing discomfort if not threatening actual danger, and the idea of feeding the patient in the so-called typhoid stage—dry brown tongue, semi-delirium, &c.—on anything but water is to me repugnant in the extreme. It may naturally be asked how long would I keep on this water treatment. I cannot speak definitely as to limits, but I can say that I have kept it on for as long as four or five days with the happiest results and have never regretted doing it for too long a period, though once or twice I have wished that I had persisted in it for a day or two more. The wish of the patient for food—in other words, his appetite—has hitherto been my sole reason for stopping it of my own will, though I have reluctantly yielded to the solicitations of friends who feared that the patient would die from exhaustion.

DIET.

Having now discussed the influence of appetite in general we may proceed to particular articles of diet in brief detail. Milk I must place first, because as a basis for diet it must remain my sheet-anchor. I strongly object to its being given in any bulk in its natural raw state. It forms a tough ball of curd in the stomach very likely to start vomiting. It should always be given in a form in which this balling and curdling are avoided—e.g., as liquid custard (the yelk of five eggs beaten up with a pint of milk, sugar and flavouring added, and the whole thickened by scalding short of the boiling point); or as baked custard pudding broken up fine with a fork; or as junket; or as the basis of cocoa, of coffee, or tea, or of bread-and-milk; or with rusks soaked in it and beaten up with a little baked fruit pulp, according to the wish and appetite of the patient; or as milk puddings with ground rice, sago, tapioca, &c., well cooked. Eggs lightly boiled or poached I would allow in any stage, at least the yelk spread on bread or a rusk. Jelly and soups flavoured to taste are often very grateful to the palate. All the genus of commercial foods are, I think, of very doubtful nutritive value. The processes incidental to their manufacture on a commercial scale and to their preservation in bulk are what I suspect and I much prefer beef-tea made as follows. Take half a pound of lean beef cut very small, better if passed through a sausage-machine; place this in a small pie-dish, add half a pint of cold water, a pinch of salt, and a few drops of vinegar. Allow the whole to stand cold for two or three hours, then warm it slightly and strain through muslin or even squeeze with a lemon squeezer. Or we may give the beef-juice obtained by quickly cooking a steak over a very hot fire, splitting it open, and scraping it with a sharpish spoon so as to obtain tiny fragments of muscle with the juice. Meat and fish must be either put through a sausage-machine or minced as fine as possible and pounded in a mortar. Bread (very stale, at least three days old), rusks, and plain biscuits of all sorts may be given, either soaked in milk or, if the patient prefers it, he may nibble at such to give his jaws a little exercise. The dryness of the article prevents it being swallowed before it is well softened by saliva. Beer or stout as a stimulating food I should never deny to a patient who asked for it, but other forms of alcohol, given purely as stimulants, come, I think, under the heading of drugs to be used for emergencies. In the typhoid state of a patient who is accustomed to beer and likes it I believe in substituting bottled beer for water as the sole food to be given. The only articles to be avoided are those which may leave small hard particles after leaving the stomach, such as raw fruit, especially apples (their pips), orange-pips and pulp, and grapes (whole)—the juice I have no objection to.

These are examples of the usual available foods; we must now consider the quantities in which, and the times at which, they may be given. In the days when the disease is definitely present and yet the patient is quite conscious and willing to take food I would give him, say at 8 A.M., a cup of milky tea, coffee, or cocoa, or of bread-and-milk, according to his predilection; at noon two tablespoonfuls of crushed meat or fish; at 4 P.M. two ounces of custard or custard pudding; at 8 P.M. the food of his breakfast could be repeated; and at midnight or 4 A.M. the bread-and-milk or any of the other items, if the patient is awake. The patient, however, should never be awakened for the purpose of administering food. Sleep is, I am sure, of more value to him than food in the stomach. Between the hours I have named nothing should be given but plain cold water, or hot water if the patient prefers it. This is an ample supply for any patient during the ingravescence and height of the disease, and during this time even if there be some wish for more food I think we should do better to hold our hands. If the patient becomes unconscious or semi-delirious and the tongue dries and becomes dirty I think the quantity should be diminished and water substituted for two or three of the meals; but, *per contra*, as soon as the height of the disease has passed we should be ready to allow more latitude, according to the patient's feelings, provided that there be no indications to the contrary. These will appear either in the stools, the indications of which I have already mentioned, or in the shape of some complication of the disease, the treatment of which I will now proceed briefly to discuss.

COMPLICATIONS.

1. *Vomiting.*—This is a very exhausting act and is to be avoided in typhoid fever by all possible means. I believe it to be invariably due to putting food into a stomach which has no desire for alimentation, and hence it usually arises from routine feeding against the feelings of the patient. On the first indications of nausea after food resort should be at once had to the plain water diet for 12 hours, and longer if necessary; if it still persist I think a little hydrocyanic

acid and bicarbonate of soda with solution of bismuth the best, as they are the usual and simplest remedies.

2. *Tympanites.*—This, whether as a natural result of perforation and peritonitis or as a complication by itself, I consider to be the complication of typhoid fever which is of most ominous significance and the most difficult to treat. In the former case there is, of course, little to be said or done; surgery, I believe, offers the one sole chance of recovery, and that but a poor one indeed. In the latter case—i.e., standing by itself—there is a good deal to be said about it. As regards its causation, I believe that in some severe cases it will make its appearance despite our most careful attention, and then it requires to be treated as below. But I have a strong suspicion, however, that in the majority of cases it is a complication that arises from improper dieting. Hence I never feed a patient by routine, contrary to his feelings. When the fever gets higher and his feelings give us less guidance I think that a few grains of pepsin or other gastric digestive powder may be given with each meal, but I strongly disapprove of peptonising the food beforehand, as we cannot tell whether our processes are those which the stomach would like its food to undergo. Thus far prophylaxis in general; but we can carry this a stage further: at every visit the hand should be placed gently on the abdomen and careful palpation should be performed. It is thus possible to detect the very earliest warning of the onset of tympanites. The slightest tendency to rigidity of the abdominal muscles or the slightest convexity of the abdomen over its natural condition sounds at once a note of suspicion, and on the discovery of either we should immediately stop all food except water. My own plan is to administer at once two drachms of sulphate of soda in warm water every two hours till the bowels are acting freely. The complication, I believe, most commonly arises when there is constipation, but even if there be diarrhœa investigation will show that the stools have but little feculent débris, and I believe the saline aperient is still the best treatment. I usually, too, order an ice-bag to be placed on the abdomen and resort more persistently to chlorine water or salol as antiseptics. I cannot call to mind having a case of tympanites where the patient has been under my own care from the commencement.

3. *Constipation.*—This is a condition of the bowels which I never allow to persist and the only question is what purgative to employ. All my patients are on admission, as a matter of routine, put upon one grain of calomel at least once a day, and sometimes twice. This has a slight antiseptic action and is a very safe laxative. If, however, in spite of this the bowels are not open at least once in every 12 hours my house physician has instructions to administer sulphate of soda in two-drachm doses every two hours till the bowels act, a simple enema being also administered to attempt to clear the colon and to prevent a *vis in fronte*. I have seen several cases improve remarkably upon this line of treatment. I have never had cause to regret adopting it, but I have regretted a want of courage to adopt it in some of my earlier cases when I was feeling my way to such unorthodoxy.

4. *Excessive diarrhœa.*—I have seen so little of this that I hardly feel competent to say much about it. From six to eight motions a day come quite within the natural history of most cases which ultimately recover. If the stools become more frequent than this they should be personally inspected with the greatest care and suspicion, and I believe that they will almost always supply the clue to the cause of the excess—either milk or food grossly and obviously undigested or much sloughy material from the bowel and large quantities of mucus. In the former case the line of treatment is obvious—viz., to stop all food but water; in the latter case my experience in the post-mortem room suggests that the cause is extensive ulceration of the colon, for this is what I have found in nearly all the cases upon which I have performed a necropsy—apart from perforation and peritonitis. I have therefore been led to regard excessive diarrhœa not due to feeding as a very fatal complication. I tried in one case, with a satisfactory result, an enema containing two drachms of tincture of opium, one ounce of subnitrate of bismuth, two drachms of powder of ipecacuanha, one ounce of starch, and hot water to one pint, so that I should be inclined to try a similar injection in future.

5. *Pyrexia.*—In ordinary cases this is best treated, I think, by tepid sponging. I confess that I do not like the idea of cold baths, but in one case at least where the temperature was very rebellious and threatening I distinctly believe that I saved the patient's life by continuous immersion for nearly three weeks in a bath maintained at 100°F. or a degree or so lower—at any rate, I considered her *in extremis;* I kept her in the bath and she ultimately made a good recovery, and the impression of all who saw her was that it was the bath that saved her.

6. *Hæmorrhage.*—This I have already considered in speaking of the stools; I mention it again to emphasise my opinion that if starvation and opium are found to be useless I believe that nothing else is of the slightest use. Lead and tannic acid I am sure never reach the bleeding spot, and ergot is worse than useless unless it be administered in doses which I should be frightened to try.

DRUGS.

No disease offers less chance to continuous routine drug treatment than does typhoid fever, and yet for all that I must admit that I have a preliminary routine treatment for all cases. It consists of two grains of calomel immediately and then one grain every night, and a mixture containing carbolic acid or chlorine water; or else I give 10 grains of salol in powder three times a day. I have a good deal of faith in these measures. The calomel acts slightly against any tendency to constipation and also as a mild antiseptic, and the other drug is probably useful from its antiseptic properties; such, at least, is my belief, though it is very difficult to account for their good effects upon scientific grounds, for they certainly do not render the stools completely aseptic. I can only assume that in some way the antiseptic derivatives of tar do antagonise some of the particular products of the bacillus typhosus which are most troublesome. Of other drugs I practically use none as a matter of course, reserving them for emergencies in the manner which I have mentioned under each heading.

I cannot leave the question of drugs without mentioning alcohol. This I believe to be unnecessary for the treatment of typhoid fever; but for the treatment of the patient I think that a little may be allowed to those who are in the habit of taking it, and, generally speaking, in that particular form to which they are accustomed. I am particularly fond of allowing a glass of beer, for to the lay mind a glass of beer has no associations with the dietary of the sick, and hence the permission to have one at once rouses them to the impression that they have a good chance of recovery, and this impression is a most valuable one to elicit and to keep up.

Of the details of nursing it is not my province to speak at length, but I would mention the importance of the medical man himself inspecting the buttocks, &c., to see that they are kept scrupulously clean. I am constantly in the habit of ordering a specially long flannel night-gown split all the way down the front and back and tied with tapes. This is the most comfortable form of clothing that I know of for all patients who are in bed and likely to be there for some time. It is at the same time the easiest for the nurse to manage so that free access can be gained to all parts of the body, and it is the easiest to replace and renew. It is such a contrast to the tight-fitting vest, sodden with sweat and probably with dirt, that I so frequently find clothing the person of patients in bed.

The mention of the treatment of typhoid fever would obviously be incomplete without reference to the method of anti-inoculation. This is, I believe, destined in the future to become the universal method (? for prophylaxis also). At present I am personally obliged to leave it with simple mention, but I am in hopes that in the discussion which may follow someone may take it up more fully—someone who has tried the method and has some results to show. The obvious analogy with diphtheria almost compels us to feel certain that it is only improvements in methods of technique that are required.

In conclusion, I would beg to repeat that the less of routine feeding there is in treating typhoid fever the better; each case must be taken on its own merits and indications. I cannot claim infallibility for my methods, but I believe that their results as regards mortality are at least as good as those of any other plan and I feel sure that strength is better maintained and that convalescence is more endurable and rapid. Relapses do occur with my plan as with others, but I feel very little anxiety with regard to them, for the patient has as much strength as his primary attack can possibly allow him to have.

Harley-street, W.

FILATOW'S SPOTS IN MORBILLI.

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IT seems now to be generally recognised that the special spots first discovered by Filatow in the mouths of patients suffering from morbilli are pathognomonic of the disease. Filatow described them in the third edition of his work, "Acute Infections-Krankheiten," in 1895. Previous to this Flindt in *Sundhedskollegiets Aarsberetning* for 1880 had described certain spots on the palate and on the buccal mucosa, but he does not seem to have correctly distinguished these particular spots After Filatow Koplik described the spots in *Archives of Pediatrics*, December, 1896, and since that time they have usually borne his name.

Filatow's spots appear as very fine white specks. Koplik, however, describes them as bluish-white, but most observers will probably agree with Filatow in considering them to be white. In size these spots are often quite minute and require a strong illumination for their recognition; at other times they are three, or possibly five, times as large and are then very readily distinguished even with the reflected light of an oil lamp. On rubbing the spots with the handle of a teaspoon it will be found that the white substance of which they are composed is not at all easily removed. Around each spot is a red areola. On the first day of their appearance the red areola may, however, occasionally be absent, and it will then be very difficult, if not impossible, to make a confi dent diagnosis. Fortunately, however, the appearance of the white speck is very shortly followed by that of the red areola, the spots thereby becoming distinctive. At first the spots may be very few in number, perhaps only one or two, this being especially the case on the first day and the last day of their appearance. In some cases even throughout the whole course of the attack only a small number may present themselves; thus, in one of my cases four was the greatest number which were ever visible at any one time throughout the disease, but in others they become so numerous that the whole of the areas affected may be covered with them. These little spots consist of fine papillæ, the epithelium of whose summits has become pulpy and whitened, whilst the papilla itself and the area of mucosa immediately surrounding it have become hyperæmic and slightly swollen, so that one gets the appearance of the white speck surrounded by the red areola. Filatow clearly took this view of their nature. Certain observers have, however, erroneously described them as vesicles. In cases in which this exanthem is very abundant the individual specks may lie in such close apposition that the white substance of contiguous specks may coalesce, thereby forming spots of a size unusual for Filatow's spots and raising in one's mind a suspicion that they may be due to some form of stomatitis other than the kind in question. This suspicion is, moreover, often strengthened by the observation that the white substance is in these conditions often much more easily erased, thereby increasing the resemblance to some of those forms of stomatitis which are met with in the early stages of scarlet fever and other febrile conditions. Fortunately, however, even in the most abundant eruptions of Filatow's spots a very large number remain discrete and facilitate the diagnosis. The hyperæmia and swelling of the mucosa which, as above described, appear around each speck, rapidly extend, so that the general surface of the mucosa becomes increasingly reddened. At one stage this often presents a macular arrangement, constituting an appearance that has often been noticed in morbilli and which was at one time held to be pathognomonic of the disease. In many cases the reddening extends over the whole mucosal surface, rendering it uniformly injected; upon this injected mucosa Filatow's spots may still be visible. Filatow's spots when they disappear generally do so with great rapidity. They are often present in moderate abundance on the one day and entirely absent on the next, for when the substance constituting the white speck is cast off all trace of the original existence of a Filatow's spot disappears, the site of a spot then presenting no optical character which distinguishes it from the rest of the mucosa.

The commonest site for Filatow's spots is the buccal mucous membrane and on this they have a partiality for certain localities. If the spots are few in number the most likely place to find them is opposite to, and on a level with, the bases of the lower milk molars on either side; in this place they often form a small cluster. Another very favourite locality is the corresponding situation with regard to the upper molars; here also a cluster may be seen. Another position is opposite to the line of junction of the upper and lower molars when the jaws are closed; here they are frequently distributed as a somewhat straggling line. At other times they are more or less evenly disposed over the mucosa in greater or less profusion. After the buccal mucosa the inner surface of the lower lip is the part most commonly affected. In this locality, however, less white substance is usually present at the summit of each spot, so that the recognition of the spots is more difficult. The spots are best seen close to the fornix of the lip and the jaw. The third commonest site is the inner surface of the upper lip, this site being far less frequently affected than the preceding. Certain other localities also are occasionally affected. Amongst the 76 cases which I have observed there were three in which Filatow's spots were distinctly seen to be invading the gum of the lower jaw. In two of these cases they were in great profusion and in one of them they were noticed to extend up to the very margin of the teeth. Filatow's spots may also be seen on the buccal mucosa as far back as its posterior limits, and in some of my cases they were noticed to be present on the bridge of mucosa which passes on each side between the upper and lower jaw at the back of the posterior molars and which connects the cheek with the soft palate. In this situation they were present in ten cases. The spots may also occasionally be found on the soft palate itself; thus, in two cases they were readily visible on the soft palate for the distance of from a third to a half of an inch within the inner margin of the teeth, and in a third case they extended still further. In this particular case—that of a child aged nine years—Filatow's spots were far more numerous than in any other case that I have seen. They were in the greatest profusion on the buccal mucous membrane and the inferior and superior labial mucosæ; they were in great profusion on the mucosa of the gums and the "bridges" above described, and they extended in profusion over almost the whole of the soft palate and the uvula. On the palate they were most numerous in the neighbourhood of the fauces. In this case they were also present on the under surface of the tongue; here the spots were only three or four in number but they presented so typical an appearance that their identity was beyond dispute. Sobel is the only writer, so far as I am aware, who also describes them in this position.

The age of the patient seems to have no controlling influence; they have been seen in the mouths of adults as distinctly as in those of children.

With regard to the time at which the spots first appear, Filatow isolated a case six days before he saw the exanthem. Knöspel, in describing his 41 cases, says that he found Filatow's spots in one case five days, in six cases four days, and in three cases three days before the exanthem. Maroney amongst 140 cases of morbilli observed the spots in two cases four days, in four cases three days, and in 20 cases two days before the exanthem. Maroney amongst 140 cases of morbilli observed the spots in two cases four days, in four cases three days, and in 20 cases two days before the exanthem. Koplik cites 16 cases and amongst these the earliest appearance of these specific spots of Filatow was three days previous to the rash on the skin. Amongst my own 76 cases they occurred in nine cases three days before the exanthem. I have never seen them earlier than this.

My list of 76 cases comprises those consecutive cases of morbilli dating from May, 1898, to the present time that came under observation at a period in the disease at which one could reasonably expect the specific spots to be present. These spots have their own definite periods of appearance and disappearance with relation to the general course of the disease, just as is the case with the exanthem, and it is therefore interesting to look over this list and study the dates of these occurrences. Thus amongst my 76 cases I find that on the fourth day preceding the exanthem five cases were examined and that in none of them were the spots seen; that on the third day 19 cases were examined with a positive result in nine; that on the second day the respective numbers were 26 and 19; and that on the day immediately preceding the exanthem they were 33 and 33. On the first day of the exanthem they were 57 and 57; on the second day they were

59 and 54; on the third day they were 60 and 30; on the fourth day they were 58 and 10; on the fifth day they were 57 and four; and on the sixth day they were 57 and 0. It will thus be seen that whenever my cases were examined on the day of the first appearance of the definite onset of the exanthem (as apart from premonitory rashes) and the day preceding it these specific spots of Filatow were invariably present. It will also be noticed that the incidence for cases examined on either the second day of the exanthem or the second day preceding the exanthem was 75 per cent.; whilst for those on the third day of the exanthem or the third day preceding it the incidence was 50 per cent. Amongst my cases whenever Filatow's spots have persisted up to the third day of the exanthem they have nearly always by that time become very much diminished in numbers, and frequently in definition; whilst on the fourth and fifth days they were often barely distinguishable, and were in several cases far from typical in appearance. I have never seen them later than the fifth day. In most cases they disappeared earlier than the exanthem, but in one or two cases both spots and exanthem disappeared simultaneously.

I may mention that every one of my cases exhibited Filatow's spots. My figures, therefore, are 76 cases with Filatow's spots present in 76; Koplik's, 16 and 16 respectively; Sobel's, 35 and 35; Slawyk's, 52 and 45, but seven, he states, were not sufficiently carefully examined for the spots; Rolly, 78 and 67, or 74 and 67 if four are excluded where the patients had the exanthem when first examined; Finkelstein, five and five; Libman, 50 and 50; and Maroney, 140 and 132. Knöspel saw the spots in 41 cases, but he does not state if these cases were all consecutive.

Certain writers have said that the differential diagnosis of Filatow's spots from others which are found in the mouth is always an easy matter, but with this I cannot agree. In the first place, as above described, the spots during the first few hours of their existence may lack the red areola, and without this important characteristic no diagnosis of Filatow's spots can be secure; and in the second place, in the formation of the diagnosis the following conditions must always be borne in mind. 1. Certain spots of a permanent nature are often present on the buccal mucosa. These, when present, are papules of about the size of a medium-sized Filatow's spot; they are, however, quite inerasable and in colour are always yellowish instead of white, and consequently when once distinguished should no longer give rise to trouble. 2. One writer (Rolly) says that small curds of milk form the only real difficulty; this should not be so, in that curds of milk would not be fixed to the mucosa at all, whilst Filatow's spots are firmly adherent. 3. In thrush the spots are so large and the distribution so anomalous for Filatow's spots that there is no difficulty in distinguishing the two conditions; thrush occurring so often over the soft palate, on the tonsils, and on the dorsum of the tongue—situations for the most part unaffected by Filatow's spots. 4. Aphthous stomatitis to my mind is the only great difficulty in differential diagnosis. Of course, a large plaque of stomatitis is easily excluded, as, for instance, the plaque so often seen on the buccal mucosa level with the first molar teeth; but smaller spots of stomatitis, and especially the small fugitive ones so often encountered at the commencement of febrile disorders—e.g., scarlet fever—and which vanish within a few days, sometimes offer great difficulties in diagnosis from Filatow's spots, especially on the first day of their appearance. The principal differences, however, are these. Small aphthous spots are usually much more readily erased with the handle of a teaspoon; they often lack the red areola; some of them are often too big, thereby casting doubt on the others; they are usually too opaquely white for Filatow's spots; and, besides these points, ulceration is often present at their bases.

With regard to the absence of Filatow's spots in diseases other than morbilli Sobel states that for two months in 1898 he took special pains to examine the buccal mucosa of children affected with various skin eruptions, and that amongst the 1000 cases he examined during that period he in no case found any spots of a similar nature. To this I can likewise bear witness, for during the last two and a half years' practice at a fever hospital I have paid special attention to this point, and excluding the presence of morbilli I have never seen them in any of the 3000 or 4000 cases which I have examined during that period.

As a definite means of diagnosis I would especially lay stress on the utility of these spots in the following conditions where the diagnosis is often notoriously difficult. 1. Rötheln is perhaps the disease or condition *par excellence* that simulates morbilli, and it is therefore the one in which the greatest difficulty in differential diagnosis occurs. Filatow's spots are invariably absent in rötheln, and with this statement all writers on the subject are agreed, so that by means of these spots one can accurately separate the two diseases if seen on the appropriate days, and one can await the evidence of subsequent events with composure. Of rötheln I have seen 31 cases since May, 1898, and in none of them were Filatow's spots present. I may add that I saw all of them from the beginning of the exanthem. 2. When laryngitis occurs in morbilli before the exanthem and is of a very decided character, with much croup and recession of the chest walls, the case is liable to be certified and sent to a fever hospital as one of laryngeal diphtheria; but if on examination these spots are seen one can at all events be quite sure of one thing, and that is, that whatever else the child may have it most certainly has morbilli, and it was by means of Filatow's spots that the six cases of this nature admitted into the hospital with which I was associated since May, 1898, were all correctly diagnosed on admission as having morbilli, much as the other symptoms seemed to point against it. In one of these cases the exanthem did not occur till two days after admission, in another case until two and a half days, and in the other four till three entire days had elapsed. I may add that in not one of these six cases was diphtheria present. 3. Of the condition of morbilli sine eruptione one of my cases was a very striking and undoubted example. The patient was the last unprotected case in a ward ravaged by morbilli who had not contracted the disease. On Nov. 21st, 1899, he presented typical early symptoms of morbilli. His face became slightly puffy, he was irritable and drowsy and resented any disturbance, and he had a distinctly morbilloid cough, thin rhinorrhœa, increased salivation, and a very noticeable morbilloid odour of the breath. There was no lacrymation, no rise of temperature, no exanthem, and no Filatow's spots. On Nov. 22nd there was one very small and ill-defined Filatow's spot on the left buccal mucosa; also a nondescript white spot further back. On Nov. 23rd the child was very much better; he looked lively again and the cough had disappeared. Four very definite Filatow's spots were present on the right buccal mucosa, clustered about one site. On Nov. 24th no Filatow's spots were visible, and on Nov. 28th no exanthem had appeared at all, although very carefully searched for, and the boy was quite well again. Such a case as this, without the pathognomonic sign, would generally leave one in a very doubtful state of mind as to the correct diagnosis; but when one has well-marked morbilloid symptoms, associated with the presence of these spots of Filatow, I think one can rest quite assured that the case is most certainly one of morbilli, in spite of the complete absence of any exanthem. Maroney cites two cases of a similar nature, except that instead of being mild they were fatal attacks. Further observation of the spots may settle the question as to the existence of measles without catarrh, which is at present in dispute. 4. It is well known how very closely some antitoxin rashes and erythema multiforme from other causes simulate morbilli. It is true that catarrh may be more or less completely absent, but still the rash itself may be so very suggestive that if one did not have these spots to fall back on, one would frequently on first seeing the patient be left in some little doubt about the case. Filatow's spots are invariably absent in these cases.

I need hardly point out the great importance of Filatow's and Koplik's discovery from a practical point of view. It is important in that it enables one to accurately distinguish morbilli from certain conditions in which the diagnosis would otherwise be very difficult or beyond our powers. It is also important in that it enables one to check outbreaks of morbilli in households, hospitals, schools, or other institutions by the early isolation of those affected. In the case of schools it has been attempted to stamp out epidemics by notification on the part of schoolmasters and others; but this plan, unfortunately, has hitherto met with little or no success, in that the cases have for the most part been distinguished too late. The method of diagnosis hitherto most commonly in vogue has been by means of the exanthem, but by the time of the appearance of the exanthem catarrhal symptoms are in most cases fully developed. Now, it is becoming generally recognised that the contagium of morbilli is conveyed principally by means of the mucous discharges rather than by the air; hence the importance of isolating a

case of morbilli at a period when catarrh is quite incipient; and the only reliable means of doing this which we at present possess is by means of these spots of Filatow's. Of the value of this method of eradicating morbilli from wards I can speak from personal experience, and in the case of schools I would suggest that when at any time it is found necessary to stamp out an epidemic, a daily examination for these spots in the mouths of all the scholars should be carried out in a good window-light, since it is an examination that can be very readily performed, and is the only method at our command which offers any decided hopes of proving effectual.

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LAPAROTOMY AND CLEANSING OF THE PERITONEUM IN A CASE OF TUBERCULOUS PERITONITIS.

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ON Feb. 27th, 1900, I was called to visit a girl, aged seven years, who was too ill to continue her visits to the physician in town to whom she had previously been taken. I was told that she was suffering from "catarrh of the stomach."

The condition of the patient was as follows:—The abdomen was very tympanitic and resonant throughout. No fluid could be discovered. Apparently continuous with the edge of the liver was a mass which appeared to be a solid tumour within the abdomen; it extended in the line of the gall-bladder from the liver edge downwards to one and a half inches below the umbilicus, and then was continued across the abdomen to the opposite ribs at the same level, its margin being marked with four large sinuosities. The mass was smooth, resistant to the touch, and it could be grasped at the lower margin by the fingers, giving an impression of a solid tumourous mass. The skin over it was free and no movement in a vertical direction occurred in respiration. Percussion gave resonance over the whole area which was occupied by the mass. Two enlarged glands could be felt in the left iliac fossa. No signs of disease could be discovered in any other organ. There was occasional vomiting which would occur every third day or so. There was a good deal of flatulence and constipation and the stools were greenish and flocculent; they contained much mucus and were very offensive.

With regard to treatment, as the child's temperature registered nightly from 101° to 102° F. she was kept in bed and her bedroom was kept warmed and freely ventilated; she was given such light foods as bread jelly, yelk of egg, rusks, bread-and-milk, meat broths, meat juice, &c.; passive movements of the limbs with massage were performed daily; and castor oil in frequently repeated small doses was given for the constipation, with an occasional enema. The child improved to a certain extent. Many of her symptoms appeared to mend; she became less irritable and slept rather better, the sickness ceased, and the stools improved in appearance. It was, however, difficult to measure improvement in these matters and the measurable symptom, the temperature, showed a gradual average rise by the end of April. The outline of the tumour showed an advance in size to the extent of half an inch in two months. I therefore advised an exploratory laparotomy. The following was the average temperature for the five months:—March, morning, 97·6°; evening, 100·3°. April, morning, 99·5°; evening, 101·5°. May (operation on the 2nd), morning (?); evening, 99·3°. June, morning, 98·8°; evening, 99·6°. July, morning, 98 8°; evening, 98·9°.

On May 2nd chloroform was administered by Dr. James Crombie, and, assisted by Dr. R. R. Law and by Mr. E. C. Stabb, whose kind offer to be present was gladly accepted, the abdomen was opened in the middle line for three inches immediately below the edge of the hard mass referred to above. Some sero-puriform fluid escaped. Digital exploration through the wound discovered extensive but weak adhesions, which were firmest towards the rim of the pelvis but were easily broken down. The tumour-like mass in the upper abdomen appeared to the fingers as a shield of tissue of an even thickness of three-quarters of an inch; it was smooth and resistant and was closely incorporated with the abdominal wall. The impression conveyed to the touch was that of a fibrous structure and it was doubtless a fibrous areola which had originated in the peritonitic inflammation excited in the neighbourhood of tuberculous nodules which would thus be included by the meshes of the inflammatory tissue. The peritoneum was everywhere studded with nodules and one of these was removed for examination from the serous covering of the ileum. The adhesions having been broken down the peritoneal cavity was thoroughly douched out with two gallons of normal saline solution by means of a Spencer Wells large-bore douching cannula, which was carried down with the finger as a guide into the pelvis and into every part of the abdominal cavity. A careful toilet with sponges on holders terminated the operation, and the wound was brought together in its deeper parts by buried sutures of fine silkworm gut and by ordinary silkworm gut for the skin.

The after progress of the case was quite uneventful. On the evening of the operation the temperature rose to 102·6° and from that time it was slightly subnormal for 10 days, after which it rose to 98·8° or 99·4°, at which it has remained since. The following is the report of the Clinical Research Association on the nodule removed: "This nodule shows groups of grey and caseous tubercles embedded in much young inflammatory tissue on the peritoneum. The giant cells are large and numerous."

Eight months have now elapsed since the operation, during which time every endeavour has been made to improve the condition of the child. Exercises after the manner of Mr. Bernard Roth have been employed daily; during the whole summer the child has lived an open-air existence and other rational measures have been employed, while good nourishing solid food has been given, with as much scalded cream as the child could take. The condition of the patient is such as to make the prognosis very hopeful concerning her ultimate recovery, providing one is given a free hand to interfere surgically as often as indication arises. The physical condition of the abdomen has in these five months become modified. The mass which formerly occupied a continuous area as described is now represented by a margin of the original mass next against the liver edge and by scattered masses mapped over the area previously occupied by the shield-like neoplasm. There are yet glands to be felt in both iliac fossæ, but their much greater size leads me to think, in the absence of temperature, that they are probably ensheathed in fibrous tissue. There is a small tuberculous nodule in the fold of the right buttock which has been present since April and which involves the skin. The general appearance of the child has quite altered. From being somewhat wizened and prematurely wise in face, action, and manner, she has plumped up and has become naturally mischievous and romping as a child should be.

In these cases delays have a dangerous end. There is unquestionably a more pronounced progression in gravity between serous and suppurative peritonitis than between serous pleuritis and empyema. Once the effused fluid has become puriform the prognosis as to recovery from operation must be quite a different matter from that of the same case in the serous stage, for the suppurative peritonitis includes a long history—firm adhesions, encysted pus, limited by anatomical boundaries whose resistance is lessened by the continued inflammatory processes, make up together a posse of difficulties not to be encountered with a light heart. To all surgeons accustomed to perform abdominal sections there can surely be no more disheartening condition than these lacunæ with washleather-like sloughy walls containing stinking acrid pus which in many cases are so numerous and so hidden by more superficial adhesions that the main difficulty lies in being sure that all such encystments have been exposed and cleansed. It appears to me that, given the presence of tuberculous-like masses in the abdomen and a nightly rise of temperature not mitigated by treatment and continuing for an entire month, the time has arrived for an

exploratory laparotomy; and there appears to be no reason why such an operation should not be repeated as often as similar indications arise providing that the general condition of the patient is such as would encourage a good prognosis.

Sidcup.

SELENIUM COMPOUNDS AS FACTORS IN THE RECENT BEER-POISONING EPIDEMIC.

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OTTO ROSENHEIM, PH.D., F.C.S.

ALTHOUGH no doubt we may in the immediate future be in possession of a more copious literature on the most interesting recent beer-poisoning epidemic it cannot be denied that at the present time, thanks to the energy of the various workers in this field, we have at our command a very adequate material upon which to base conclusions and criticisms. Upon reviewing especially Kelynack's and Kirkby's book and Reynolds's paper on this subject we were struck, as probably many others have been, with the apparent incongruity between the doses of arsenic taken and the effects produced. Although in some cases the amount of arsenic found in the beer and actually consumed by the patient is unquestionably sufficient to explain the poisoning, in other instances this is by no means clear.

In trying to explain this anomaly four principal alternatives suggest themselves. The first one obviously is to assume a want of accuracy in the results of the quantitative analyses. We must regard all the methods at present employed for the estimation of those very small quantities of arsenic in complex liquids like beer as only capable of giving approximately accurate results. On the whole, however, the results obtained in this connexion err probably in the direction of the maximum rather than in that of the minimum, and we are inclined, therefore, to disregard error in quantitative analysis as an explanation.

It has been further suggested that the arsenic may be present in some organic (biological) combination formed by the action of certain micro-organisms during fermentation; in support of this the work of Gosio and others has been adduced with regard to the power of certain organisms (especially penicillium brevicaule) to form organic gaseous substances from minute traces of solid arsenic compounds. Apart from the fact that these micro-organisms have never been found to exist in the presence of active yeast, it is very unlikely that their products would remain unnoticed in the finished beer, as it is precisely their characteristic smell which serves for their detection in the more minute quantities.

A third series of explanations are characterised by one common feature—viz., their absolute vagueness. They all assume the presence of poisonous by-products of unknown nature formed by the action of pure or arsenicated sulphuric acid during the manufacture of the brewing sugars or during the fermentation of these sugars. No poisonous substance of this class has, however, been isolated and their existence must be regarded as purely hypothetical.

The fourth explanation, and the one adopted by us, is that some tangible poisonous substance which has up to the present escaped detection and estimation has found its way into the beer along with the arsenic. In searching for such a substance we directed our attention to the possible impurities of sulphuric acid other than, but exerting a physiological action similar to, arsenic. Selenium and thallium at once suggested themselves to us.

It is a known fact that selenium occurs together with arsenic in nearly all pyrites and the sulphuric acids prepared from them.[1] It has also lately been pointed out that the present technical operations for the removal of arsenic do not render the acid selenium free.[2] We were able to convince ourselves that even colourless commercially purified English sulphuric acid still contained selenium and that the dark brown commercial "double rectified oil of vitriol" (D.O.V. or R.O.V.) as sent out by the chemical manufacturer implicated in the recent poisonous cases, and therefore probably identical with that alleged to have been ordered by the sugar manufacturers, gave a very strong selenium (and arsenic) reaction. Upon quantitative estimation this latter acid yielded 0·2 per cent. of selenium or 0·3 per cent. selenious acid. We have up to the present been unable to obtain the ordinary "brown oil of vitriol" (B.O.V.) which was actually used in the manufacture of the sugar and which, according to the published analysis, contained about 1·4 per cent. of arsenious acid. It is obviously to be inferred that the percentage of selenium in this latter acid is raised accordingly.

The chemical properties of selenium and selenious acid render it practically certain that they would pass over together with the arsenic into the sugar manufactured by means of the impure sulphuric acid and thus be present in the corresponding beer.

If we now consider selenium compounds from a pharmacological standpoint we find that they are highly poisonous, and although chemically allied to sulphur compounds are in their physiological behaviour practically identical with arsenic. So similar are the effects produced by these two poisons that according to Kobert[3] the one may be easily mistaken for the other. According to C. Obabrié[4] 0 003 grammes per kilo body weight is lethal for dogs. No cases of selenium poisoning have so far been recorded in man, but the general symptoms in animals are identical with those produced by arsenic.[5]

With regard to the detection of selenium we would draw attention to the following points. It is precipitated along with arsenic in Reinsch's test and may be mistaken for arsenic before sublimation. When not specially looked for it may escape detection in the presence of arsenic even after sublimation.[6] By Gutzeit's or Marsh's test for arsenic it is not shown, being precipitated by the zinc and sulphuric acid. A very sensitive reagent for it in colourless sulphuric acid is codeine, with which it gives, in the cold, a green colour, changing to steel blue at warm bath temperature.

From the above considerations we regard the conclusion justified that selenium compounds have played a definite rôle in the recent beer-poisoning epidemic. Their part, however, is subsidiary to that of arsenic. The presence of selenium in the beer would explain many anomalous cases, amongst which may be numbered those in which the dose of arsenic taken was very small, those in which arsenic could not be found in the excretion, and those also (notably two cases of infants at the breast) in which no arsenic could be found in the milk. In the absence of extensive pharmacological investigation upon the higher animals it is impossible to say to what extent the presence of selenium with the arsenic might modify the symptom complex produced by this latter poison.

The most important conclusion, however, which we would draw from our investigations relates not to the past but to the future. In view of the poisonous action of selenium it is absolutely essential that all sulphuric acids used in the manufacture of food products should not only be arsenic but also selenium free.

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[1] Personne, Lamy, Scheurer-Kestner: Comptes Rendus, 1872; Drinkwater: Analyst, viii.

[2] Schlagdenhauffen and Pagel: Journal de Pharmacie et de Chimie, 1900.

[3] Lehrbuch der Intoxicat., 1893, p. 382.

[4] Annales Chim. Physique, vol. xx., p. 202, and Comptes Rendus, vol. cx., p. 152.

[5] Compare Czapek and Weil: Archiv für Experimentelle Pathologie und Pharmak., 1893, vol. xxxii. O. Modica: Archiv Ital. Biolog., 1898. p. 221.

[6] If selenium and arsenium are precipitated together upon copper foil as in Reinsch's test and carefully sublimated, in addition to the well-characterised crystals of arsenic, fern- or feather-shaped crystals of selenious acid can be distinguished microscopically and may be identified by various methods.

AN INTRA-PERITONEAL METHOD FOR RADICAL CURE OF INGUINAL HERNIA.

BY T. H. WELLS, M.D. LOND., M.R.C.S. ENG.,
LATE ACTING HOUSE SURGEON TO RADCLIFFE INFIRMARY, OXFORD.

HAVING seen the following operation performed by Mr. Symonds with great ease and celerity and with marked ultimate success, it seemed that a short description of the operation as carried out by him might be interesting and instructive. The danger of opening the peritoneal cavity

has of late years been so reduced that it adds little or nothing to the mortality of an operation, and again, in all the methods of radical cure now practised the sac, having been isolated, is opened to insure its being empty; consequently the abdominal cavity is opened in one case as much as in the other.

Description of operation.—The patient having been prepared and anæsthetised in the usual manner, an incision is made two and a half inches long commencing in the semilunar line and ending over the external abdominal ring. This incision extends in its whole length through skin, superficial fat, fascia, &c., and exposes the external abdominal ring in its lower part. The upper one and a half inches of this incision are now prolonged down through the abdominal muscles, &c., the peritoneum is exposed, and all hæmorrhage having been stopped the peritoneum is opened. A finger is next introduced through the opening into the peritoneal cavity and passed downwards through the internal ring into the hernial sac, which is then thoroughly and carefully explored. There being no adhesions between the sac and the abdominal contents these are steadily and carefully reduced by means of the hand outside and finger inside. Having emptied the sac, the first finger being still inside and used as a director, a pair of volsellum forceps are passed along its palmar surface and the apex of the sac is seized and brought up inverted into the upper part of the wound. Having thus got the inverted sac into the upper wound it is twisted once or twice on itself to obliterate its cavity and stitched carefully to the cut surface of the peritoneum with fine silk or stout catgut and the abdominal cavity thus closed. The pillars of the ring are then brought together with fine silk sutures, taking care not to injure the structures of the cord. The abdominal muscles are next brought together in layers over the upper part of the incision and the edges of the skin are brought together with continuous or interrupted sutures of silkworm gut.

To recapitulate, the operation may be divided into seven stages: (1) an incision two and a half inches long in the linea semilunaris, ending over the external abdominal ring and passing through skin, fat, and superficial and deep fascia; (2) deepen the upper one and a half inches through the abdominal muscles, transversalis fascia, and subperitoneal fat, and having arrested all hæmorrhage open the peritoneal cavity; (3) explore the sac with the finger and remove any gut; (4) insert forceps along the palmar surface of the finger, seize the apex of the sac and invert it, bringing it out into the upper wound; (5) stitch the sac, after giving it a couple of twists on itself to obliterate its cavity, to the peritoneum; (6) stitch up the external abdominal ring; and (7) close the wound by bringing the structures layer by layer into accurate apposition.

The advantages claimed for this operation by Mr. Symonds are as follows. Firstly, it is expeditious. The most tedious part of a radical cure is often the finding of the sac, its subsequent separation from the structure of the cord, resulting in many cases in considerable manipulation and frequently laceration of the walls and contents of the inguinal canal and scrotum—by this method the sac is found immediately. It might be argued that there would be considerable difficulty in seizing and inverting the sac, but such is found not to be the case, and if it should occur one still has the advantage of immediately defining and exploring the sac before proceeding further. The following case is an illustration of this point. A well-built labourer, aged 36 years, was admitted to the Radcliffe Infirmary for right inguinal hernia. 12 months previously he had been operated upon for the same thing, but three days after the operation he developed pneumonia and was very ill for three weeks with continuous cough. Owing to cough and straining the wound had given way and he had since been obliged to wear a truss. In this case Mr. Symonds decided to operate by the intraperitoneal method, though owing to previous operation and having worn a truss he anticipated some difficulty in inverting the sac. On exploration omentum was adherent to the sac, but it inverted readily and the omentum was stripped off in the upper wound where any bleeding could be easily seen and arrested. Secondly, the neck of the sac is obliterated high up. Thirdly, the inverted sac aids in forming a firm scar. Fourthly, the sac and contents can be explored and if necessary the sac opened below quickly and safely. Fifthly, the incision allows any methods of closing the inguinal canal and external ring to be carried out which the operator may desire.

Banbury, Oxon.

A CASE OF PRIMARY CARCINOMA OF THE VERMIFORM APPENDIX.

WITH REMARKS.

BY T. R. C. WHIPHAM, M.B. OXON., M.R.C.P. LOND.,
MEDICAL REGISTRAR TO ST. GEORGE'S HOSPITAL.

THE patient, a female, aged 45 years, was admitted into St. George's Hospital on Sept. 11th, 1900, under the care of Mr. G. R. Turner, with great swelling of the abdomen and a tumour in the left iliac region which was diagnosed as carcinoma. Surgical interference being deemed impracticable she was transferred to the care of Dr. F. G. Penrose, to whom I am much indebted for permission to publish the case. There was nothing noteworthy in the patient's history and she had always enjoyed good health until five or six weeks previously to her admission. From that time, however, she had been rapidly losing flesh and strength, and for the last fortnight had noticed that "the stomach was swelling" and that she had passed very small quantities of urine. Defecation was normal and regular. Her condition on admission to the hospital was one of marked emaciation and her complexion had a malignant sallow tinge. The abdomen was much distended and tender, the skin being white and shiny, with œdema present over the lower part. The superficial veins on the abdomen and lateral aspects of the chest were enlarged. In the left iliac fossa and the adjoining part of the hypogastrium was a large, hard, irregular mass of about the size of two fists and arising apparently in the pelvis. There were dulness in the flanks, though unaltered by position, and a marked thrill as of free fluid in the peritoneal cavity. The liver was not apparently enlarged. The legs were slightly œdematous. Per rectum a large mass was felt in Douglas's pouch, but a vaginal examination by Dr. A. F. Stabb failed to throw any further light on the case. No enlarged glands were felt. The urine was normal and the temperature was not raised. The course of the case was one of steady decline accompanied by occasional attacks of vomiting. The patient was kept under morphia for the relief of the pain and she died on Oct. 3rd.

At the necropsy the abdomen was found to be greatly distended by a large quantity of serous effusion. The peritoneum over both the parietes and viscera was densely studded with innumerable nodules of growth, a large number being on the abdominal surface of the diaphragm. The intestines were matted together, the omentum was thickened and infiltrated, and the mesenteric glands were enlarged.

FIG. 1.

Vermiform appendix in transverse section, actual size, showing great thickening of the intima. M, Mesentery.

Throughout its entire length the mucous membrane of the alimentary canal was intact, with the exception of a small portion at the origin of the vermiform appendix which was occupied by new growth. One or two secondary deposits of the size of peas were found in the liver, and the left ovary was transformed into a mass of growth measuring about six by four inches, the surface of which was irregular and presented some minute cysts. In the right ovary was a unilocular cyst of the size of a cricket-ball. The other viscera showed no signs of new growth. The lymphatic glands in the neck, in the anterior mediastinum, and in the groins were hard and enlarged.

The above case, in which I performed the necropsy, is

interesting on account of the rarity of cases recorded in which the appendix has been the seat of a primary carcinomatous invasion. That this was the case in the present instance there is apparently but little doubt. To the naked eye cross section of the appendix showed a notable increase in the thickness of the inner coats with but comparatively slight involvement of the muscular layers, and none of the peritoneal, points which are well brought out in the accompanying drawings of a transverse section (Fig. 1 and Fig. 2.). The mucous membrane is seen to be extensively involved by spheroidal-celled carcinoma, some of the gland tubes showing early proliferation of their cells, while the muscular coats are invaded to a much less degree. That this was the only part of the intestinal tract involved points strongly to its being the original focus of the disease, and the cancerous condition of the left ovary may be considered as due to dissemination, that organ being liable to infection in cases of abdominal carcinoma. To Dr. H. D. Rolleston my thanks are due for the expression of his opinion on the microscopical evidence which is in accord with this view. It is further remarkable that Dr. Rolleston himself recorded a case of primary carcinoma of the appendix [1] which occurred at St. George's Hospital as recently as in March last, though from a clinical point of view these two cases afford a marked contrast. In neither, it is true, was cancer of the appendix suspected. Dr. Rolleston's case was apparently one of ordinary relapsing appendicitis, whereas the present case ran a course which is usually associated with malignant disease and presented no symptoms of the appendix being involved.

It has been stated that primary carcinoma of the vermiform appendix is perhaps not quite so rare an affection as has been commonly supposed, and certainly the occurrence of these two cases at St. George's Hospital within a period of seven months would favour that view. The reasons why cancer of the appendix is overlooked are: (1) that appendices after removal are not submitted to microscopical examination as a routine practice; and (2) that in dissemination of the disease the appendix may be involved in a large mass of growth implicating the cæcum or other parts which may be thought to have been the origin of the affection. In Dr. Rolleston's case it may be noted that the appendix was examined more or less by chance, and in the present case it was fortunately lying comparatively free.

The literature of the subject up to the date of his case is fully set forth by Dr. Rolleston in the article above referred to, but he has kindly drawn my attention to the fact that since then Elizabeth Hurdon [2] has recorded a case of primary spheroidal-celled carcinoma of the appendix in a woman, aged 24 years, who was thought to have a floating kidney. The appendix after removal was found to have a small oval swelling projecting into its lumen so as practically to obliterate it. On further examination it proved to be carcinoma. Kelly [3] has collected from literature 18 cases of primary cancer of the appendix, and to this number he adds two of his own which were both of the spheroidal-celled variety. He also describes an endothelioma and refers to the previously published cases of an endothelial sarcoma by Glazebrook and of a psammoma by Kanthack and Lockwood. Innocent tumours of the vermiform appendix, according to the same observer, appear to be even rarer than are those of primary malignant disease, and he has only met with two cases of fibro-myoma of the appendix, both of which were associated with similar growths in the uterus. As evidence of the large amount of work that has been done in this direction it may be noted that during the years 1897–1899 Kelly examined 706 appendices removed by Deaver at the German Hospital, Philadelphia, while Maydl and Nothnagel have analysed altogether 41,838 necropsies performed in

FIG. 2.

Transverse section of the vermiform appendix under a low power.

[1] THE LANCET, July 7th, 1900, p. 11.

[2] Johns Hopkins Hospital Bulletin, July–August, 1900, p. 175.

[3] Proceedings of the Pathological Society of Philadelphia, 1900, p. 109.

ienna, including 3585 cases of carcinoma, and found that in two only was the vermiform appendix primarily affected.

Grosvenor-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF DIPHTHERITIC PARALYSIS.

BY A. J. RICE OXLEY, M.B. DUB.

THE following notes of a case of diphtheritic paralysis after very slight sore-throat are so interesting and emphasise so clearly some of the points referred to by Dr. E. F. Trevelyan in his able paper[1] that I venture to think they may be worth recording.

A boy, aged 10½ years, was brought to me some little time ago by his father who stated that the boy could not swallow properly, fluids returning through his nose, and that there was something in the throat or nose causing this state of things. He wished to know if an operation was necessary for the removal of the obstruction. Two medical men had seen the boy and one of these said he had found the growth and was very anxious to have the boy anæsthetised and operated on without delay. I elicited the fact that the boy's sight was also so much interfered with that he was frequently reprimanded at school for inattention when in reality he was unable properly to distinguish figures and writing on the blackboard. The character of his voice and the history that he had been at home for two days with slight sore-throat made me suspicious and on examination the palate was found to be practically motionless. Except for this and the affection of vision there were no other very marked symptoms of any kind. The boy, as I have stated, had returned to school and but for the regurgitation of fluids through his nose would probably have continued at school. Some of the home circle were inclined to look upon the nasal regurgitation as a bad habit or trick, the boy's general condition was so good and the sore-throat had attracted so little attention. Removal from school and a course of the usual tonics cured the paralysis and the impaired vision.

Streatham.

A FOREIGN BODY IN THE ARM FOR 10½ YEARS.

BY A. R. HENCHLEY, L.R.C.P., L.R.C.S. EDIN., L.F.P.S. GLASG.

ACCOUNTS are so often given in the columns of the medical press of cases where foreign bodies have migrated from the position of entrance to some more or less remote part of the body that the present case seems worth mentioning. In this case the foreign body remained practically in the same position as it entered notwithstanding the great lapse of time and its being situated in the arm.

On Dec. 26th last a young man, working as a labourer, came to me saying that he thought he had a piece of glass in his arm that he wished removed. He said that 10½ years ago while "playing at horses" with some boys he stumbled and fell on some broken glass. His left arm bled freely, but healed up all right in due time and gave no further trouble till a few days before, when a friend happened to pinch him just over the place and he felt a sharp pricking pain. On examination of the arm I found a stellate-shaped scar about three inches above, and slightly external to, the internal condyle of the humerus, and one and a half inches internal to and on the same level as the scar was to be felt a fairly moveable oblong body about two inches in length. After having made the skin aseptic I sprayed it with ether and made a vertical incision three-quarters of an inch long, and eventually got out a piece of glass a quarter of an inch thick and about one and a half inches long and the shape of an old-fashioned *f*. It was imbedded in a considerable amount of tissue.

Blagdon, Bristol.

[1] THE LANCET, Nov. 24th, 1900, p. 1482.

A PECULIAR COMPLICATION IN MIDWIFERY.

BY JAMES MORE, M.D. EDIN.

SOME little time since I was called in by a midwife to see a patient of hers who had been in strong labour all day without any appearance of its coming to a satisfactory termination. The midwife informed me that there was something unusual in the case as she could not make out the presentation. On examination I was myself quite at a loss as to its nature. I found the lower outlet of the passages completely blocked up by some part of the child but what that part was I could not make out. It seemed like a spongy mass with one opening in the centre, into which the finger could be easily introduced. It was not the mouth as the jaw was absent, nor the anus as the pelvic bones were not within reach. I determined to introduce my hand and explore, and on doing so I was surprised to find that the mass was indeed the breech with the fœtal vagina much swollen and congested. On delivering I found this part of the child very much swollen and almost black, evidently caused by the nurse poking her finger into the opening under the idea that it was the os uteri—a mistake I could quite understand under the circumstances and which I was on the verge of committing myself.

Rothwell.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Procemium.

ST. MARY'S HOSPITAL.

TIGHT BANDAGING; ISCHÆMIC PARALYSIS IN AN ADULT.[1]

(Under the care of Mr. EDMUND OWEN.)

THE paralysis following the application of a splint has been termed "ischæmic paralysis," on the supposition that the pressure on the vessels of the limb has impaired the blood-supply of the part so that the muscles have suffered and perhaps a chronic inflammation with sclerosis of the muscles has followed. Mr. H. Littlewood attributes it[2] merely to contraction of the muscle in healing after being torn. It is, however, not improbable that another factor is concerned in the production of this variety of paralysis, and this other factor is a neuritis of the motor nerves of the part resulting from the excessive pressure of the splint. In some cases one of these factors, in other cases the other, may be the chief or only cause of the palsy, but it is not improbable that in most instances both causes act.

A man, 30 years of age, a carpenter, was admitted into St. Mary's Hospital on March 31st, 1900. 17 months previously, when working on a wall at Krugersdorp, in the Transvaal, he fell about 15 feet, and stretching out his left hand to save himself, he "broke the outer bone" of his forearm a few inches from the wrist. (The fracture duly consolidated.) He was treated by a Scotch practitioner and a Boer practitioner in consultation, who fixed the arm between an anterior and a posterior splint which reached from the bend of the elbow to the wrist. The patient said that the splints were bound on very tightly by three pieces of bandage which were put on through looped ends—"bowlines"—and hauled taut. He said that he complained at the time that the splints were too firmly bound on, but that no notice was taken of his complaint; so he thought that such harsh treatment

[1] Reported at a meeting of the Medical Society of London on Jan. 28th, 1901, and the case exhibited.

[2] THE LANCET, Feb. 3rd, 1900.

was probably in accordance with the needs of the injury. In four days' time—during which he had suffered intense distress—the splints were taken off, the hand being much swollen; they were afterwards re-applied. The splints were removed from time to time and gentle massage was done during 30 days, after which the splints were entirely left off. The hand, however, remained swollen for at least two months, and during this time he lost the nails of his first and second fingers. The thumb-nail also blackened, but it did not come off. When the swelling went down there was very little feeling in his hand, and his fingers and thumb were stiff and useless. About a fortnight after the accident two sloughs appeared—an extensive one over the outer side of the forearm near the elbow and a deep one over the tuberosity of the scaphoid bone. The resulting sores took respectively three and four months to heal.

The forearm was found to be fixed midway between pronation and supination; the thumb was strongly adducted with the terminal phalanx rigidly flexed, and the fingers were stiffly bent into the palm. On firmly flexing the wrist the fingers could be partly straightened, but the thumb was immoveable and the hypothenar muscles were much wasted. Faradaism gave no reaction, but galvanism set up sluggish contractions. There was considerable anæsthesia in the hand and fingers. The outlook was most unpromising, but the man readily accepted the suggestion that an attempt should be made to put slack into the pronator radii teres and most of the flexors by taking an inch out of the upper part of the radius and ulna. After this it was found that he could get his fingers straighter and had much more power of rotation of the forearm; but the improvement was not marked, so most of the tendons at the front of the wrist were exposed by operation, split, cut, lengthened, and sutured.

In October the man was re-admitted because non-union had followed the operation on the bones, and as the tendons seemed to need more slack being put into them, another inch was removed from the bones by the electric saw, and the fresh ends were adjusted by wire sutures. An operation was done for lengthening the long flexor tendon of the thumb. The limb was adjusted in a plaster-of-Paris apparatus as before, the wound healed perfectly well, but, as before, there was no solid union and the question is, "Can anything more be tried for him?"

Remarks by Mr. OWEN.—The pathology of the case is probably this, that the tight and long-continued compression of the forearm kept the muscles completely starved of blood, and so injured them that a myositis supervened, which, in its turn, was followed by an intractable fibroid degeneration of the tissue with permanent contracture. It was Volkmann who first described the disease and found the name for it, *ischæmic* (ἰσχω, restrain; αἷμα, blood) *paralysis*.

I have seen a good many cases of ischæmic paralysis in children, but I have never previously met with an instance in an adult; and I should not be surprised to learn that no other case in an adult has been recorded, for an adult, as a rule, would absolutely decline to submit to the agony of the tight compression. In children the myositis has sometimes been determined by a few hours' compression, and, of course, the tighter the compression the shorter need be the period. My own experience of operation in these cases has been most unfavourable, but my colleague, Mr. Herbert Page, was enabled to speak more hopefully in a case which he recorded in a valuable clinical lecture in THE LANCET of Jan. 13th, 1900, p. 83.

PARK HOSPITAL, HITHER GREEN, S.E.

A CASE OF ENTERIC FEVER; LARYNGEAL PERICHONDRITIS, TRACHEOTOMY; RELAPSE, PERFORATION, LAPAROTOMY; NECROPSY.

(Under the care of Dr. A. KNYVETT GORDON, Senior Assistant Medical Officer.)

THE value of absence of liver-dulness as an indication of free gas in the peritoneal cavity is not so great as was at one time thought, but the sudden appearance of this sign during the course of typhoid fever is necessarily of great importance and is very suggestive of perforation. The mortality after laparotomy for perforation in typhoid fever must always be high, for the patient's general condition before the perforation occurs is usually very bad, and the added shock of the perforation and of the operation is sufficient frequently to prove fatal even if no marked peritonitis should have followed. Mr. J. E. Platt has collected 103 cases, and in 21 of these the patients recovered.[1] This is a mortality of nearly 80 per cent.

A well-nourished boy, aged 15 years, was admitted to the Park Hospital on Sept. 20th, 1900, suffering from an attack of enteric fever which was stated to have begun on the 16th. On admission he was found to be moderately ill: there were slight abdominal distension and enlargement of the splenic dulness, nocturnal delirium, headache, and slight diarrhœa. The temperature was 39·8° C., the respirations were 25, and the pulse was 110. The mouth was very dirty, the tongue and gums being covered with dried muco-purulent secretion; there was one carious molar tooth discharging pus which was extracted on admission. He became worse and his attack ran a severe course which, however, with the exception of hæmorrhage from the bowel on Sept. 28th, 29th, and 30th, did not present any special features until the morning of Oct. 15th. On that day the respiration became stridulous and he rapidly developed symptoms of laryngeal obstruction; there were great distress and rapidly increasing cyanosis with very slight epigastric recession. In the afternoon, about 10 hours after the onset of the stridor, a high tracheotomy was performed after injection of eucaine subcutaneously, no general anæsthetic being required. A No. 5 Parker's tube was inserted, with complete relief of the symptoms. On the next day it was possible to see the larynx with difficulty and a large swelling was found over the right arytenoid cartilage and ary-epiglottic fold; it was bright red in colour and was causing almost complete glottic obstruction. On Nov. 2nd he was able to breathe without the tube for a short time, and the metal tube was replaced by a rubber one which he wore for gradually decreasing periods until his death, but his voice did not return at all. As seen with the laryngoscope the swelling appeared to be lessening gradually; there was no sudden discharge of pus but the sputum was muco-purulent throughout. The temperature, which had been raised at first daily to 40° C. but had been controlled easily by tepid sponging, began to fall on Oct. 10th and reached normal on the 15th, the pyrexia having thus lasted 28 days. On Oct. 28th the temperature rose again and a relapse occurred, the second attack being considerably milder than the first and presenting no features of interest until the afternoon of Nov. 10th, when he vomited slightly, but was not otherwise worse. On the 11th, at 10 A.M., he became suddenly worse, the chief symptom being rapidity of breathing; there was no abdominal pain at all and the temperature, which ranged from 38° to 39° C., did not fall; there was no marked collapse, vomiting, or hiccough. On examining the abdomen there was greatly increased distension, and the liver dulness, which had been normal at noon on the preceding day, had completely disappeared; the abdomen moved very slightly, and the diaphragm was acting; a long tube was passed per rectum as far as the sigmoid flexure, but no gas escaped.

It was thought that perforation had occurred, and as the boy, though much emaciated by his long illness, was not moribund it was decided to open the abdomen. This was done at 3.30 P.M.—probably six hours after perforation—through an incision in the right linea semilunaris, chloroform being administered through the tracheotomy tube. In the incision, which was four and a half inches long, the deep epigastric artery was cut and was ligatured, bleeding being completely arrested. On opening the peritoneum fœtid gas escaped and a quantity of clear serous fluid welled up, but there was no sign of pus; a coil of small intestine presented which was brightly injected on its surface. The appendix was felt, and on tracing the ileum back a perforation was found, from which fæces were escaping, four and a half inches from the ileo-cæcal valve and about three inches from the presenting coil. This perforation was of the size of a crowquill and was situated in an ulcer one and a half inches long and three-quarters of an inch wide. Lembert's sutures of fine silk were now passed so as to invaginate the entire ulcer and the intestine a quarter of an inch on each side, the stitches reaching to half an inch from each end of the visibly ulcerated surface. As the boy's condition did not admit of a prolonged peritoneal toilette the fluid was sponged out as gently as possible and the abdomen was sewn up with silk-worm gut, a gauze drain being left at the lower angle of the wound. The whole operation lasted an hour and 20 minutes

[1] THE LANCET, Feb. 25th, 1899, p. 505.

and the boy at its conclusion, though very feeble, was warm, and there was a fair radial pulse. He rallied from the anæsthetic and was doing well until four hours after the operation, when he vomited some bilious fluid; this was followed by sudden collapse and some blood was noticed in the dressings. He died almost immediately.

Necropsy.—At the post-mortem examination, which was made 24 hours after death, about two ounces of blood-clot were found in the right side of the abdomen and there was a clot of the size of a hen's egg in the abdominal wall at the lower angle of the wound. On dissection the end of the deep epigastric artery was found from which the ligature had slipped. The perforation which had been sewn up was found to be watertight; there were several ulcers from which the sloughs had separated in the lower end of the ileum, and three higher up with the sloughs *in situ*. There was no other perforation and there was no other ulcer which appeared to be likely to have perforated subsequently. The tracheotomy wound was through the first two rings of the trachea in the middle line; the right arytenoid cartilage was represented by a few fragments in an abscess cavity which involved the right ary-epiglottic fold and also extended across the middle line posteriorly to the left arytenoid region for a space of a quarter of an inch. The whole cavity would have held about two drachms of pus, though it was quite empty at the necropsy. There was no sign of ulceration in the rest of the larynx.

Remarks by Dr. GORDON.—The points of interest in this case are many. Perichondritis laryngis is rare if attention is paid to the condition of the mouth; this, which I regard as a most important point in the treatment of enteric fever, consists in extracting all carious teeth on admission and in subsequently having the mouth swabbed and the teeth brushed with a solution of peroxide of hydrogen and bicarbonate of soda. When perichondritis does occur it almost always suppurates. In this case the suddenness of the onset is remarkable; to open the abscess intra-laryngeally would have been impossible without a preliminary tracheotomy, the distress was too great; afterwards the abscess burst of its own accord.

With regard to the abdominal condition the diagnosis of perforation was able to be made early—certainly in the first 12 hours—owing to the very marked disappearance of the liver dulness; and it is interesting that the perhaps too classical signs—collapse, abdominal pain, and sudden fall of temperature—were all absent. It was fortunate that the perforated ulcer presented itself almost immediately, so that no prolonged exploration, with its attendant risk of causing additional perforation, was necessary.

It is, I take it, uncertain whether cases of perforation ever recover without operation, though I believe that such recoveries are more probably cases of peritonitis, apart from perforation of sudden onset. If a diagnosis can be made in the first 24 hours, and the patient is not obviously moribund, I believe that it is best to open the abdomen in the right linea semilunaris at once; if, on opening the peritoneum, there is no escape of gas or evidence of peritonitis the incision can be at once closed, but if a perforation can be found without prolonged exploration, and sewn up, the chances of recovery are better with the operation than with rest and opium alone.

The immediate cause of death in this case was, I believe, the slipping of the ligature in the motion of the abdominal wall caused by the vomiting. It is impossible to say whether, after six weeks' acute illness, the patient would have otherwise recovered, but at all events one more case is added to those in which the condition on opening the abdomen was found to be a surgically hopeful one.

For permission to publish this case I am indebted to the courtesy of Dr. R. A. Birdwood, medical superintendent of the hospital.

NORTH LONSDALE HOSPITAL, BARROW-IN-FURNESS.

A CASE OF FRACTURE OF THE PELVIS WITH INJURY TO THE BLADDER AND PELVIC VESSELS.

(Under the care of Mr. P. L. BOOTH.)

THE close apposition of the urethra and bladder to the pubic bones, and the frequency with which the rami of these bones suffer in fracture of the pelvis by a compressing force, serve to explain the injury of one or both of these organs so commonly met with. The hydrostatic test of the soundness of the bladder is usually considered to be fairly trustworthy, but it can certainly not be relied on for minute or valvular punctures as in the case recorded below. The injection of a few cubic inches of air seems to be more useful, for the free gas in the peritoneum is readily recognisable, but Mr. Walsham has recorded one case[1] in which profound collapse occurred immediately after the injection. In all cases extra-peritoneal rupture of the bladder is more difficult to recognise than the intra-peritoneal form. For the notes of the case we are indebted to Dr. H. H. Broome, house surgeon.

A man, aged 36 years, was assisting to unload a cart full of clay when suddenly a large mass, weighing several hundredweights, fell and struck him in the back. He was stooping at the time and the force of the blow knocked him forwards on to his abdomen, where he remained for several minutes buried, with the exception of his head and legs, beneath the mass. He was dug out and taken to the North Lonsdale Hospital, Barrow-in-Furness, where he was admitted as an in-patient at 5 P.M. on Dec. 10th, 1900.

On admission the patient was in a condition of extreme collapse with a feeble running pulse. He complained of pain in the right and left loins, and shortly after being placed in bed he voluntarily passed seven ounces of almost pure blood. He stated that he urinated about one hour before the accident.

On examination it was found that there was great tenderness in the right and left loins and also in the right groin. There was pain on pressing on the anterior superior iliac spines and also on pressing on the pubic symphysis, but no crepitus was elicited and no irregularity in the outline of the ischio-pubic arch or horizontal ramus could be made out. There was no injury to the spinal column or cord. A catheter passed easily into the bladder and two ounces of blood mixed with urine were drawn off. No irregularity could be felt in the wall of the bladder and the point of the instrument could not be made out through the anterior abdominal wall. The bladder was then distended with 14 ounces of boric solution and rose above the symphysis, giving rise on percussion to a corresponding dull area in the hypogastrium. On withdrawing the fluid exactly the same amount as was injected (14 ounces) was obtained and the dull area disappeared. There was no evidence of free fluid in the abdominal cavity. It was thought probable that one or both kidneys were injured, but as the collapse was so great it was decided not to explore. Ice-bags were applied to the loins and ergot was administered hypodermically every four hours.

On the morning of Dec. 11th the patient was still collapsed, with cold extremities and profuse clammy perspiration. The temperature was 100·1° F., the pulse was 140, and the respirations were 25 to the minute. There was tenderness to pressure in the hypogastrium and swelling and fulness were present in both loins. The patient was much troubled with retching but there was no actual vomiting. On catheterisation one ounce of bloody urine was withdrawn. In the afternoon at 3 o'clock he voluntarily passed one ounce of bloody urine and at night another ounce was withdrawn by the catheter. During the whole course of the day only three ounces of urine mixed with blood were obtained from the bladder. On the morning of the 12th the patient was profoundly collapsed; the pulse was 172, the temperature was 101·6°, and the respirations were 40. The extremities were cold, numb, and cyanosed. Death occurred at 10 50 A.M.

Necropsy.—At the post-mortem examination both horizontal rami of the pubic bones were found to be fractured at a distance of three-quarters of an inch from their junction with the body on either side. There was no displacement of the broken ends, as the ischio-pubic arch was intact, but several fragments were detached from the pelvic surface of the ramus, and on the right side two of these had penetrated the extra-peritoneal surface of the bladder, passing through the walls in an oblique direction. The space between the inferior surface of the bladder and the posterior surface of the symphysis was filled with a mass of blood-clot which passed backwards around the neck of the bladder to the posterior wall of the pelvis and thence extended upwards, behind the peritoneum on the posterior abdominal wall, as high as the posterior surface of the liver. This large clot passed up along the sides of the rectum, extended for

[1] The Transactions of the Royal Medical and Chirurgical Society, 1895.

some distance between the layers of the sigmoid mesocolon, completely surrounded both kidneys, and separated the layers of the mesentery of the small intestine for one or two inches. The bladder was small, firm, and contracted, and on passing the finger into it two spicules of bone could be felt projecting through the inferior wall. Both kidneys were absolutely uninjured though buried in clot which completely filled up the hilum extending even between the calices of the pelvis. The spleen and the rest of the abdominal viscera were free from injury, as also were the abdominal aorta and its main branches. It was impossible to make out the vessels from which this large amount of blood had escaped, but it seems probable that the fracture of the horizontal rami had caused rupture of the obturator vessels, the blood first filling the pelvis and then ascending beneath the peritoneum on the posterior abdominal wall.

Remarks by Dr. BROOME.—The above case may prove of interest from the difficulty of diagnosing the injury to the bladder. This was due to the nature of the injury, the inferior extra-peritoneal surface being obliquely perforated by two spicules of bone in such a manner as to render the apertures valvular so that they became tightly closed when the viscus was distended.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

Ischæmic Contracture.—Typhoid Fever.

A MEETING of this society was held on Jan. 28th, Mr. J. H. MORGAN, the President, being in the chair.

The CHAIRMAN referred to the irreparable loss that the nation had sustained since the last meeting of the society and proposed that the humble expression of the profound grief of the Council and Fellows and their extreme admiration of the many virtues of Her late Majesty should be forwarded through the proper channels and joined with an expression of their deepest sympathy to His Gracious Majesty King Edward VII.

Mr. EDMUND OWEN showed a man who, when living in the Transvaal, had sustained a Fracture of One of the Bones of the Left Forearm. He had been treated by splints and bandages. The latter were bound tightly and caused sloughing of the skin and loss of the nails. This was followed by the condition described by Volkmann as ischæmic myositis. In order to remedy the fixed flexion of the fingers and thumb Mr. Owen elongated the tendons and excised one inch of both bones of the forearm. The bones failed to reunite. Later he removed an additional portion of each bone and wired the ends together. In spite of every care non-union again resulted and the patient still had an almost useless hand. An account of the case is given in our "Mirror of Hospital Practice" this week.—Mr. F. C. WALLIS had experience of a similar case where the condition was attributable to an Esmarch's band having been used for one and a half hours during an operation.—Dr. WILLIAM HUNTER thought that the trophic disturbance probably began in the nerves rather than in the muscles.—The PRESIDENT referred to a case in which the ulnar nerve had been divided by a bullet in the present war. The patient, invalided home, was treated by freshening the ends and grafting in a portion of the sciatic nerve of a freshly-killed sheep. A return of nearly normal sensation had resulted and muscular power was beginning to return.—Mr. OWEN, in reply, said that in cases like the one which he had brought forward there was no localised nerve-lesion, so that from a practical point of view after milder measures had failed the only hope was in treating the effects of the fibrosis and shrinking of muscles.

Dr. F. J. SMITH then read a paper on the Treatment of Typhoid Fever which is printed *in extenso* on p. 312 of this issue.—Dr. SIDNEY PHILLIPS agreed that no routine treatment applied to all cases of typhoid fever. He was the first in this country to bring forward fatal cases of typhoid fever in which necropsies had shown that there had been no appreciable intestinal lesion. The stress of the disease might fall chiefly on the central nervous organs, the lungs, or the kidneys. Marked tremor, as Jenner had taught, was frequently associated with deep intestinal lesions, but it might also result independently from toxæmia or pyrexia. As to the dietary he would be guided rather by the patient's power of digestion than by the appetite. He had not found it necessary to cut down the amount of milk to two or three pints; if the condition of the digestion allowed, as much as five or six pints could be given. He doubted the propriety of giving solid food. For hæmorrhage he had in some cases given tincture of hamamelis with advantage; for this complication opium remained the chief resource, but its effects should be watched so that it did not produce tympanites. He had noticed that dilatation of the stomach was sometimes mistaken for tympanites. The latter was of grave augury and he attributed it to severe toxæmia. He agreed with Dr. Smith that the ambulant cases were the worst.—Dr. G. WASHINGTON ISAAC had been disappointed with the results of tepid sponging as a means of keeping down pyrexia.—Dr. CAMPBELL POPE suggested a trial of suprarenal extract in case of hæmorrhage.—Dr. WILLIAM HUNTER thought it impossible to gauge the extent of the intestinal ulceration, and it was therefore impossible to make this a criterion for choice of diet. The dangerous ulcers were due, he thought, to ordinary septic as distinguished from typhoid inflammation. Hence he agreed with Dr. Smith in valuing antiseptic treatment, and to this end he preferred calomel or perchloride to salol and other artificial antiseptics.—Dr. W. J. HADLEY thought that pulmonary lesions caused a fatal issue more frequently than intestinal complications. Heart failure was usually the result of toxæmia and pyrexia.—Dr. SMITH, in reply, said that he doubted whether solid food caused perforation. For pyrexia he had employed a bath at 100° F. with good results. The patient might remain in it as long as he liked. Constipation often kept up pyrexia and sulphate of soda he found to be the most generally useful remedy for this.

CLINICAL SOCIETY OF LONDON.

Exhibition of Patients and Apparatus.

A MEETING of this society was held on Jan. 25th, Mr. A. PEARCE GOULD, Vice-President, being in the chair.

The CHAIRMAN explained that the President, Sir R. Douglas Powell, who had discharged such important duties during the last illness of their late Sovereign, did not feel able to be present at the meeting. As this meeting was of a purely scientific character it had been decided to hold it. He felt, however, that the society could not meet without some expression of the personal loss which the members shared with the whole empire. The greatest monarch of modern times had been taken from them. During her reign great advances had been made in scientific medicine. The late Queen had always placed implicit confidence in her medical advisers. She was the first member of our Royal Family to be vaccinated. When prejudice was against the boon of anæsthesia being afforded to women in the hour of their greatest need she had availed herself of it and so removed the prejudice. To antiseptic surgery she had set her seal by granting to Lister the highest honour ever given to a medical man in this country. When the country was threatened with an epidemic of cholera Her late Majesty had taken the greatest interest in the measures successfully adopted against it under the guidance of the late Sir R. Thorne Thorne. He was sure that to these reflections all would add with devout feeling, "God save the King."

Mr. STANLEY BOYD showed a female patient, aged 31 years, on whom he had performed Oöphorectomy for Recurrent Mammary Cancer. In 1898 the left breast was removed for cancer. In 1900 operation for recurrence was contemplated and abandoned. In August, 1900, the patient was emaciated; there were recurrence in the scar, two outlying subcutaneous nodules, considerable enlargement of the left supra-clavicular and substerno-mastoid glands, the latter rather fixed. many large hard glands in the right axilla and a few in the right neck. The left vocal cord was paralysed and the patient had great difficulty in swallowing fluids. On August 8th Mr. Boyd performed double oöphorectomy. Improvement was rapid from the day of operation. On Sept. 8th the nodules and glands except one beneath the sterno-mastoid had disappeared. On Dec. 4th the voice and swallowing were normal. The patient had gained one and a half stones in weight.—Mr. CHARTERS SYMONDS remembered

the patient being under his care. Her condition then appeared to be hopeless and he fully confirmed Mr. Boyd's account of her improvement.—Mr. GEORGE EASTES asked whether Mr. Boyd would recommend the operation after the climacteric.—Mr. MCADAM ECCLES asked whether the ovaries were examined microscopically.—Mr. A. E. BARKER asked how much of the broad ligaments were removed with the ovaries.—Mr. BOYD, in reply, said that though after the climacteric the chances of success were less, still in otherwise hopeless cases the operation was justifiable. The ovaries were not examined histologically, but save for some simple cysts in one they had all appeared to be normal macroscopically. He had removed some of the tube with each ovary but had not made a point of getting close up to the uterus.

Mr. BRUCE CLARKE showed a case of Intractable Ulcer of the Forearm. The patient was a female, aged 20 years, who had had a lump on the back of the right forearm since she was 10 years old. In July, 1898, she fell and an ulcer formed. Since Oct. 6th, 1898, all kinds of local and general treatment had been tried, but the ulcer had gradually extended. In August, 1900, parts of the ulcer assumed a fungating character as of an epithelioma starting. Later glands in the axilla enlarged and were removed. The microscope gave negative results.—Mr. CHARTERS SYMONDS remembered a similar instance in the foot of a young woman in which recurrence took place after amputation of the foot. Amputation was done in the upper part of the leg and after that the patient remained well.—Mr. BRUCE CLARKE replied that before adopting extreme measures he would give a little longer time to see what could be done by good nursing.

Dr. H. D. ROLLESTON and Mr. S. VERE PEARSON showed a case of Generalised Scleroderma with Raynaud's Disease. The patient was a single woman, aged 22 years, who began to suffer from a combination of scleroderma and Raynaud's disease, which appeared to have come on simultaneously six and a half years ago. The left ear had recently become slightly affected. There was a family history of phthisis but no evidence of hereditary or acquired syphilis. There was scleroderma of the whole of the face. The skin was shiny and so stiff that the eyes could not be completely closed or the jaws sufficiently opened to allow the extraction of decayed teeth. The forearms to the lower parts of the arms were affected by scleroderma, which was advancing, and supination and pronation of the arms were interfered with. There was slight scleroderma on both infra-mammary regions and on the right back and flank. Changes caused by Raynaud's disease were present in both fingers and toes.

Dr. RISIEN RUSSELL showed a case of Myasthenia Gravis. The patient was a male, aged 57 years, who had good health until 11 months ago, when "blood-poisoning" from a septic condition of the right index finger took place. The finger was amputated. He had not been strong since and his legs and right hand used to swell during the first six weeks after he left the hospital. The weakness had been progressive for the past five months, at the beginning of which time his legs became rather suddenly weak one day when walking and he fell. After walking a short distance the legs began to feel numb and the knees gave way so that he fell, but on being assisted to rise he could resume walking. His eyelids dropped at times, he saw double on looking to the left, speech became more and more difficult and indistinct during a conversation, he experienced difficulty in chewing and in swallowing, and liquids had occasionally regurgitated through the nose; he was also liable to attacks of dyspnœa and faintness, sometimes quite apart from any exertion.

Mr. RUSHTON PARKER showed a man, aged 30 years, whose Left Elbow he had Excised three years ago for Ankylosis following injury. The result was an unusually strong joint with all the movements perfect. The internal condyle had not been removed.

Dr. F. E. BATTEN showed a case of Myositis. The patient was a man, aged 51 years. In 1889 he had an attack of right hemiplegia from which he gradually recovered under anti-syphilitic treatment. About the beginning of 1900 he woke up one morning and found his left shoulder swollen and painful and at the same time he lost power in the left leg (slight left hemiplegia). In a few days the left leg was well again, but since that time the left arm had gradually become rigid. Dr. Batten saw the patient first in September, 1900, and his condition was as follows. The left shoulder-joint was firmly fixed and all movement took place by rotation of the scapula. The arm was abducted and flexed at the elbow to a right angle. This, however, could be extended another 45 degrees. This extension seemed to give rise to very little pain. The hand could be moved freely. The muscles chiefly affected were the deltoid, supra- and infra-spinatus, triceps, pectoralis major, and biceps. The muscles were extremely hard and rigid but not tender. Voluntary power in the muscles was still good and passive movement gave rise to no pain.—Dr. J. A. MASTERS asked what evidence there was that the paralysis was of central origin.—Dr. H. A. CALEY asked if any bone was present in the hardened muscle.—Dr. BATTEN replied that a radiograph had been taken and it showed no osseous change. The central origin had been inferred from the patient's own account and from altered great-toe reflex.

Dr. LAURISTON SHAW showed a man, a ship's cook, aged 21 years, suffering from Aortic Regurgitation due to rupture of a healthy valve. In December, 1899, while at sea, he was lifting a heavy saucepan full of soup when the ship gave a sudden lurch and in trying to prevent the saucepan from upsetting the patient put forth all his strength and immediately felt a severe pain in his chest and became faint and collapsed. He remained in his berth for two days till the steamer reached Hamburg, where he was admitted to hospital and continued as a patient for seven months. On his return to England he presented himself for treatment at Guy's Hospital on account of dyspnœa, palpitation, and occasional cardiac pain, and was found to be suffering from aortic regurgitation.

Dr. A. M. GOSSAGE showed a case of Dextrocardia, probably Congenital. The patient was a woman, aged 46 years, a tailoress, who complained of weakness and palpitation on exertion. Ten years ago she had rheumatic fever. On examination the heart was found to be in the right thorax. The apex-beat was apparently in the fifth space internal to the right nipple. The superficial cardiac dulness extended up to the fourth costal cartilage and towards the left to the mid-line of the sternum. The liver dulness was in its normal position on the right side of the body, and the stomach seemed to be in the normal position on the left. The two sides of the thorax moved equally and neither side was contracted. No abnormality was found in the lungs by physical examination.

Dr. J. PORTER PARKINSON showed a case of Unusually Great Dilatation of the Heart. The patient was a man, aged 22 years, who had always been delicate, who had rheumatic fever when 12 years old, and had had two subsequent attacks. There were slight pulsation in the right jugular vein and pulsation to the right of the sternum and in the epigastrium. There was præcordial bulging; there were a rough presystolic and a blowing systolic murmur at the heart's apex which was in the fifth space in the mid-axillary line.—Dr. A. MORRISON thought that the apparent amount of cardiac dilatation might be increased by a rachitic kyphotic deformity of the chest.—Dr. WILLIAM EWART observed that the left auricle might be so greatly dilated that it projected on the right side of the heart.

Dr. NEWTON PITT showed a man, aged 32 years, suffering from Combined Sclerosis of the Spinal Cord. There was a history of syphilis. He was now completely anæsthetic and analgesic up to the knees and elbows and had complete loss of muscle sense. He was extremely ataxic in the hands and legs without wasting. There were headaches and internal strabismus of the right eye.—Dr. WILLIAM HUNTER suggested that the sclerosis might result from the transverse myelitis, the outcome of syphilis, and that alcoholism might account for some of the symptoms.

Dr. F. C. EVE showed a Simple Form of Electric Light and Bath. The apparatus consisted of three ordinary electric lamps of 32-candle power fixed on a wooden base and protected by a wire cage. It could be connected by a flexible wire with any domestic lampholder without risk of injuring wires or blowing fuses. The limb, apparatus, and a thermometer were all placed together inside a chamber formed of blankets thrown over an ordinary cradle. The temperature of the chamber rose in from 15 to 30 minutes to from 200° to 250° F., and the bath could be continued for from 30 to 60 minutes.

Dr. C. E. BEEVOR showed a case of Multiple Fibro-Neuromata or Recklinghausen's Disease. The patient was a girl, aged nine years, who had numerous small tumours scattered over the body. They were in the main subcutaneous and the skin could be moved freely over them. They were small and in chains like beads on a string. For the most part they lay in the course of nerve-trunks and

were tender when handled.—Dr. ROLLESTON said that a curious atrophy and pitting of the skin over the tumours in these cases had been observed. In the fully-developed form of Recklinghausen's disease pigmentation and molluscum fibrosum were present.—Dr. BEEVOR, in reply, said he had observed the symptoms referred to by Dr. Rolleston in this case, which he regarded as being in an early stage of the affection.

Dr. J. S. RICHARDS showed a man, aged 30 years, suffering from Chronic Symmetrical Swelling on the Upper Part of both Tendines Achillis. He had served for 12 years in the army and had lived much abroad. He had had ague and syphilis with gonorrhœa. Iodide had not reduced the swellings, which first appeared six years ago.

EPIDEMIOLOGICAL SOCIETY OF LONDON.

The Prevention of Water-borne Enteric Fever amongst Armies.

A MEETING of this society was held on Jan. 18th, Dr. PATRICK MANSON, C.M.G., F.R.S., the President, being in the chair, when Dr. LOUIS C. PARKES and Dr. S. RIDEAL, D Sc., communicated a paper upon a Suggested Method of Preventing Water-borne Enteric Fever amongst Armies in the Field, which was published in full in THE LANCET of Jan. 26th, p. 234.

In the discussion which followed Major W. G. MACPHERSON, R.A.M.C., said that the incidence of enteric fever amongst the troops in South Africa was not so great as amongst the United States troops encamped in the Southern States in 1898 or amongst the Prussians investing Metz. The five worst months in South Africa were from March to July, and during that time 5·8 per cent. of the average strength were admitted to hospital with enteric fever. During the five months the American troops were encamped 10·4 per cent. were admitted with "certain" enteric fever, 19·2 per cent. with certain and probable enteric fever. The worst two months in any place in South Africa were April and May at Bloemfontein. During these months 3·5 per cent. of the troops there were admitted with enteric fever. During the two months in which the Prussian army invested Metz 5·2 per cent. of the investing army were admitted according to his calculations. As regards the probability of lessening enteric fever in armies by sterilising drinking water, he pointed out that drinking water was not the paramount factor in the production and spread of the disease in campaigns. Troops constantly on the move seldom got seriously affected with enteric fever. The disease was essentially a disease of standing camps and the report of the board of medical officers appointed to investigate the origin of enteric fever in the American camps emphasised the fact that specific infection of latrines was the paramount factor, and that it was from the latrines by other agencies than water that the disease was spread. Although, therefore, he did not for a moment wish to minimise the necessity of providing a pure and disinfected water-supply, he doubted whether action in that direction would very greatly decrease the incidence of enteric fever in the field. As regards purifying water-supplies, chemical methods, as suggested by Dr. Parkes and Dr. Rideal, were well known, and he thought at one time these would prove the real solution of the difficulties met with in sterilising water during a campaign. He had already investigated at least five different methods—namely: (1) the German, or bromine method; (2) the Austrian, hypochlorite of lime; (3) the French, Lepeyrire's method, which consisted in carrying in a case fixed in the water-bottle a powder containing permanganate of potash, carbonate of sodium, carbonated lime, and alum; (4) the Belgian, Professor Bergé's method of evolving peroxide of chlorine by adding one or two drops of sulphuric acid to some crystals of chlorate of potash in a flask, and, by means of two tubes inserted through the cork, the one connected with the bucket of water and the other with a bicycle pump, pumping the gas into the water; and (5) the Indian, or permanganate of potash method. The first method was tried in the Soudan expedition of 1898 and did not prove suitable for use with the troops. Soldiers could not be expected individually to break a capsule of bromine into the water, wait five minutes, then add a soloid of hyposulphite of sodium and carbonate of sodium to remove the taste and colour of the bromine, and wait till that was effected before drinking. The hypochlorite of lime method was abandoned because the quantity required to sterilise would affect the taste of the water and because the reagent would not make up in convenient tabloid form. Permanganate of potash had been tried very extensively in India and also in South Africa and had been abandoned because it, too, did not destroy the bacillus typhosus. Professor Bergé's method was obviously not well adapted for individual use with troops in the field. Having had all these difficulties to face in connexion with chemical methods of disinfection the army was provided for the South African campaign with an excellent single-candle pump filter manufactured by the Berkefeld Filter Company. The filter was supplied to each unit of 100 men and filtered 34 pints in 10 minutes. It was known that difficulties would arise in using this filter when there was muddy water, but instructions were issued with each filter explaining these difficulties and stating how it should be used. He had reason to believe that where these instructions were carefully carried out or could be rigidly adhered to there was a very great measure of success. He welcomed, however, the suggestions and experiments of Dr. Parkes and Dr. Rideal as their chemical reagent might help the Army Medical Service to overcome the difficulties already experienced with regard to chemical methods of disinfection. He feared, however, that if it were made up in tabloid form, with a small quantity of adhesive material so that it might dissolve more rapidly, the tin of tabloids in the soldier's haversack would be converted into a tin of powder after the first day's march. The Berkefeld filter weighed 50 lb., and this would be a single issue for every 100 men; the tins of sodium bisulphite tabloids would mean an issue every fortnight or so of quantities weighing 25 lb. for every 100 men and would involve an enormous continuous supply of tabloids in the case of a large army in the field.

Major FIRTH, R.A.M.C., said that the bromine process had been found very successful and he doubted much whether it had been fairly tried on the Nile.

Major W. BABTIE, V.C., R.A.M.C., from long experience in India and South Africa was convinced that all methods were alike impracticable in the field. Men should be taught to control thirst as long as possible; but water was not the only cause, dust, flies, &c., being important factors.

Mr. WALTER PAKES insisted on the difference between experiments in the laboratory and the conditions of service in the field, and remarked that if men would not wait for filtration they would not for the action of chemicals.

Dr. HARFORD-BATTERSBY had been told by a friend in the Hospital Corps of the Imperial Yeomanry that though not mounted they carried with them on the march of sometimes 25 miles in a day 250 quarts, or over a quart per man, of Berkefeld filtered water, practising self-restraint, and drinking morning and evening only. Among 150 men, though in contact with the sick, they had but six cases, and these were very mild. The City Imperial Volunteers, so far as he knew, neither boiled nor filtered their water and suffered severely.

Captain BRAILEY, a medical man, though a combatant officer in the City Imperial Volunteers, believed that the soldier could be taught to use precautions, if made really to understand the danger of neglecting them, but it was useless to exercise restraint for hours and then drink polluted water. They had boiled their water when they had fuel, but often there was none to be had. He himself had fever. A company could carry a Berkefeld filter, but men scattered over the country could not, though they might each have a box of tabloids. The Imperial Yeomanry, even when obtaining their water by means of Abyssinian pumps, had suffered from enteric fever; the Boers had no latrines and infected dust was doubtless an active cause. He had no experience of acid sulphate of sodium as a steriliser, but with a little sulphuric acid it had been found useful in the treatment of dysentery.

The PRESIDENT had had no experience of military matters but much of human nature and doubted if men devoid of bacteriological and chemical knowledge would persevere in any practice requiring educated intelligence. He should like to know the relative incidence of enteric fever on the rank and file, the combatant, and the medical officers.

Dr. S. RIDEAL had great hopes of the British soldier of the future. The War Office admitted the failure in the field of filters and boiling so far as to try chemicals, but quicklime for the disinfection of excreta was obsolete and useless, whereas sodium bisulphate would be as efficacious for these

as for water. Sulphuric acid should be applied to enteric fæces and urine in the proportion of three-quarters of an ounce to five gallons of the polluted liquid. He thought that 0·06 gramme of bromine recommended by Major Macpherson for a litre of water was not quite enough, but a larger quantity not exceeding two grains of sodium or ammonium bromide, of which from 20 to 30 grains per diem was an ordinary medicinal dose, was not desirable for habitual use. Sodium bisulphate had the advantage of being a "thirst quencher," but if preferred the taste could be neutralised by sodium bicarbonate.

Dr. LOUIS PARKES believed that, however important dust, flies, and soil pollution might be in the spread of the disease when introduced, the first cases mostly arose from water, and thought sterilising by filtering or boiling, though more certain than the method he proposed, was not available for scattered bodies of men. The tabloids would render the soldier independent, and though he might not understand the bacteriology of the disease he would certainly prefer drinking lemonade in place of more or less dirty water. It was not many years since civil medical men were equally hopeless as regards the prevention of enteric fever at home, though it was now looked on as one of the most preventable of diseases.

HUNTERIAN SOCIETY.

Exhibition of Cases.

A CLINICAL evening of this society was held on Jan. 9th, Dr. DUNDAS GRANT, the President, being in the chair.

Dr. SEQUEIRA showed three patients, a man and two women, who had suffered from Rodent Ulcer of the Face for 13, eight, and seven years respectively. These patients had been treated for 10 minutes a day with the x rays. The current employed was of from three to four ampères and the coil was one producing a 10 inch spark. The lamp was placed at a distance of six inches from the part affected. Care was taken to protect the normal skin from the action of the rays by means of lead foil. The results were very good. The ulcers healed up entirely, and finally the raised growing edge disappeared also. Dr. Sequeira strongly recommended the adoption of this method of treatment in all cases of rodent ulcer in which it was impossible completely to remove the growth with the knife. He had had 12 patients under treatment, of whom four were quite well, and in no case had the result been disappointing. It was too early to say anything about recurrence after this method of treatment, but even if it had to be resorted to again the patients were infinitely better off than with a progressive ulceration. In some of his cases Dr. Sequeira had carried on the treatment for several months without any danger to the patient. He believed that so short an exposure as he gave, limited to the growth itself, was not likely to cause the serious sloughing which had occasionally been met with in prolonged exposures.

Dr. JOHN W. OLIVER showed a case of Molluscum Fibrosum. The patient stated that he knew of no member of his family who had similar tumours—his age was 56 years, and at 17 years of age he first noticed their appearance; he thought that they had not increased in number but that they had increased in size. His general health had been good as a rule; as a boy he engaged in outdoor games such as cricket, but his intelligence was not good at present.

Dr. FREDERICK J. SMITH showed a man, 36 years of age, who felt a sudden pain in the right testicle three and a half years ago while at work. The testicle rapidly swelled, but subsided in a few days with rest in bed; the swelling returned on two or three subsequent occasions, but each time the pain soon subsided, only leaving the testicle enlarged. There was no urethral discharge at any time and no history of syphilis. He thought the testis had increased somewhat in size during the last few months, but he had had no further attacks of pain in it. The right testicle and epididymis were enlarged to about the size of a goose's egg; in front there was a little fluctuation as though a small hydrocele were present, but at the back the organ was very hard and knobby as though there were several independent lumps of some neoplasm; the uppermost lump was quite isolated upwards and the spermatic cord itself seemed quite unaffected; testicular sensation was quite absent. Dr. Smith had no doubt that the case was one of tuberculous invasion. The testicle, he thought, was not malignant from the length of time the trouble had existed; it was not syphilitic because there was no history of syphilis and because the nodules were too isolated. He thought the testis ought to be removed.

Dr. SMITH also showed a man, 48 years of age, whose urine was loaded with sugar, notwithstanding which there was a complete absence of unusual thirst or polyuria. There were extensive consolidation and excavation of the upper half of the right lung, and the sugar was only discovered accidentally. The specific gravity of the urine was only 1022, and the quantity was never over two pints.

Dr. SMITH also showed a man, 42 years of age, who 14 months previously began to lose his voice and become hoarse, but had no pain. He had a slight cough at the time which had during the last year grown worse rather than better; he had also lost a little flesh and become somewhat short of breath but had not experienced any other symptoms. On admission examination of his lungs gave absolutely negative results, but the laryngoscope showed extensive ulceration of the left cord with warty nodules on it which were undoubtedly tuberculous in origin. Bacteriological examination of the sputum revealed large numbers of tubercle bacilli, so that the diagnosis was rendered a certainty. The chief point of interest lay in the advanced condition of the laryngeal mischief, while that in the lungs still showed little or no evidence of its presence. The larynx was being treated with lactic acid with considerable benefit to the patient.

Dr. ARTHUR DAVIES, Mr. J. H. TARGETT, and the PRESIDENT discussed the cases.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.

Exhibition of Cases.—Chronic Interstitial Nephritis.—Irregularity of the Teeth in Children.

AN ordinary meeting of this society was held on Jan. 18th at the East London Hospital for Children, Shadwell, E., Dr. DAWSON WILLIAMS being in the chair.

Dr. H. MORLEY FLETCHER showed a case of Myosotis Ossificans in a boy, aged nine years, who had suffered for two years from increasing stiffness of the arms and shoulders. There was no history of injury. The muscles of the neck, the shoulders, the upper arms, and one rectus abdominalis contained extensive bony masses. Both great toes were small (microdactyly) and in each the terminal joint was ankylosed. There were exostoses on the bones of the head, on the hand, and on the tibiæ.—Mr. F. C. ABBOTT, Dr. PERCY LEWIS, Dr. EDMUND CAUTLEY, Mr. R. CLEMENT LUCAS, and the CHAIRMAN discussed the case, and Dr. FLETCHER replied.

Dr. FLETCHER also showed a boy, aged 11 years, who exhibited some Anomalous Nervous Symptoms, such as listlessness, urinary incontinence, unsteady gait, dragging of the right leg, obesity, halting speech, nystagmus, post-neuritic optic atrophy, intension tremor of the arms, increased knee-jerks, and distinct incoördination of the lower extremities. Dr. Fletcher considered that the diagnosis lay between disseminate sclerosis and cerebral tumour and was inclined to think that the former was the more probable explanation of the condition.—Dr. G. A. SUTHERLAND inquired as to the condition of the thyroid and the state of the temperature.—Mr. SYDNEY STEPHENSON asked whether the visual fields had been examined and if so whether any alteration had been noted.—Dr. FLETCHER BEACH suggested that thyroid extract should be administered.—Dr. LEONARD G. GUTHRIE thought that the case might be an instance of Little's disease or of Friedreich's disease.—Dr. FLETCHER, in reply, said that the child's obesity precluded any very careful examination of the thyroid. The temperature was normal. The fields of vision had not been taken. The patient had been treated for two months with iodide of potassium, but he would now try thyroid extract.

Mr. H. BETHAM ROBINSON showed a boy, aged four years, suffering from Multiple Arthritis of two years' duration. The evidence, he thought, pointed to the case belonging to the rheumatic group; it especially resembled the form produced by gonorrhœa.—Dr. C. W. CHAPMAN suggested that an injudicious diet combined with stimulants might be the cause.—Dr. A. ERNEST SANSOM said that the case looked to him like osteo-arthritis, possibly connected with syphilis.—

Dr. CAUTLEY inclined to the view that it was an instance of gonorrhœal arthritis and not one of osteo-arthritis.

Mr. ROBINSON also exhibited a patient, aged four years, with Congenital Lymphangiectasis of the Tongue. The mucous membrane of the tongue was much thickened and exhibited clear vesicles. There was no macroglossia. The lower lip showed a "port-wine" discolouration.

Mr. ROBINSON also showed an infant with Curious Congenital Cicatrices over the Left Femur and Both Tibiæ and Fibulæ with Thickening of the Underlying Bone. He thought the cause might be connected with some abnormal intra-uterine pressure or bands.—Mr. ABBOTT thought that the child had had fracture of the femur in utero, probably compound, and that the other scars were due to pressure.—Mr. LUCAS thought that one condition, perhaps compound fracture, might account for all the changes. It looked, in the present case, as if at an early period there had been a compound fracture of the tibia, the fibula, and the femur.—Mr. ROBINSON, in reply, pointed out that the symmetry of the lesions was dead against the fracture theory.

Dr. E. G. GRAHAM LITTLE showed a case of Congenital Imbecility in a child associated with abnormal development of subcutaneous fat. The patient had greatly improved under the administration of thyroid extract and the case probably belonged to the cretinoid class, though some of the characteristic features were lacking.—Dr. BEACH asked particulars as to family history and suggested that the child should be sent to be educated to one of the special schools established by the London School Board.—Dr. CHAPMAN urged that in such children, when allowed to walk about, the bones often yielded under the weight of the body.

Dr. LITTLE also showed a case of Pityriasis Rubra Pilaris of Devergie of 18 months' duration. A water-colour drawing illustrating the condition of the child when first seen and a microscopical preparation demonstrating the histology of the affection were also exhibited.

Mr. ABBOTT showed a boy, aged five years, from whom, seven months ago, he had Removed the Whole Lower Jaw for Total Necrosis (of unknown cause), leaving the periosteum. A complete ring of bone had now been thrown out, including a new condyle. The movements were perfect, the shape was good, and the appearance of the feature was excellent. A set of teeth were to be fitted to the new jaw.—The CHAIRMAN, Dr. CHAPMAN, and Mr. P. SIDNEY SPOKES discussed the case, and Mr. ABBOTT replied.

Dr. GUTHRIE related a case of Chronic Interstitial Nephritis in a girl, aged seven years. The patient, a thin, stunted child, with marked bronzing of the skin, was admitted to hospital on Jan. 6th, 1893, on account of severe headaches, accompanied by vomiting, amaurosis, and vertigo, which had occurred every few days for two months. She had never had scarlet fever or dropsy. The left ventricle of the heart was hypertrophied, the pulse was of extremely high tension, and the radial and brachial arteries were thickened. The urine was copious (from two to three pints a day); its specific gravity was from 1006 to 1010, and it contained from one-twelfth to one-half albumin, and a few granular and hyaline casts. After admission the headaches and other symptoms continued, she wasted rapidly, and the heart increased in size. On the 17th she had two fits with loss of consciousness, rigidity, and convulsions almost entirely confined to the right side. On the 30th she had three more fits of similar character. During the eclamptic period the urine was normal in quantity, from 14 to 18 ounces only, but in the intervals the amount rose to as much as 106 ounces per diem. She became strange in manner on Feb. 4th. She had slight left-sided hemiplegia which had almost disappeared on the next day. She gradually became comatose and died on the 7th. She was never dropsical. On post-mortem examination the heart was found to be hypertrophied and dilated. There were two large hæmorrhages in the right central hemisphere. The arteries generally were thickened and the kidneys showed marked interstitial nephritis. Dr. Guthrie drew attention to the rarity of this disease in children. He had found records of eight similar cases in children between the ages of five and 14 years. The symptoms, course, and termination were precisely similar to those of granular kidney in adults. He supposed that the condition might date from an attack of acute interstitial nephritis in infancy and that syphilis, congenital or acquired, might be a frequent cause of granular kidney.—Dr. SUTHERLAND was not prepared to admit that all cases were due to syphilis.—Dr. SANSOM remarked upon the rarity of interstitial nephritis in children and said that in all reported cases there had been intracranial hæmorrhage. He laid stress upon the value of the cardio-vascular symptoms and deprecated diagnosis based exclusively upon the character of the urine.—Dr. GUTHRIE, in reply, said that syphilis, both congenital and acquired, might be a more frequent cause of so-called "granular kidney" than was generally supposed.

Mr. SPOKES made a communication upon the Irregularity of the Teeth in Children, which was, he said, a matter of more importance than was usually recognised. With respect to that particular irregularity which consisted in one or more of the upper front teeth being "bitten over" by the lower teeth he recommended that the misplaced tooth should be forcibly advanced in one operation with a suitable instrument and considered this a much better plan than the one usually adopted of making the child wear a vulcanite plate for some time. He showed models illustrating cases before and after treatment and also the instrument used.—The CHAIRMAN expressed the thanks of the society to Mr. Spokes for his interesting demonstration and the meeting then terminated.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.

Microscopical Demonstrations and Exhibition of Cases.—The Medico-Legal Aspect of Skiagraphy.—Gastric Ulcer Surgically Treated.—Gastric Fistula.

A MEETING of this society was held on Jan. 15th, Mr. F. FARROW, the President, being in the chair.

Dr. F. W. EURICH gave a Microscopical Demonstration.

Dr. JAMES KERR showed two cases of Operation for Disease of the Mastoid Antrum.

Dr. R. H. CROWLEY showed a child with Subcutaneous Rheumatic Nodules.

Dr. C. F. M. ALTHORP showed a child, aged seven years, with a large Cystic Tumour in the region of the Right Breast.

Dr. A. H. BAMPTON showed Crystals of Arsenious Acid obtained from Invert Sugar.

Dr. J. B. HALL read a paper on the Medico-legal Aspect of Skiagraphy. He pointed out that an expert, especially one with good anatomical knowledge, could produce in a skiagram almost any degree of deformity he chose. Whilst skiagraphy was certainly useful in some conditions the process was at the present time so bristling with fallacies that it could only be regarded as a scientific toy. It was most unfortunate that some medical writers had not restrained their enthusiasm and preserved a more judicial attitude towards skiagraphy. The public had come to believe that a skiagram was a representation analogous to a photograph, showing only what existed and nothing more. Skiagrams were being accepted in the law courts as indisputable evidence and without their accuracy being called into question. Mr. Hall urged that a skiagram should not be accepted as evidence without expert testimony to prove that the picture had been taken under such conditions as to exclude the possibility of fallacy. Under present conditions the skiagram was a dangerous weapon in the hands of unscrupulous persons and the profession should take steps to protect itself.

Dr. W. H. HORROCKS read notes of a case of Gastric Ulcer with Perforation. The patient was a woman, aged 25 years, who had been seized with severe abdominal pain while at her work in a factory. She was conveyed to her home in a car, a distance of two miles, and subsequently to the Bradford Royal Infirmary. She had suffered from time to time from dyspeptic symptoms, but had never had hæmatemesis. On admission five hours after the onset of the pain the pulse was 88, small and irregular, and the temperature was 96° F. The abdomen was not distended, but was immobile and tender on pressure. The hepatic dulness was not diminished. A median incision was made above the umbilicus and an ulcer was found on the anterior aspect of the stomach near the cardia and smaller curvature. There was extensive extravasation of gastric contents (particles of food and milky fluid). The perforation was closed by three rows of sutures and the peritoneal cavity was flushed out with sterilised water. A drain was inserted into the pelvis through a suprapubic incision and a gauze plug was carried from the wound down to the ulcer. The operation lasted

one hour and ten minutes. The patient made a good recovery.

Dr. H. J. CAMPBELL and Dr. T. JASON WOOD read notes of a case of Perforated Gastric Ulcer followed by the formation of a subphrenic abscess and associated with serous pleuritic effusion. The patient was a woman, aged 25 years, a weaver, who had suffered for two months from pain after food and loss of appetite. Three weeks before admission to hospital she had just sat down to a meal when she was seized with severe pain in the left hypochondrium and had to be carried to bed. She saw a medical man three days later who found her to be suffering from pleural effusion and removed a quantity of fluid on two occasions. On admission the patient was found to be very ill. She was restless and flushed and had a temperature of 103·8° F. There were signs of fluid at the left base. The heart's apex was in the third left space internal to the nipple line. The heart sounds were normal. The lower part of the abdomen was not distended and it moved with respiration. In the epigastric region there was a rounded swelling, rather prominent, which was indistinctly fluctuant, and over it the percussion note was hyper-resonant. At the lower border of this was a hard rounded edge which was tender and which extended from a little above the umbilicus to the left flank. There was a well-marked anvil note obtained over the resonant swelling. The operation was undertaken by Dr. Wood. After ether followed by chloroform had been given an exploring syringe was introduced into the seventh space in the posterior axillary line and some sanguineous serum was obtained. It was not thought advisable to remove the remainder of the fluid at this time. A two-inch incision was made a little below the xiphi-sternum. The peritoneum was found to be thickened and on opening it a quantity of gas escaped, followed by a pint or more of foul pus. The abscess cavity was well shut off by adhesions. The heart was felt beating in the roof of the cavity, the liver formed the floor and the costal parietes were felt to the left. The cavity was washed out with hot water and a large rubber drain was inserted. The temperature fell at once after the operation and the patient made an uninterrupted recovery and left the hospital at the end of a month. Four days after the abscess was incised 10 ounces of serum were withdrawn from the left pleural cavity.

Dr. ALTHORP read notes of a case of Gastric Fistula. The patient was a woman, aged 50 years, who for 15 months before admission had suffered from abdominal pain and vomiting. On examination she was pale and emaciated. The abdomen was flat. Just below and to the left of the umbilicus was a tender swelling, about three inches by two inches, in the abdominal wall, the further connexion of which could not be determined. In the course of a week an abscess pointed at this spot. An incision was made on Oct. 3rd, 1900, under an anæsthetic and a quantity of thin fœtid pus was evacuated. Even at this time it was not obvious what was the cause of the abscess. The wound in the abdominal wall did not heal and there was found after a time a second collection of pus rather to the left of the former incision. On Nov. 28th this was incised and was found to be rather deeper than the first abscess but outside the peritoneal cavity. In the course of three days the discharge from the second wound was found to consist largely of gastric contents. In a day or two practically all the food taken escaped by the fistula and it was thought that this indicated some stenosis of the pylorus. The patient was rapidly losing ground. On Dec. 7th the patient was put under ether. The stomach was washed out through the fistula which easily admitted the finger. The peritoneal cavity was opened by an incision above and to the right of the fistula and a broad pedicle, three inches by one and a half inches, was found passing from the stomach to the abdominal wall. The portion of the abdominal wall to which the stomach was adherent was isolated by an oval incision and sterilised gauze was inserted to protect the peritoneal cavity from being soiled. This portion of the abdominal wall was then cut away from the stomach. The fistula was then found to be the centre of a large ulcer on the greater curvature near the pylorus. There was no stenosis of the pylorus. The edges of the fistula were freshened and the opening was closed by three rows of silk sutures which, however, had to be passed through greatly indurated tissue. The omentum was drawn over the spot and was fixed there by several points of suture. The abdominal wound was closed by silkworm-gut sutures passing through the whole thickness. There was great collapse after the operation. Rectal feeding and subcutaneous injections of saline fluid were given with good effect. On the third day small doses of brandy and meat essence were given by the mouth. The patient died on the sixth day with symptoms pointing to pneumonia. At the necropsy pneumonia of the right lung was found. The abdominal wound was dry and there had been no escape of gastric contents into the peritoneal cavity. There was apparently no attempt at union in the stomach wound and probably had the patient survived a perigastric abscess would have formed. The pylorus was healthy and was not narrowed by the ulcer. There was no dilatation of the stomach. The ulcer was found to be as described at the operation. The omentum was thickened greatly so as to simulate malignant disease. The report of the microscopical examination showed that there was no evidence of carcinoma.

MIDLAND MEDICAL SOCIETY.—The fourth ordinary meeting of this society was held on Jan. 16th at the Birmingham Medical Institute, Mr. Jordan Lloyd, the President, being in the chair.—The following were elected members of the society: Dr. Violet E. R. Coghill, Dr. A. C. Farquharson, Dr. William Wright, Mr. A. E. Freer, and Mr. J. H. Bennett.—Dr. J. Douglas Stanley showed a man, aged 39 years, with Partial Paralysis of the Right Third Nerve and Right Hemiplegia. The patient contracted syphilis 15 years previously. About the beginning of November, 1900, he noticed some weakness of the right arm and leg and the face was a little drawn over to the left. Some weeks later he noticed that objects appeared double and that he could not get the right eye open. The pupil on the right side was smaller than the opposite and the superior rectus was paralysed. The condition was considered to be due to a double lesion, one involving the left internal capsule, the other in the substance of the right crus.—Mr. Lucas showed six feet of Gangrenous Intestine due to strangulation through a hole in the mesentery. The specimen was from a man, aged 29 years, who walked into the surgery of the Birmingham General Hospital on Oct. 4th, 1900. He had been feeling unwell for five days previously and on the preceding day had felt something suddenly "give way" in his abdomen. He had all the signs of acute strangulation. The abdomen was at once opened and about a pint of blood-stained fluid escaped. A large number of coils of gangrenous intestine were then seen and were found to be due to strangulation through a hole in the mesentery. The gangrenous intestine (six feet) was excised and the ends were united by Murphy's button and the abdomen was flushed with saline fluid. He did well for the first two days, but on the next day (Oct. 7th) he became collapsed and died. Post mortem peritonitis was found starting from the point of union of the intestine and due evidently to leakage. The points of interest were that a man with this enormous amount of gangrenous intestine could yet walk into the hospital, and that it could be excised without difficulty, and that he would in all probability have recovered had there been no leakage from the bowel.—Mr. George Heaton read notes of three recent cases of Successful Nephrectomy. The first was a case of right pyonephrosis following vaginal hysterectomy. The patient was a woman, aged 34 years, who three years before had had her uterus removed by vaginal hysterectomy. Symptoms of trouble in the right kidney commenced soon after the operation and had increased in severity since. On March 9th, 1900, an attempt was made to remove the kidney through the lumbar route. It was found to be impracticable owing to dense adhesions. In December abdominal nephrectomy was performed. The patient made a slow but good recovery. The second case was one of right hydronephrosis due to stricture of the ureter. Nephrectomy by the lumbar method was performed. A stricture was found one inch from the pelvis of the kidney through which a fine probe could be passed. A second stricture existed five inches lower down the ureter. Rapid and complete convalescence ensued. In the third case the patient was a youth, aged 17 years, who had had repeated severe attacks of Renal Hæmaturia and Pyuria. In March, 1897, the right kidney was explored for stone but none was found. In November, 1899, the kidney was again explored and a small caseating patch was found in its lower border. This was excised. The hæmaturia and discharge of pus still continued. Nephrectomy by the lumbar method was performed

on Dec. 7th, 1900. The kidney was firmly adherent to all the surrounding structures and was removed piecemeal. The patient made a good recovery. Mr. Heaton commented on the urea excretion in all these cases. In each case the urea excretion for the first few days after the nephrectomy was very much higher (in two cases double) than it had been before the operation.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—The annual meeting of this society was held at Manchester on Jan. 18th, when the following officers were elected for the year:—President: Dr. T. B. Grimsdale (Liverpool). Vice-Presidents: Dr. Gordon Black, Mr. J. E. Burton, Dr. E. T. Davies, Dr. T. A. Helme, Dr. J. W. Martin, Mr. J. Oakley, Mr. A. A. Payne, and Dr. D. Lloyd Roberts. Honorary treasurer: Mr. R. Favell. Honorary general secretary: Dr. E. O. Croft. Council: Dr. R. W. Beesley, Dr. H. Briggs, Dr. S. Buckley, Dr. T. C. Denby, Mr. W. Fingland, Dr. W. E. Fothergill, Dr. J. E. Garner, Dr. C. N. Gwynne, Dr. J. B. Hellier, Dr. J. Huskie, Mr. R. Thacker King, Dr. J. Lambert, Dr. F. P. B. McDonald, Dr. Ll. Morgan, Dr. S. S. Scott, Dr. A. W. Senior, Dr. W. J. Sinclair, Mr. R. Smailes, Mr. E. W. Thompson, Dr. W. K. Walls, Dr. Sinclair White, and Mr. C. J. Wright. Local secretaries: Dr. John Scott (Manchester), Dr. Arthur Wallace (Liverpool), Mr. W. Thompson (Leeds), and Mr. Sidney Barber (Sheffield).—Dr. A. Stookes (Liverpool) showed three specimens of Malformation of the Fœtus causing Dystocia.—Dr. J. B. Hellier (Leeds) showed two specimens of Uteri removed by Hysterectomy with retro-peritoneal treatment of the stump. In the first case there was a pyosalpinx on one side and a tubo-ovarian abscess on the other. In the other case the operation was performed on account of a rapid increase of the tumour after the menopause. Both patients made a good recovery.—Dr. W. E. Fothergill (Manchester) showed: 1. A Small Ovarian Cyst removed after an exploratory laparotomy in a case of menorrhagia which had persisted for five years in spite of treatment, including five curettings. The bleeding had not recurred. The endometrium removed by the last curetting showed glandular endometritis. 2. A microscopical section of a Growth clinically resembling Deciduoma Malignum; also sections of Decidual Tissue and of Chorionic Villi showing syncytium and Langerhan's layer.—Dr. Arnold W. W. Lea showed a specimen and sections of a Benign Adenoma of the Uterus. The patient, aged 40 years, had profuse menorrhagia and constant pelvic pain for three years following her last confinement. Curetting only gave temporary relief. The uterus was enlarged and adherent and there were tubo-ovarian swellings present. The cervix was divided and a small rounded tumour was felt growing from the fundus. A vaginal radical operation was performed, the uterus, ovaries, and tubes being removed. The patient made a rapid recovery. The section of the growth showed it to be a benign adenoma. The uterus showed chronic glandular endometritis, the right tube showed chronic interstitial salpingitis, and the left tube was converted into a hydrosalpinx. Both ovaries were cystic and there were many adhesions.—Dr. David Owen (Manchester) related a case in which labour had been impeded by a Perineo-Vaginal Fistula which also communicated with the rectum. The perineal aperture was in front of the sphincter ani. During labour while the head was distending the vulval aperture proper an arm became protruded through the fistula. The arm was replaced with difficulty and the head was guided forwards by the forceps. The perineum was lacerated, and this wound and also the fistula, the edges of which were pared, were brought together with sutures.—Dr. W. Walter (Manchester) related a case of Hysterectomy for Myoma of the Uterus. The uterus had become converted into a huge sac from the degeneration and suppuration of the growth so that the physical signs closely resembled those of an ovarian cyst. There were no constitutional symptoms of suppuration.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 17th, Dr. D. Burgess being in the chair.—Dr. R. Wiseman Cunningham showed a small collection of Indian Urinary Calculi.—Dr. Sinclair White showed a case of Extroversion of the Bladder.—Dr. W. T. Cocking showed a woman, aged 44 years, with an Aneurysmal Dilatation of the Right Facial Artery at its commencement. The patient was the subject of granular kidney, marked arterial degeneration, and double aortic murmur. She gave a history of an epileptic attack occurring monthly for the last five months. There was no history of syphilis or acute nephritis, but the patient had had scarlet fever in childhood. She had also had nine normal pregnancies.—Dr. W. S. Porter showed the patients in two cases of Peripheral Neuritis in Beer-drinkers, in one of whom—a woman—there had been considerable pigmentation of the trunk resembling that of Addison's disease, and arsenic had been detected in the beer which she had been drinking. Both of the patients had fortunately sought medical advice early, and under full doses of iodide of potassium, and latterly with the application of the constant current to the limbs, recovery with complete restoration of power seemed fairly assured.—Dr. Porter also showed a case of Ataxic Paraplegia. The patient denied syphilis and there was no definite evidence of it. He attributed his symptoms to an injury to the back eight years previously, but the spinal symptoms proper only commenced about three years ago. There was well-marked Argyll-Robertson pupil with myosis. The knee-jerks were present and there was no ankle-clonus. On admission Romberg's symptom was present and there was inability to walk along a given line, but in both these respects the patient's condition had much improved. The chief complaint was of a burning sensation round the lower part of the abdomen. There was great tenderness on pressure over the vertebral spines from the fourth dorsal downwards. There was no anæsthesia.—Dr. Godfrey Carter narrated particulars of a case of Patency of Meckel's Diverticulum. A primipara was delivered of a small, healthy-looking male child on Sept. 16th last. Before tying the cord it was noticed that it was inclosed in a delicate transparent membrane of about the consistency of the amnion in a funicular process, which extended from the abdominal margin of the umbilicus for a distance of about one inch up the cord. Its contents were dark and fluid. It was left unmolested and the ligature was applied one inch further up on healthy cord—that is, two inches from the umbilicus. On the following day this membranous pellicle had dissolved in part and caused the neighbourhood of the child's abdomen to be besmeared with a thin meconium-looking substance. More of this substance continued to be evacuated from the navel and in a few days it was evident that the discharge was fæcal. Gradual distension of the abdomen supervened and all the symptoms of acute intestinal obstruction with fæcal vomiting. Eight days after birth the child was apparently sinking; there had been no action of the bowels, though to the finger and to bougies the anus and rectum felt normal. Enormously distended coils of bowel could be seen through the thinned abdominal walls. Laparotomy was advised and refused. On the tenth day the bowels began to move slightly and soon moved more copiously, abdominal distension subsided, and vomiting ceased. The child seemed fully to recover and the discharge from the umbilicus ceased. Three months later word was brought that the child had died after four days' illness, "the bowels having come out of the navel."

PLAISTOW AND CANNING TOWN MEDICAL PROTECTION AND MEDICO-ETHICAL SOCIETY.—A meeting of this society was held at the Town Hall, Barking-road, on Jan. 18th, Mr. Percy Rose being in the chair.—After the formal business had been disposed of Dr. T. D. Lister opened a discussion on the Terminations of Tubercle Infection occurring in Childhood. After discussing the channels of infection, insisting upon the importance of the air and food passages, especially mentioning the tonsils and subsequent lymph gland tuberculosis, Dr. Lister went on to say that a large number of cases of tubercle infection remaining undiscovered probably recovered completely, but that, clinically, cases presenting undoubted symptoms were liable to early fatal termination from extension or dissemination. The greatest factors of a fatal termination were dose and environment, the former largely depending upon the latter. There was an increasing consensus of opinion against hereditary predisposition. He instanced two cases of healed glandular and general tuberculosis in infants who had died from other causes at 15 and 18 months. In each the number of healed calcified tubercles and glands was small. It was impossible to say why the process had been arrested in these instances, one presenting strong tuberculous family history, or, as he preferred to call it, family infection. Dr. Lister then spoke briefly of the varieties of fatal terminations as observed clinically and of the importance of early diagnosis in mediastinal tubercle. He called attention to Dr. Hugh Walsham's work with the

Roentgen rays, showing a beautiful series of photographs kindly lent by Dr. Walsham, and preparations of mediastinal tuberculosis from the post-mortem room of the East London Hospital for Children at Shadwell. He made some comments on tissue proclivity for tuberculosis in which there seemed to be a general resistance but a local liability in certain sets of non-vital tissues, and concluded by expressing the view that researches with the object of obtaining an antitoxin for tubercle as a result of the activities of the tubercle bacillus itself would probably prove futile, but that possibly some other bio-chemical immunity and cure would eventually be found.—The discussion was continued by Dr. E. Hay, Mr. H. A. de B. Nelson, and the chairman.—A vote of thanks to Dr. Lister and to Dr. Walsham, to whom the society was indebted for the loan of a very valuable collection of x-ray photographs, brought the proceedings to a close.

FOLKESTONE MEDICAL SOCIETY.—The annual meeting of this society was held on Jan. 4th, when 24 members were present.—Dr. T. Eastes gave an account of the meeting of the deputation appointed by the society to interview the Sanitary Committee of the Town Council.—Dr. W. J. Tyson was unanimously elected President for the third year in succession. Dr. Eastes and Dr. J. Hackney were elected Vice-Presidents. Dr. E. G. Sworder was elected honorary secretary in place of Dr. A. E. Larking, to whom a unanimous vote of thanks was given for the efficient way in which he had carried out his duties during the past two years.—Dr. Tyson read a paper on "Ourselves" in which he referred to the subject of medical etiquette, saying that properly understood etiquette was a mutual benefit to the patient and to the medical attendant. He then spoke on the rights of patients and said that at times medical men were apt to forget them whilst thinking of their own rights. Dr. Tyson thought that in agitating too much for the correction of grievances they might lose some of the advantages they already possessed. At present medical men in this country enjoyed more liberty in their action than members of the profession on the continent. Their influence in the world must be, from the nature of their work, more of a private than of a public character, but this did not make it less powerful or less useful. Lastly, Dr. Tyson spoke of the many advantages of a medical society where all subjects related to medicine, sanitation, and social intercourse could be freely discussed.

IPSWICH CLINICAL SOCIETY.—The annual meeting of this society was held at the Ipswich and East Suffolk Hospital on Jan. 10th, Mr. C. K. Mosely being in the chair. Mr. James Hossack was unanimously elected President for the forthcoming year.—Dr. W. W. Sinclair having resigned the honorary secretaryship, Dr. W. Alexander Gibb was elected in his place.—A vote of thanks was passed to the retiring president and secretary for their services during their terms of office.—A ballot being then held for the election of members of the council for the year the following members were elected:—Mr. Branford Edwards, Mr. J. R. Staddon, Dr. Fowler Ward, Dr. W. W. Sinclair, Dr. H. H. Brown, and Dr. G. Vincent.—The retiring President, Mr. C. K. Mosely, read a paper on Constipation and its Treatment.—A short discussion followed, in which Mr. Hossack, Dr. Fowler Ward, Mr. Staddon, Mr. Branford Edwards, Mr. H. B. Rygate, and Dr. Gibb joined.—Mr. Mosely then replied.—A vote of thanks was passed to Mr. Mosely for his paper.

CLINICAL SOCIETY OF MANCHESTER.—An ordinary meeting of this society was held on Jan. 15th, Mr. F. A. Southam, the President, being in the chair.—Dr. E. S. Reynolds read a paper on the Epidemic Arsenical Poisoning, which was illustrated by a series of lantern photographs.—Dr. Arnold W. W. Lea related a case of Pelvic Sarcoma with Chylous Ascites treated by Abdominal Section and Drainage. The patient was well four and a half years after the operation.

THE Royal College of Surgeons in Ireland has forwarded the following telegram of condolence to the Lord Chamberlain: "The Royal College of Surgeons in Ireland desires to offer to His Majesty the King its profound sympathy with him in his bereavement and to repeat to him the assurance of loyalty and devotion which the College tendered to our late Most Gracious Sovereign during her last visit to Ireland.—Thomas Myles, President; Lambert H. Ormsby, Vice-president."

Reviews and Notices of Books.

Encyclopædia Medica. Under the general editorship of CHALMERS WATSON, M.B., M.R.C.P. Edin. Vol. V. Herpes to Jaws. Edinburgh: William Green and Sons. 1900. Pp. 536.

AMONGST the numerous contributions to this volume a few stand out as being especially worthy of notice, showing signs of careful preparation and a thorough knowledge of the subject on the part of the authors.

Foremost amongst these are the articles on Insanity, of which there are four. The section on Etiology is by Dr. A. R. Urquhart, physician superintendent to the Royal James Murray Asylum, Perth. His opening words indicate very clearly his views on the subject: "The causation of insanity is a highly complex question in detail, yet the broad fundamental facts may be narrowed to two comprehensive statements regarding heredity and stress. The inherent faulty nervous organisation of the individual and the stress of environment constitute the basis of our considerations in regard to this subject." Proceeding to enlarge on the above Dr. Urquhart shows that insanity is a retrogression, a dissolution. It is a reversal of evolution, and as such has its beginnings in the latest evolved structures and functions of the brain. His remarks on heredity are well worthy of study and demonstrate the care with which the author has worked up his material before arriving at his conclusions. The section on Pathology is written by Dr. W. Ford Robertson, director of the Laboratory of the Scottish Asylums Board, Edinburgh. The author discusses the nature of the morbid processes upon which insanity depends—that is to say, its pathogenesis and also its pathological anatomy. He criticises the views held by various authorities as to the effect of morbid conditions of the cerebral circulation on the mental faculties, holding that there are reasons for believing that cerebral hyperæmia in mental diseases is essentially only a part of a complex pathological process and that it is not in itself a primary cause of the cerebral disorder. Dr. G. R. Wilson, physician superintendent of the Mavisbank Asylum, Edinburgh, contributes the section on the Nature and Symptoms of Insanity, and gives an excellent account of the various clinical types of the disease, his remarks on the "insane diathesis" being specially interesting. The section on Treatment is by Dr. C. A. Mercier, lecturer on insanity at the Westminster Hospital Medical School.

The account of Hysteria is also divided into sections, each by a different author. Dr. Paul Sainton (chef de clinique adjoint à la Faculté de Médecine, Paris) is responsible for the chief section with the title, "General Article on Hysteria." The author naturally finds a difficulty in finding a definition of the disease, but aptly expresses himself thus: "Briefly, hysteria is a neurosis of many and perplexing varieties and of pyschic origin, whose disorders often simulate organic disease." In his description of the more prominent types the symptoms are grouped according to the systems or organs of which they indicate functional derangement. The story of the phenomena is arranged rather differently than we are accustomed to see in English text-books and is more interesting to read on that account. We are not informed whether we are presented with a translation or whether Dr. Sainton wrote in English, but the language employed is very clear and precise. We particularly commend the description of the condition known as "hysteria major," or "attack de la Salpêtrière." The different phases are arranged in the form of a table borrowed from Charcot and modified by Grasset. In describing the treatment of hysteria the author mentions hypnotism, but speaks of that method with some reserve. He says:

"Hypnotism is a valuable aid in the treatment of hysteria, but it must not be considered a panacea: numbers of hysterical patients are not hypnotisable. On the other hand, hypnotism itself is not without danger, for repeated *séances* act as a form of attack." The last remark is certainly interesting; French observers have more opportunities of observing the results of hypnotism than have physicians in this country and the recognition of the fact just referred to is of considerable importance. A short article by Dr. G. F. Still is also of interest as showing that hysteria is much commoner in children than is generally supposed, and it is a matter of no small moment that its frequency should be recognised, for in the early years of life environment, one of the most potent factors in hysteria, is easily modified and controlled; moreover, as the author points out, education in its widest sense can be carefully planned, even in its smallest minutiæ, so as to guard against neurotic tendencies at that period when they are most easily checked. The third contribution on hysteria is by Dr. A. G. Miller, consulting surgeon to the Royal Infirmary, Edinburgh. It is entitled "The Surgical Aspects of Hysteria," and by this the author understands those conditions "in which there is imagination, imitation, or exaggeration of pathological affections." The main difficulty is naturally one of diagnosis, for upon this the treatment depends, and Dr. Miller sums up his remarks thus: "If the case be hysterical treat the hysteria. If, on the other hand, you have any suspicion that even a trace of disease is present treat the local affection. It is the less dangerous mistake of the two." This is sound advice, but it is frequently most difficult to determine whether a joint affection, for example, is functional or organic or the two combined, that is to say, a functional exaggeration of a pathological condition.

There are several other contributions in this volume that deserve more lengthy notice than we can give. Mr. D'Arcy Power writes on Injuries of the Hip-joint, and Mr. Alexis Thompson on Diseases of the Hip-joint; both papers are excellent. Dr. J. Milne Bramwell contributes a well-written article on Hypnotism. It is not an easy subject to comment on, but the author is very moderate in his views and states at the outset that it is in functional nervous disorders that hypnotism yields its best results. Dr. A. Lockhart Gillespie is responsible for the broad subject of Indigestion. The amount of ground which he has to traverse is shown by his table of "classification," no less than 47 types being mentioned. The author explains that the "classification" is meant to indicate the mode of origin and the nature of the primary cause of the various chief types of indigestion, apart from the many forms in which more than one of these factors co-exist, and from those in which different symptoms are produced by similar causes.

Amongst other contributors to this volume are Dr. J. J. Pringle (Herpes and Ichthyosis), Dr. H. Ashby and Mr. G. A. Wright (Hydrocephalus), and Mr. W. Armstrong (Hydropathy). Professor Hans Buchner of Munich writes a valuable contribution on Immunity.

Taken as a whole this volume is a very good one, and will materially add to the value of the series of which the "Encyclopædia Medica" will be composed.

The Child: a Study in the Evolution of Man. By A. F. CHAMBERLAIN, M.A., Ph.D. With illustrations. The Contemporary Science Series. London: Walter Scott. 1900. Pp. i.-xii. and 495. Price 6*s*.

THIS book is an endeavour to present to the reader, on the one hand, data obtained by the study of children, and on the other hand certain ascertained facts concerning the evolution of man, with the object of affording explanation of the psychological development of the human race. The child is studied from an anthropological point of view mainly with regard to his psychological characters rather than as an object for physiological examination and description, while analogies between the child and the lower animals are suggested. A leading idea is often useful as a guide to observation and to the arrangement of other men's opinions as they may appear to afford mutual explanations and show the meaning of phenomena. Evidence can thus be arranged in support of, or in contravention of, an hypothesis. The doctrine of evolution in nature affords a leading idea which serves to connect the facts of recent observations on children.

In the book before us the headings of chapters, in the absence of a clear statement of the purpose of each, leave some doubt as to the nature of the problems suggested for demonstration. The method of the author appears, however, in the opening chapters on the Helplessness of Infancy and the meaning of Youth and Play, where a large number of opinions of philosophical interest are quoted and where the results to the perfect organism of early weakness in childhood are displayed in considerable detail. Prominence is given to the views of Mr. Fiske as to the social results of the protracted period of helplessness of childhood, leading to prolonged dependence of the offspring upon their parents. It is, however, a bold conclusion to say (p. 441) that this is nature's device to ensure the sociality of the race; but we readily agree with the dictum quoted from Schleiermacher: "Being a child must not hinder becoming a man; becoming a man must not hinder being a child," as a principle of wide application in educational training.

Signs, gestures, language, and the artistic expression of children are well described and their description forms one of the best sections of the work. Elementary sounds as met with among children of various nationalities and savage tribes are followed in their development into words to which a definite significance becomes attached. The record of children's vocabularies at successive ages, indicating mental growth and educational achievements, is a good piece of work; this subject is worthy of considerable extension and study. Many types of childhood are described on a psychological basis, with quotations from Siegert, Scholz, Sesshaft, and other authorities. But for the purposes of studying evolution we think a natural classification of children preferable. Methods of observation should be employed more analogous to those used in natural history, based upon physiological characteristics, added to which the mental status may be described. Anthropometric and physiognomical description (with the signs which indicate the general characters of brain development, such as spontaneity, coördination controlled through the senses, and the relations in which they appear), present types of children that may be recognised by any observer and student under variations of environment. Speaking of women and children Dr. Chamberlain quotes many facts in embryology and development of the body, and discusses the obscure question of the origin of sex without throwing much light on the subject. His descriptions of the differences between boys and girls are more instructive. Boys he shows to be more liable to all forms of irregular and subnormal development, while the persistency of tendencies in woman is said to be less than in man. The general conclusion arrived at is that under the present conditions of civilised life there is a tendency to "an approximation of man and woman, which represents the highest effort of the race to make the best of life in all its varieties and vicissitudes." This may be so: the latest British census shows a nearer equality in the duration of life in men and women, and a more equal number of illiterates, and in each case the improvement is to the advantage of women.

Throughout the book there are indications of the dominant idea of evolution as a guide to child-study.

The chapter entitled "The Child as Revealer of the Past" contains an epitome of the anatomical and physiological resemblances between animals and children, and discusses also the common points in their psychological development, and the explanations offered illustrate the similarity of natural processes in all living things. The suggestion arises that the methods of observation and description employed in natural history should be more strictly followed in studying evolution of the child. We cannot agree with the opinion quoted from Papillault that a growth in width of the cerebral lobes, exerting upon the skull a centrifugal pressure, keeps the two frontal lobes separated. It is now acknowledged by pathologists that defective brain development and microcephaly are frequently accompanied by premature ossification and other bony defects, but it is known that intra-cranial pressure is not the main factor in the case.

Infancy and childhood in their physiological aspects present problems of increasing interest and importance, in following which the application of the hypothesis of evolution in nature will prove a useful guide, enabling observers to correlate brain growth with psychological development, thus affording explanation of many phenomena and giving new knowledge. The book would have been more useful to the student of evolution had a table of contents and a fuller index being given.

Die Mechanik des Hörens und ihre Störungen. (*The Mechanics of Hearing and Their Disturbances.*) By Dr. Med. GUSTAV ZIMMERMANN, Dresden. Wiesbaden: J. F. Bergmann; Glasgow: F. Bauermeister. 1900. Pp. 110. With four Illustrations in the text.

THIS is an important addition to the literature of an intricate and difficult question. The justly celebrated work of Helmholtz is fairly familiar to Englishmen; but often, it is to be feared, the first casual glance at his work has comprised the knowledge obtained, as the abstruse mathematical calculations are beyond the reach of too large a number. Dr. Zimmermann has spared us any such slough of mathematical despond. To take one point that will be familiar to most, the description by Helmholtz of the cog action of the malleo-incudal articulation, undoubtedly correct in its main contentions, was by reason of the wording of the original reading tedious and far from clear. Dr. Zimmermann not only corrects Helmholtz, but at the same time renders the suggestions he puts forward clear, both by reason of the conciseness of his style and by means of the very excellent diagrams. This is a work that will repay study, and it appears to be one that might be reproduced with advantage in English.

Reports to the Malaria Committee of the Royal Society. Third series. London: Harrison and Sons. 1900. Pp. 45. Price 2*s*.

THIS publication contains several reports from observers who have been studying malarial fevers, more especially from the point of view of etiology. Dr. J. W. W. Stephens and Dr. S. R. Christopher present reports on the following subjects: "The Agglutination of Sperozites (preliminary note)"; "The Malarial Infection of Native Children"; "On the Destruction of Anopheles in Lagos"; "Note on Malarial Fever on Railways under Construction"; and "The Segregation of Europeans." The second-named is perhaps the most interesting—"The Malarial Infection of Native Children." In a previous report the authors had given the results of their examination of the blood of a number of natives, having regard mainly to the relation between the age of the children and the percentage of those infected; in the present report they consider rather the character of the infection itself and the variations that occur in it from time to time. In natives they consider that two conditions are met with: 1. A condition of infection of young children without febrile disturbance. Dr. Stephens and Dr. Christopher suggest that this may be due to a natural insusceptibility of the native African to malaria or to an immunity transmitted from the parent to the offspring. 2. A condition of active immunity in the adult native—an immunity acquired as the result of many years of infection with parasites. The immunity is accompanied by a progressively scantier development of parasites, and is quite comparable to that described by Pawlowsky for infection with micro-organisms.

Dr. C. W. Daniels contributes reports on Distribution of Anopheles in Lower Shire, Zambesi, and Chinde Rivers; Distribution of Anopheles Breeding-Grounds in the British East African Protectorate; Geographical Distribution of Anopheles of Africa; and Prophylaxis. In the last-named contribution many useful suggestions are made as to the protection of Europeans from malaria. The author considers that whilst it is impracticable to exterminate the anopheles, yet in certain localities the number of them could be greatly reduced by larvicides and attention to drainage. Nevertheless, the main reliance in many places must be placed on protection from the bites of mosquitoes, and Dr. Daniels proceeds to describe the most desirable forms of houses and mosquito-proof rooms and of mosquito nets. These reports form interesting reading and add considerably to our knowledge in the spread and prevention of malaria.

Die Arzneimittel Synthese auf Grundlage der Beziehungen zwischen Chemischem Aufbau und Wirkung: für Aerzte und Chemiker. Von Dr. SIGMUND FRANKEL, Docent für Medicinische Chemie an der Wiener Universität. (*Synthetic Remedies and the Foundation of their Relationship between Chemical Structure and Action: for Physicians and Chemists.* By Dr. SIGMUND FRANKEL, Lecturer on Medical Chemistry in Vienna University.) Berlin: Julius Springer. 1901. Pp. 576. Price 12 marks.

THIS volume deals with an important and fascinating subject. The architecture of molecules undoubtedly determines the nature and action of the group containing these molecules. In the case of well-defined substances it is probable that pharmacology and therapeutics will rest upon a more definite basis as it becomes known in what manner the constitution rather than the composition of these substances determines their action. Already we know that by varying the positions of a certain group of atoms in the molecule a new substance may be obtained which, though having precisely the same percentage composition and the same elements present, is quite different in its chemical and therapeutic action. In the work before us the author deals with this interesting aspect of constitution in relation to therapeutic action. The coal-tar industry has been the means of placing so many synthetic remedies at our disposal as to have rendered service at any rate in one direction—namely, of affording plenty of material for study and trial. Of course, synthetics are very limited in kind and in number in the inorganic world. The carbon compounds, however, appear to give rise to an endless series. The work is divided into a general part and a special part. In the former the author deals first with the action of inorganic and organic bodies. This is followed by a consideration of the action or of the part played by single atomic groups. The hydrocarbons of the paraffin series are next considered, and then the significance of the hydroxyl group, the alkyl groups, the cyanogen groups, the nitro groups, and so on. An interesting comparison is drawn between the action of ortho-, meta-, and para-derivatives. The second part relates to the consideration of well-known remedies, comprising antipyretics, alkaloids, hypnotics, antiseptics, and a few special substances like the glycerophosphates and ichthyol. The work is an excellent contribution on the subject and, as we have said, the question of

molecular constitution grows steadily in importance in its relation to the action of remedies. We should welcome an English translation.

Die Urogenitalmuskulatur des Dammes mit besonderer Berücksichtigung des Harnblasenverschlusses. (*The Urogenital Musculature of the Perineum, with Special Reference to Closure of the Bladder.*) By Dr. OTTO KALISCHER. With 39 Coloured Illustrations in the text and 33 Plates. Berlin: S. Karger. 1900. 8vo, pp. 184. Price 13*s.* 6*d.* net.

THIS book consists of an account of the author's researches upon the musculature of the pelvic floor, with special reference to the urethra and the sphincter vesicæ. It is divided into three parts. The first part deals with the striated muscle of the urethra in the male, the second part with the striated muscle of the urethra in the female, and the third part with the smooth musculature of the same structure in both the male and the female. The book is illustrated by 33 plates of sections and 39 coloured illustrations in the text. As the author points out, in spite of the large amount of work which has been done upon the subject the descriptions by different anatomists of the course of the muscles described in this work vary very greatly from one another. He attributes this to the fact that in many instances the conclusions have been drawn from macroscopic examinations alone and it is only of recent years that the microscope has been called in to help.

How inaccurate the results arrived at by naked-eye examination are likely to be is shown by the fact that in the sub-pubic angle it is often impossible without the aid of the microscope to distinguish between muscle tissue and connective tissue. Dr. Kalischer's own conclusions are mainly based upon the microscopic examination of series of sections taken through the urethra, bladder, and surrounding parts. As the arrangement of the musculature is much less complex and more distinct at an early age the author has devoted a large part of his work to a consideration of the conditions present as regards these particular muscles in the fœtus and young child. From a study of both sagittal and coronal sections the general arrangement of the various muscles of the urethra and perineum is described and then the anatomical relations and attachments of each muscle in considerable detail. A very copious summary of the literature is appended to each part and the whole book shows evidence of much research and hard work. The plates of the sections are well reproduced and clear and the diagrammatic illustrations in the text serve their purpose.

We have not space to consider Dr. Kalischer's conclusions in full, but we can recommend this monograph for perusal to anatomists and others interested in the musculature of this particular region.

LIBRARY TABLE.

Transactions of the Otological Society of the United Kingdom. Vol. I. First session 1899–1900. Edited by CHARLES A. BALLANCE, M.S. Lond., F.R.C.S. Eng., and ARTHUR H. CHEATLE, F.R.C.S. Eng.—The first volume of these transactions gives the rules and regulations of the new society and a list of officers and members. The report follows of the first meeting, which was held on Feb. 5th, 1900. At this meeting the address of the President, Sir William Dalby, on the Present Position of Aural Surgery, was delivered. The address appeared in full in our issue of Feb. 10th, 1900, and is here repeated. A paper by Dr. Urban Pritchard follows, upon Aseptic Purification of the Meatus and Adjacent Parts, both for operation and as a treatment in chronic middle-ear suppuration. Dr. William Milligan contributes some Notes of a Case of Cerebellar Abscess recently operated on. Dr. Dundas Grant and Mr. A. H. Cheatle contribute cases of Thrombosis of the Lateral Sinus, both operated upon without ligature of the internal jugular vein and in both of which recovery followed. Dr. Ernest Waggett contributes a case of Sequestration of the Cochlea and sundry specimens were shown. Perhaps the most striking case recorded is that dealt with in a paper by Mr. C. A. Ballance at the third ordinary meeting of the society on a case of Epithelial Grafting of the Labyrinth after Removal of the Semicircular Canals. The patient, a woman, aged 54 years, was completely deaf and so vertiginous that she could not walk across the room, yet after operation she recovered her hearing and heard exceedingly well. We congratulate the new society upon the interest of its first volume of published transactions.

Sewage Disposal Schemes: Table of Local Government Board Requirements. By S. H. ADAMS. York: Ben Johnson and Co. October, 1900. Price 2*s.* 6*d.*—Local authorities contemplating any extension of, or alterations to, existing arrangements for the sewage disposal of their districts will find Mr. Adams's Table exceedingly useful. Hitherto there has not been, so far as we are aware, any printed summary of these requirements obtainable that might guide local authorities to an opinion as to the desirability or otherwise of this or that system when applied to their individual case. The Table, though unofficial, is, we think, reliable; it also has the advantage of being clear and concise.

In Nature's Workshop. By GRANT ALLEN. London: George Newnes, Limited. 1901. Pp. 248. Price 3*s.* 6*d.*—This is another collection of the late Grant Allen's charming essays on natural history subjects and is a fit companion to his "Flash Lights on Nature." The present volume deals with among other subjects the devices by which animals, insects, and even the vegetable world protect themselves by mimicry. Here the reader will find something about those insects that really are nasty to eat and have adopted a dress which proclaims the fact to their enemies, and he will also learn about those that are not nasty but dress as if they were so. Others, such as, for instance, the caterpillar of the puss moth, look as if they would bite although they do not. Mr. Enock's illustrations are admirable, and the book is an excellent present for a boy taking an interest in nature. If he lives in the country he can see the creatures and plants alive, and if in London he can go to the Natural History Museum and see, at all events, the colour mimicry.

Vade Mecum de Thérapeutique Chirurgicale. Par le Dr. HENRI FISCHER. Paris: L. Boyer. Pp. 328. Price 4 fr. 50 c.—Dr. Fischer is evidently an enthusiast in his art. He points out in his preface how the field of surgery is widening every day and how necessary it is for all medical men, especially provincial practitioners, to keep their surgery green. The book does not pretend to give an account of all operations, but only, as the author says, of the more usual everyday kind. To this end he has endeavoured to give the practitioner a succinct account of things which it is indispensable that he should know. After an account of asepsis and antisepsis, of how to prepare dressings and get ready for an operation, Dr. Fischer goes on to consider anæsthetics and minor surgery. The various organs of the body are then taken in turn, beginning with the eyes, nose, and ears. Most of the operations on these organs, together with the conditions which make them necessary, are shortly and clearly described. The book should, we think, prove very useful as an *aide memoire*, but it rightly presupposes a sound surgical and medical training.

1. *The No Breakfast Plan and the Fasting Cure.* Pp. 208. Price 4*s.* net. 2. *The Radical Cure of Chronic Alcoholism.* Pp. 76. 2*s.* net. By RICHARD HOOKER DEWEY, M.D.

Published by the Author at Meadville, Pa., U.S.A. London: Gay and Bird. 1900.—Of these two little books the second is practically made up of excerpts from the first, put together in lecture style. Dr. Dewey's theory is, to put it briefly, that most people eat too much, that breakfast is a mistake, except apparently that he allows a cup of coffee, and that sick people should not eat or be fed until they wish to eat. Fasting, too, we gather will cure the craving for alcohol. There is no doubt that the majority of people eat too much. As for Dr. Dewey's "no breakfast" theory, it is, after all, not new, for in most southern countries, and even in northern France, but little more is taken on rising than a cup of coffee or chocolate. We are glad to see that Dr. Dewey lays stress upon a point which is too often forgotten—namely, that milk is mainly a food. True, he argues that milk is not a food for man after the coming of the molars, an idea with which we venture to disagree. As for the cases which Dr. Dewey cites of persons fasting entirely from food for 30 days or so, going about their work all the time and feeling very much better, we can only echo Dr. Shrady's remark on pages 133 and 134 about Mr. Rathbun's case, "Well, it's remarkable. But I sincerely hope Mr. Rathbun will have no imitators."

A Handbook of Sanitary Law for the Use of Candidates for Public Health Qualifications. By B. BURNETT HAM, D.P.H. Cantab., M.D. Brux., M.R.C.S. Eng., L.R.C.P. Lond. London: Ash and Co., Limited. Pp. 148. Price 2*s.* 6*d.*—In the second edition of this useful little work the author has added the Sale of Food and Drugs Act, 1899. The various subjects under the control of the sanitary authority are dealt with *seriatim*, the definition being followed by an explanation of legal procedure. Dr. Ham holds that sanitary law is the bugbear of the D.P.H. student. It may be so, but in our experience, though irksome, it is not regarded as comparable in difficulty with the science required for the diploma. This little work will prove a valuable addition to text-books on this subject.

We have received from Mr. H. J. Paterson, the surgical registrar, a copy of the *Surgical Report of the London Lock Hospital for 1899*. It contains several matters of interest. In the table in which the diseases of the in-patients are classified we see that there were 157 cases of syphilis, 73 cases of gonorrhœa, 16 cases of phagedæna, and 33 instances of "septic sores," 11 of which developed signs of syphilis while under observation. Of the 16 cases of phagedæna it is interesting to see that 11 at no time had any signs of syphilis. Only three deaths occurred in the hospital during the year; two were apparently cases of septic infection and one died from erysipelas. Notes are given of some important cases of early severe syphilis and of late syphilis. Apparently no printed report of the hospital is issued, as the copy we have received is typewritten. We do not remember having received any previous report and commend the diligence which has resulted in this.

Thoughts on Rome and Other Essays. By CONWAY SCOTT. Belfast: M'Caw, Stevenson, and Orr, Limited. 1900.—The author describes the essays from which the little book takes its title as consisting of ideas which floated through his brain while he was wandering through the Eternal City. It consists of a series of contrasts between the City of the Consuls and Cæsars and the Rome of modern times, the Rome in which the Circus Maximus, the most magnificent racecourse in the whole world, is replaced by smoky, grimy, dirty gas-works, continually belching forth a smoke which offends the eye and sickens the soul. The whirligig of time has caused some of the contrasts to be ludicrous and may afford food for meditation. "National Health," a term which the author uses in its widest significance, and "Sir Henry Lawrence" are the titles of other essays which may be read with interest.

Analytical Records

FROM

THE LANCET LABORATORY.

BETA-NAPHTHOL TABLOIDS.

(BURROUGHS, WELLCOME, AND CO., SNOW-HILL-BUILDINGS, LONDON, E.C.)

BETA-NAPHTHOL is a powerful antiseptic which has been used as an anti-fermentative throughout the alimentary tract. It has been used with advantage in diarrhœa and dysentery and in fermentative dyspepsia. It is also said to be useful in influenza. The tabloid contains three grains of beta-naphthol and this form of the drug is convenient for administration. The tabloid readily falls to powder after a few seconds' immersion in water.

MUNICH, PILSENER, AND LAGER BEERS (SCOTTISH BREWED).

(J. AND R. TENNENT, WELLPARK BREWERY, GLASGOW.)

These beers are brewed in Scotland and they are very excellent, wholesome, and palatable products. The Pilsener beer which is intended for export gave the following results on analysis: extractives, 4·58 per cent.; mineral matter, 0·19 per cent.; alcohol, by weight 4·00 per cent., by volume 5·00 per cent., equal to proof spirit 8·77 per cent. It is a very light beer and more heavily bittered than the other examples. The Munich beer gave the following results: extractives, 6·83 per cent.; mineral matter, 0·25 per cent.; alcohol, by weight 4·00 per cent., by volume 5·00 per cent., equal to proof spirit 8·77 per cent. This possesses the well-known characters of Munich beer. It is a dark-brown beer containing a high proportion of nutritive malt extractives, although its alcoholic strength is relatively low. The Lager beer gave the following results on analysis: extractives, 4·52 per cent.; mineral matter, 0·23 per cent.; alcohol, by weight 4·00 per cent., by volume 5·00 per cent., equal to proof spirit 8·77 per cent. This is an excellent, palatable beer, bright and in good condition. We could find no objectionable preservative in these beers and a careful search for metallic contamination, including arsenic, gave negative results. It is evident that beers can be produced in the United Kingdom (in Scotland in particular) equal in excellence to the well-known German beers, light in alcoholic strength, wholesome, and palatable.

SIDONAL.

(R. W. GREEFF AND CO., 20, EASTCHEAP, LONDON, E.C.)

Sidonal is one amongst the many new remedies proposed for gout. Chemically it is quinate of piperazine. Its preparation was suggested by the fact of the presence of a principle in fruits, the consumption of which has something to do with effecting a very marked reduction in the amount of uric acid. This principle has never been definitely identified, although a number known to exist in fruits have been suspected; but quinic acid, a frequent, although minor, constituent of fruits, is found to be powerful in reducing the output of uric acid. It would appear that pure quinic acid is not suitable for administration, and so it was combined with the organic base piperazine—itself a uric acid solvent—the product being quinate of piperazine or "sidonal." An interesting paper in the *Berliner Medicinische Wochenschrift*, March 12th, 1900, records some excellent results gained on its administration in chronic articular rheumatism, and other papers have appeared in the German journals from time to time on the favourable results obtained by the use of sidonal in preventing uric acid deposits and gout. "Sidonal" is said to be harmless. It

is a white crystalline powder, easily soluble in water, but only slightly in spirit. For administration it is made in tablet form, each containing seven and a half grains of the compound.

MAGGI'S TONIC BOUILLON.

(COSENZA AND CO., 95, WIGMORE-STREET, CAVENDISH-SQUARE, LONDON, W.)

The bouillon is contained in a gelatin cartridge and weighs just five grammes, so that six weigh a little over an ounce. The contents of each cartridge or capsule are to be dissolved in one-third of a pint of water and a palatable and nourishing soup is the result. In this instance the nutritious value is enhanced by the addition of an easily assimilable preparation of iron. According to our analysis the amount of iron is 1·44 per cent. calculated as ferric oxide. The proximate analysis of the bouillon gave the following results: moisture, 12·28 per cent.; mineral matter, 52·50 per cent.; and organic matters, 35·22 per cent. (consisting of the nutritious and stimulating principles and salts of meat). We have elsewhere shown that the bouillon is a real nutrient and the presence of an assimilable preparation of iron adds to its value for invalids and especially those whom a course of iron is calculated to benefit.

IRONOL.

(HANS HOFF, 29, NEW BRIDGE-STREET, LONDON, E.C.)

This preparation is described as "liqueur ironol" containing iron, 80 per cent. of which is said to be absorbed. In it the objectionable taste of iron salts is not noticeable, while it is without effect upon the teeth in the manner of ordinary salts of iron. On analysis it yielded the following results: sugary residue, 30·56 per cent.; mineral matter, 0·16 per cent.; oxide of iron (Fe_2O_3), 0·11 per cent. The "liqueur" contained no alcohol. On boiling with an alkali it yielded ammonia. We, therefore, find no novelty in the preparation and are not prepared to admit that it has any advantage over many of the ordinary preparations of iron used in medicine.

"KASSAVA."

(PROSSER DAVIS, 16, GLOUCESTER-ROAD, REGENT'S PARK, LONDON, N.W.)

This is a beverage which takes its name from the fact that it is brewed from cassava starch. It is a bright sparkling beverage, with pleasant and refreshing though somewhat sweet taste. It is agreeably bittered with hops. As our analysis shows it possesses only a very moderate alcoholic strength. The analysis was as follows: extractives, 5·52 per cent.; mineral matter, 0·05 per cent.; alcohol, by weight 0·53 per cent., by volume 0·66 per cent., equal to proof spirit 1·16 per cent. Since cassava meal is regarded to be highly nutritious it may be assumed that this beverage possesses nutritive properties also and it is distinctly palatable. It is undoubtedly wholesome and prepared on scientific lines. The starch is converted into sugar in a natural manner and without the intervention of objectionable substitutes. We found no preservatives in "Kassava," neither any trace of metallic contamination.

NEW TOILET SOAPS.

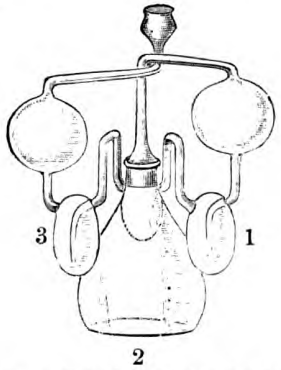
(E. COOK AND CO., EAST LONDON SOAP WORKS, BOW, LONDON, E.)

Under the names respectively of "Throne," "Frontier," and "Boracic" soaps we have received specimens from the above makers. We have already reported upon the excellence of the soaps manufactured by this firm. All are economical soaps because they contain a minimum of water and no foreign substances. Moreover, they contain the highest possible percentage of chemically pure soap without any trace of free alkali, according to the delicate tests we have tried. The boracic soap, of course, contains a mild and harmless antiseptic. The tablets were elegantly scented and are well adapted for toilet purposes and especially for sensitive skins.

New Inventions.

A NEW APPARATUS FOR USING GUTZEIT'S TEST FOR ARSENIC.

THE successful application of Gutzeit's test for arsenic to substances containing sulphites or other compounds liable to yield sulphuretted hydrogen demands extreme care. If the substance does not permit of the elimination of the interfering sulphur compounds, or, at least, the reduction in their quantity below a given point, recourse must be had to some other method for finding arsenic. In the case of articles like beer where the proportion of sulphurous bodies is comparatively small and also easily dissipated, being present as sulphites, the exercise of care and some experience of the conditions under which the test is best carried out will enable the operator to come to a safe conclusion. The use of permanganates, iodine, or bromine, for oxidising the sulphites is not commendable because these bodies are themselves liable to interfere with the test, particularly iodine and bromine, which are easily volatilised and stain the test paper. The suggestions for fixing the sulphuretted hydrogen before it reaches the test paper, by means of filter paper or cotton-wool soaked in lead subacetate solution, while very excellent, fall short of that certainty which one desires to attain when dealing with a substance so poisonous as arsenic; there is a doubt as to whether the whole of the gas has actually come into contact with the lead solution. There has also been a fear in my own mind lest the lead solution should arrest the arsenic. In order to settle this doubt I have made numerous experiments by passing arseniuretted hydrogen through a 5 per cent. solution of normal lead acetate, with the result that I am satisfied that there is no abstraction of arsenium from the gas. This led me to make use of such a solution for the arrest of the sulphuretted hydrogen in the carrying out of



Sketch of apparatus. Bulbs 1, 2, and 3 contain the lead solution. Bulb 2 is behind the flask.

Gutzeit's test. After subjecting the process to a series of severe experiments I find that I can use it with the greatest confidence providing that the lead acetate solution is distributed in three vessels so as to give an idea of the efficiency with which it is doing its work. I have therefore devised the apparatus as shown in the accompanying illustration. The gas is generated in the flask and traverses five bulbs, of which the three middle ones, 1, 2, 3, are half filled with 5 per cent. solution normal lead acetate; finally it reaches the small thistle head, covered with a filter paper cap bearing a dried drop of mercuric chloride solution (1 in 20). The arsenical liquid is mixed with from five cubic centimetres to 10 cubic centimetres of the purest re-distilled hydrochloric acid, and the volume is adjusted to a fixed quantity, say 40 cubic centimetres in a 150 cubic centimetre flask. When the bulbs have been charged with the lead

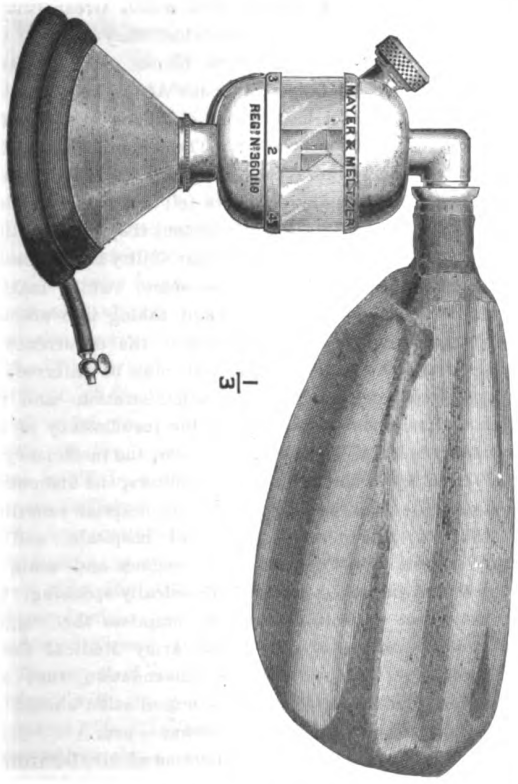
acetate solution and the test paper has been fixed in position a piece of rod zinc of definite size—say 15 millimetres by five millimetres—is introduced and the apparatus is put on one side for a greater or less time at the discretion of the analyst The third bulb containing the lead solution should not give signs of having its efficiency exhausted at the expiration of the test; this can be ascertained by comparison with the two preceding bulbs in which there will be, if sulphuretted hydrogen is present in the gas, a precipitate of lead sulphide.

For the purpose of making comparative estimations of minute quantities of arsenic it is imperative that the apparatus should be used of a standard size. Messrs. Baird and Tatlock are now making this apparatus of a uniform size and with a flask having a capacity of 150 cubic centimetres.

WILLIAM KIRKBY, F.L.S.,
Lecturer on Pharmacognosy, Owens College, Manchester.

A MODIFIED CLOVER'S INHALER.

THE accompanying illustration shows a modified form of Clover's inhaler made to my design by Messrs. Mayer and Meltzer, the chief points of which are as follows. The ether chamber is formed of a glass cylinder three inches in diameter, closed at either end by a light metal dome; this allows the operator to see the quantity of ether there at any time during administration. Ether need not be measured before being poured into the inhaler, as the inside of the lower dome is graduated and marked from half an ounce to



two ounces. The hot-water jacket, so very seldom used, is dispensed with, as if, owing to cold, the ether evaporation should be slow, it can always be quickened by the warmth of the hand round the ether chamber. The weight of the ether chamber is eight ounces as against 11½ ounces in the ordinary Clover inhaler and 16½ ounces in the Rumboll inhaler—an acceptable difference in a long operation.

FRANK H. ROSE, M.R.C.S. Eng., L.R.C.P. Lond.,
Anæsthetist to the Bristol Royal Hospital for Sick Children and Women.
Bristol.

THE BUILDINGS OF THE NEW ROYAL INFIRMARY AT GLASGOW.

THE following is the text of an open letter from the Glasgow Institute of Architects referred to in our leading columns and in our Glasgow correspondent's letter:—

To the Chairman and Managers of the Glasgow Royal Infirmary.

GENTLEMEN,—Recognising it to be your earnest desire that the infirmary when reconstructed should conform to the most modern standards of design in this class of building, and that the subscribers and the general public have a right to expect this, we, the Glasgow Institute of Architects, as a body of technical experts in such matters, feel it to be our duty to state that, in our opinion, this result will not be achieved if the reconstruction is proceeded with according to the plans selected by your sub-committee in the recent competition.

We attribute this failure, not to any lack of zeal on the part of your committee, or of ability on the part of the competing architects, but mainly to the manner in which the competition was initiated and carried through, and that in the following respects among others:—

1. That along with the printed conditions provided for the competition there were issued two sets of sketch plans as indicative of alternative arrangements which the sub-committee recommended, and which were stated in the accompanying report to be drawn by or under the direction of two members of the sub-committee respectively.

2. That a Jubilee Block to be situated on a particular part of the site was insisted upon as an integral part of the scheme.

The results of these elements in the conditions were:—

(*a*) That the competitors and the assessor were hampered in the exercise of their individual judgment as to the main points of importance in such a building—viz., the distribution of the various buildings with respect to each other for convenience of working and of all for the freest access of sun and air.

(*b*) That the competitors were placed in the invidious position that, in the event of the schemes recommended by the committee not proving themselves to be in accord with their judgment and experience, they were bound, in departing from them, to meet with disfavour from those influential members of the committee who would enter upon the examination of all the plans with minds necessarily biased in favour of those which they themselves had put forward, while reserving their position as judges.

(*c*) That as the result, the proposal that Plan E be accepted, which became the finding of the meeting, was moved by the gentleman who was actually the author of the scheme which was adopted and worked out in detail by this competitor.

3. That neither of the sketch plans issued are in accord with the present-day principles of hospital design, as might indeed be expected, seeing that their authors have not enjoyed the training which would qualify them as surgical, medical, or architectural experts; that, in fact, the plans are in many vital particulars inadequate and out-of-date, and that these faults are naturally displayed equally in the selected design, which is but an elaboration of one of them. A corroboration of this assertion with regard to the radical faultiness of the plans in question is furnished by the fact that six out of the 10 competing architects found it necessary, in spite of risk of possible consequences already alluded to, to entirely throw over the schemes furnished to them, and that among this number are found all the four architects from outside of Glasgow (two from London and two from Edinburgh), who were presumably invited specially on account of their knowledge of hospital design.

Such being the opinion of the institute after a very mature and careful consideration of the whole subject, we would most earnestly urge the managers, before committing themselves and the public to the erection of any portion of the building, as designed, to have the plans submitted to one or more independent hospital authorities of recognised and outstanding position for consideration and report.

Apart from the all-important question of the erection with the public funds of an entirely adequate and modern hospital, we, the Institute of Architects, feel it necessary to lodge a protest against the setting aside by the sub-committee, without any reason given, of the award of the professional assessor, Dr. Rowand Anderson—the more so that a simple majority of one was considered sufficient to overturn his judgment—as liable to prejudice the success, alike for promoters and architects, of future competitions in Glasgow. And we have further to state, that the erection of a Jubilee Block, such as is proposed, seven storeys high, and in the position selected, will, if proceeded with, dwarf and irretrievably injure for all time the external appearance of the Cathedral. The foregoing statements represent the unanimous finding of the Glasgow Institute of Architects, at a meeting specially called to consider a report of the council on the question, and as the matter is not only one of the greatest public importance but of extreme urgency, owing to the proposal of your sub-committee to proceed at once with the erection of the Northern Block, it has been communicated to the public press at the same time as it is submitted, with our earnest prayer for its consideration, to yourselves.

In name and on behalf of the Glasgow Institute of Architects,
C. J. MACLEAN, Secretary.

115, St. Vincent-street, Glasgow, Jan. 21st, 1901.

PRESENTATION.—At the Public Offices, Pentre, on Jan. 23rd, in the presence of a large gathering, Mr. Herbert Jones, L.R.C.S., L.A.H. Irel., D.P.H. Cantab., L.S.A., and Mrs. Jones were presented with a writing desk, a revolving chair, a case of silver knives and forks, a silver tea-tray and tea service, spoons and tureen, with a framed photograph of the officials of the Rhondda Urban District Council, as a mark of respect and esteem upon the occasion of Mr. Jones resigning the appointment of medical officer of health of the Rhondda Urban District.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 2, 1901.

The Royal Commission on South African Hospitals.

THE Report of the Royal Commission on the care and treatment of the sick and wounded during the South African campaign was published last week. It made its appearance at a time of deep gloom, when the most august and best beloved personage in the land—"the symbol of the unity of the British Empire," as Mr. BALFOUR truly said—was passing away. As might have been expected the report attracted little attention under such circumstances; but it is a very important public document about which we are bound to hear a good deal in the future. The subject has been taken up, though it can scarcely be said to have been yet discussed, by the daily press; yet so many excellent analyses of the report have appeared that we may fairly assume our readers to be substantially acquainted with its purport and scope. We do not here attempt to do more than deal with the report in a general way, reserving further and more detailed consideration for the immediate future.

The report consists of 71 folio pages and is signed by all the five Commissioners, and the impression that we have derived from our perusal of it is that it is able, comprehensive, and eminently fair. The minutes of evidence and appendix are published separately. The Commissioners have, as might have been expected from their position and reputation, conducted their investigations with great care and ability and, it need scarcely be said, in a perfectly impartial spirit. Their honest desire has been, as it seems to us, not only to collect all the evidence they could but to sift it in order to disentangle facts from fiction (and by fiction we mean all statements of an exaggerated kind having their origin in sentiment or self-interest) and to separate the relevant from the irrelevant. In this task they had the benefit of the legal guidance of their President, Sir ROBERT ROMER, one of the Lords Justices of the Court of Appeal. The Commissioners have, we think, succeeded in following the injunctions of OTHELLO: they have spoken of things as they are; nothing extenuating, nor setting down aught in malice. The constitution of the Commission would have been improved if some independent and experienced medical officer well acquainted with the regulations, practices, and military requirements of the service, who need not, of course, have been on the active list, had been appointed upon it, otherwise they seem to have shown themselves, as a body, capable of dealing with all the matter brought before them. It was particularly fortunate, seeing the important factor which transport played in the inquiry, that the general manager of a leading railway, Mr. FREDERICK HARRISON, was made a member of the Commission. We from the first suggested that some one having this technical knowledge should be appointed, for we knew the direction that much of the inquiry must take.

Briefly and summarily stated, what does the report amount to? The Commissioners record their judgment that, reviewing the campaign as a whole, it cannot be said that the medical or hospital arrangements have broken down or that there has been any scandal in the treatment of the sick and wounded, or any general or widespread neglect in regard to them and their requirements. They had to take count of and recognise the extreme difficulties connected with transport and military exigencies, although they do not admit that these, or the sudden influx of patients, were sufficient in themselves to account altogether for the state in which Nos. 8 and 9 of the military hospitals at Bloemfontein were in May, 1900. Taking the medical officers as a whole, the Commissioners find their conduct and capacity to deserve great praise. They extol their devotion and the unselfish way in which they have attended to the sick and wounded, often at the risk of life. Notwithstanding that the Royal Army Medical Corps, like any other large body of men, has its unfit or bad members, the Commissioners state that the proportion which these bear to the whole is very small. While finding that the medical staff and equipment were quite insufficient for such a war as that which Great Britain undertook against the Boer republics, they exempt the Director-General and his staff from blame, and as regards the Principal Medical Officer in South Africa and his staff they are declared to have done excellent and devoted work. The Commissioners add: "The organisation of the field and stationary and base hospitals for the colonial troops, the militia, and volunteers fell upon the medical staff in South Africa, and in our judgment they met the difficulties presented to them with singular ability and success." On the other hand, the Commissioners, while making many allowances for individuals and taking into account the difficulties of the campaign, admit the occurrence of mistakes—and in some instances, it may be inferred, of want of proper organisation and administration—and the existence of serious defects, such as the insufficiency of the Royal Army Medical Corps before the war, the inefficiency of a small minority of the army medical officers, the dishonesty and inadequate training of some of the hospital orderlies, the want of more nurses for fixed hospitals, and of sanitary officers and of ambulance wagons and tents of the latest and improved pattern. Practically speaking, the most important part of the report comprises the suggestions for the reform of the Royal Army Medical Corps and medical service and the recommendation that the constitution of this service and its organisation should be made the subject of inquiry when the war is over.

We said at the time of the publication of Mr. BURDETT-COUTTS'S letters in the *Times* that even if the substantial accuracy of his statements regarding the deplorable state of things at Bloemfontein and Kroonstadt were taken for granted, his deliberate allegation was a terrible one that the occurrences arose from causes which might have been foreseen, and which were, therefore, preventable. We believed, on the contrary, that the sudden and wholesale outbreak of enteric fever and the occurrences after Paardeberg, together

with the state of the hospitals, were in all probability mainly attributable to the exigencies of war and the deficiencies of transport—notably to the latter. The army had in fact outmarched its supplies. We find certain corroboration of that view in the report before us. The military history of the situation and the condition of the hospital arrangements at Bloemfontein are dealt with at some length, and the Commissioners declare, "the extent, suddenness, and virulence of the epidemic of enteric fever which occurred in the army at Bloemfontein could not, in our opinion, have been foreseen." The various plans of campaign, the rapid marches of the troops, and the capture and occupation of positions are matters of military concern. The fighting force had in any case to be supplied with rations and ammunition in order to protect themselves and the sick against attack and possible disaster. All this was, however, for purely military consideration, and the responsibility must, and quite rightly, rest with the general in supreme command. We have throughout our numerous articles upon the South African war laid great stress upon the fact that transport is nearly always *the* difficulty in war, and upon page after page the difficulty of transport is in some shape or other referred to, while the broad fact stands out that so long as the army was fighting its battles in the vicinity of available railway transport things went well with the medical arrangements.

When war became inevitable neither the nation, the Government, nor the military authorities had any idea of the formidable nature of the task before them. They did not then know of the extent of territory which was to become the theatre of war, of the fight with physical geography that was before us, nor did they realise that the enemy were armed with the latest weapons and were capable of adopting an altogether new system of tactics. The army does not exist for its medical service, but the medical service for the army. In any designed military scheme the medical requirements have to occupy a proportionate place. The army corps originally sent out to South Africa at the time of their going out more than exhausted the available strength of the Royal Army Medical Corps in this country. That corps was already undermanned calculated on the basis of the small force which it was considered at first would be necessary for the subjection of the Boers. It was entirely inadequate to the needs of the much larger army eventually despatched. The campaign in South Africa has been a unique experience in warfare. It has taught us more than any other war, perhaps, the primary importance of preparedness—of having a medical system, organisation, and service based upon a broad and comprehensive scheme.

The report of the Commissioners bristles with interesting points, with many of which, and particularly with those portions of it which contain practical suggestions and recommendations about military medical reorganisation and army hospital reforms, we shall deal hereafter in detail. We publish this week the suggestions made by the Commissioners for the remedying of certain defects in the Royal Army Medical Corps and think it fair in this connexion to remind our readers that Mr. BURDETT-COUTTS has disclaimed all intention of making reflections upon the *personnel* of the corps whose work he has described in his recent book as "magnificent and performed under superhuman difficulties which they never should have had to encounter."

The Buildings of the New Royal Infirmary at Glasgow.

WE have commented, not upon the design selected by the Jubilee Committee of the new buildings of the Glasgow Royal Infirmary, but upon the procedure of that committee. We need not again detail the unfortunate methods which the Jubilee Committee made use of in procuring designs for the new buildings and in making a choice therefrom, but we recur to the subject in the hope that a new policy will be adopted ere irremediable mischief is done. The committee appointed an expert assessor whose judgment they deliberately set aside, but this, it now appears, is not the only occasion when they have refused well-informed help. A letter was sent to the secretary of the Royal Infirmary so long ago as May 11th, 1899, signed by two medical men representing the medical and surgical staff of the infirmary, setting forth that the "tentative specification of general requirements" for the reconstruction of the infirmary, which had been submitted to the medical staff, was inadequate. The letter also expressed regret that "the representatives of the staff are not, as they had been led by their letter of invitation to suppose they would be, members of the advisory committee of the managers." The receipt of this letter was, so we are informed, never even acknowledged by the managers. Be that as it may, the advice of the medical men whose life-work is done within the walls of the infirmary was never sought or followed by the managers when entering upon the reconstruction of that infirmary.

A new feature has now been introduced into the controversy by reason of a communication sent by the Glasgow Institute of Architects to the chairman and managers of the Glasgow Royal Infirmary protesting against the reconstruction of the infirmary being proceeded with in accordance with the design selected by the Jubilee Committee. The Glasgow Institute of Architects, through their secretary, point out, firstly, that with the printed conditions for the competition two sketch plans were issued indicative of alternative arrangements recommended by the sub-committee, which plans were stated to be drawn by, or under the direction of, two members of the sub-committee respectively; and, secondly, that a Jubilee block was to form an integral part of the scheme. These conditions the Glasgow Institute of Architects consider to have hampered both the competitors and the assessor. The assessor was placed in the awkward position that he might have to find fault with a design exactly following the suggestions of the Jubilee Committee. The competitors, any and all of them, were tempted to sacrifice their convictions if they could not bring themselves to regard with favour the sketch plans of the Jubilee Committee. If it be correct, as the Glasgow Institute of Architects state, that the proposal to adopt the plan eventually was moved by the gentleman who was actually the author of the successful scheme, no criticism has as yet been passed that is severe enough to meet the circumstances. The

protest goes on to call attention to defects in the adopted design and concludes: "We would most earnestly urge the managers, before committing themselves and the public to the erection of any portion of the building as designed, to have the plans submitted to one or more independent hospital authorities of recognised and outstanding position for consideration and report." We echo the advice thus given to the managers and are sure that all who read the letter of protest of the Glasgow Institute of Architects, which will be found on p. 337 of this issue of THE LANCET, will do the same.

The plan for the reconstruction of the infirmary selected by the Jubilee Committee is by no means in accordance with the views of experts either from a medical or an architectural point of view. The essence of an infirmary is to be a place for the reception and proper treatment of the sick. Apparently, the plans selected by the committee do not fill these requirements in view of modern ideas on hygiene and sanitation, and the opinion of the medical officers of the infirmary has never been sought, so that the obvious way of avoiding trouble has not been taken. It is not too much, we think, to ask the Jubilee Committee and the managers of the Royal Infirmary to reconsider their position and to agree to the request of the Glasgow Institute of Architects to have the plans submitted to some independent authority. The new Royal Infirmary is not to be a temporary building; it is to be one of the permanent buildings of the city and to commemorate the long duration of the greatest reign in British history. If an inadequate building is erected money will be wasted, the treatment of the sick and needy of Glasgow will of necessity be inadequate, and the authorities, if so be that they persist in running counter to the advice of those who are most qualified to give an opinion, will incur, and rightly so, blame from their fellow citizens. The managers should pause before spending some quarter of a million of money and before entering upon what may be an irreparable mistake if they wish to be free from the charge of obstinacy which will inevitably be levelled against them if they persist in their present apparent attitude of being unwilling or unable to own that they have made a mistake.

Peripheral Neuritis of Arsenical and Alcoholic Origin.

THE recent epidemic outbreak of arsenical poisoning in beer-drinkers in the North of England and the Midland counties has given rise to many points of unusual interest. Some of these we have already referred to. In the paper which we have published by Dr. E. S. REYNOLDS[1] and which introduced a debate upon the epidemic at the Royal Medical and Chirurgical Society, a very minute description of the symptomatology of the outbreak will be found, together with some opportune remarks on "so-called alcoholic paralysis or neuritis." We have followed Dr. REYNOLDS'S example in placing the last phrase within inverted commas, for he remarks that for many years he has doubted whether ethylic alcohol *per se* does cause peripheral neuritis, and has felt more confirmed in this uncertainty each succeeding year. When the cases, therefore, in the recent epidemic became numerous he at once looked out for some other cause of the neuritis than alcohol. At first he could not find a satisfactory explanation, but he corroborated his previous idea that in the Manchester district alcoholic neuritis occurred only among beer-drinkers, not amongst pure spirit-drinkers. The occurrence of certain skin lesions, however, especially herpes zoster, speedily suggested arsenic as the cause of the neuritis and this was corroborated by chemical examination. Dr. REYNOLDS'S suggestion that ethylic alcohol is not capable of producing neuritis raises a point on which at present a definite opinion cannot be given. The etiology of "alcoholic neuritis" has not been so openly challenged before. It is worthy of note, however, that the views of various observers have undergone modification. At one time spirit-drinking was considered to be the commonest cause of "alcoholic paralysis," but, judging from observations made at the Manchester Royal Infirmary, it would seem that the disorder is quite as often brought on by excesses in beer. One of the principal distinctions between "alcoholic paralysis" on the one hand and "arsenical paralysis" on the other has been considered to be certain skin affections which have been recorded as characteristic of the latter. Dr. REYNOLDS draws attention to some of these, such as erythromelalgia, which was one of the commonest lesions in the recent outbreak; but, as we have already mentioned, it was the appearance of herpes zoster which gave Dr. REYNOLDS the key of the puzzle. When this lesion occurred without any other very definite symptoms he at first considered that he was dealing with "epidemic specific herpes," but when other signs of arsenic poisoning presented themselves the diagnosis was placed beyond doubt. Dr. REYNOLDS is further of opinion that arsenic causes herpes by a direct action on the posterior spinal ganglion, just as it acts directly on the motor and sensory nerve fibres. Dr. H. HEAD has suggested that arsenic is only a remote cause of herpes, inasmuch as it renders a person more liable to be attacked by specific herpes, but in reply to this Dr. REYNOLDS suggests that previous epidemics of so-called specific herpes may have really been due to arsenical poisoning. The various suggestions raised in Dr. REYNOLDS'S most interesting paper can only be answered by further clinical and chemical investigations.

In another paper, by Dr. ROBERT J. M. BUCHANAN,[2] attention is likewise drawn to the occurrence of herpes zoster and other skin lesions in cases of peripheral neuritis arising from drinking beer containing arsenic, and the characteristic pigmentation is also referred to. The series of cases Dr. BUCHANAN describes is an interesting one, and the connexion between the symptoms and the beer-drinking admits of no doubt. A further contribution to our knowledge of the subject has recently appeared in the shape of a book by Dr. T. N. KELYNACK, medical registrar of the Manchester Royal Infirmary, and Mr. WILLIAM KIRKBY, lecturer on Pharmacognosy in the Owens College, Manchester.[3] In connexion with our remarks on Dr. REYNOLDS'S paper it is interesting

[1] THE LANCET, Jan. 19th, 1901, p. 166.

[2] THE LANCET, Jan. 19th, 1901, p. 170.

[3] Arsenical Poisoning in Beer Drinkers, by T. N. Kelynack, M.D., M.R.C.P., Medical Registrar (late Pathologist), Manchester Royal Infirmary, and William Kirkby, F.L.S. 1901. London. Baillière, Tindall and Cox. Pp. 100. 16 Illustrations. Price 3s. 6d.

to note a passage in the introduction to this book, in which the authors make some comments on the nature of the alcoholic beverages which the patients confessed to having taken. Beer was almost invariably the drink to which the symptoms were ascribed—a few had confined themselvee to stout; but the important statement of the authors is that they were unable to meet with any evidence of arsenical poisoning in any persons who had limited themselves to the use of brandy or whisky. To this they add: "It is a remarkable fact that even in confirmed drinkers in this district [Manchester] who have restricted themselves, according to their own account, to spirit, peripheral neuritis is so rare that we are not prepared to substantiate a single case met with during recent years." After reading such statements as we have already referred to, all tending to throw doubt upon the power of alcohol to produce peripheral neuritis, it would be highly instructive if other observers would chronicle their experience. It seems rather a bold suggestion that arsenic has for a long period and generally existed in beer, without detection, in sufficient quantities to cause neuritis, yet that would seem to be implied. Dr. KELYNACK gives a good account of the symptoms encountered in the cases occurring in the recent epidemic, laying stress naturally on the manifestations in connexion with the cutaneous system and with the nervous system, the illustrations with regard to both classes being well chosen and executed. Pigmentation the author considers to constitute one of the most conspicuous and characteristic features, although it varies greatly both in intensity and extent, sometimes being so slight as to be readily overlooked, while in others it may be so deep and so general as to give to the patient the appearance of a mulatto. Dr. KELYNACK also states that in a number of cases which had been observed herpes developed as the earliest, and oftentimes the only definite, manifestation of arsenical poisoning.

Our knowledge of arsenical poisoning and of peripheral neuritis, especially in regard to its etiology, will yet receive great additions and the views hitherto held may be considerably changed; we therefore look forward with the greatest interest to the conclusions which will ultimately be arrived at, and towards these the contributions to which we have referred can only be considered as preliminary. The debate upon Dr. REYNOLDS'S important paper remains in abeyance at the Royal Medical and Chirurgical Society, but when it is resumed some interesting communications will be made. In the meantime fresh cases of arsenical poisoning are occasionally reported, though every precaution is now being taken by the purveyors of beer. The medical profession is everywhere alert to detect and record the symptoms, so that there is probability that some of the points in the story of epidemic poisoning by arsenic that are now confessedly obscure will ultimately be cleared up. It is possible also that the rôle played by arsenic in the production of certain of these cases of neuritis will be challenged. The small dose that is assumed to have caused fatal symptoms has been a difficulty in the minds of many observers, and the possibility of some other poisonous substance having found its way into beer has been widely recognised. In our columns this week (page 318) we print an interesting communication from Dr. F. W. TUNNICLIFFE and Dr. OTTO ROSENHEIM, F.C.S., who suggest the possibility of selenium being such a poisonous substance. Mr. VIPAN of Canterbury had previously called attention to the same possibility.

Annotations.

"Ne quid nimis."

THE COMMUNICATION CORD ON RAILWAY TRAINS.

FROM time to time some ghastly murder, or attempted murder, or outrage occurs in our railway trains, when the necessity of an efficient and easy means of communication between the passengers' compartment and the guard becomes emphasised. As long as our system of travelling on railways is not on the corridor principle it is certainly essential that the passengers should be protected by being able to communicate with other parts of the train. Recently a murder was committed on the London and South-Western Railway under circumstances that are too well known to need more than a few words of recapitulation. There were present in a third-class compartment three passengers—two men and a woman—all unknown to each other. The male passengers fell into conversation which resulted in one of them shooting the other with a revolver. The female passenger narrowly escaped with her life, receiving a bullet in her cheek. By pleading with the assailant she kept him quiet until the train drew up at Vauxhall, where he attempted to escape, but unsuccessfully. The lady's mind, it would appear, was too disturbed to allow her to think of pulling the bell communicating with the guard. It is probable that she did the best thing for herself and for the cause of justice by humouring the assassin. It is not likely that she would have been allowed unmolested to turn her back upon the murderer to pull the cord, which is certain to have been in some inaccessible place. There is not much confidence expressed by the travelling public in the means of communication commonly provided by the railway companies, and nobody can put them to the test without the risk of suffering a penalty. We do not suggest that the public should be free to try these means of communication merely out of curiosity. It must be admitted, however, that such a test would be the only good one and the only one that would give confidence, but, so far as we know, it is never applied. We think that the Board of Trade might easily have powers to test these means of communication in a practical way. Thus an inspector could be appointed whose duty it should be to travel on the various railway lines from time to time and use now and again these means of communication to see if they act in practice, and thus fulfil what is an essential requirement of travelling by the system of separate compartments. To some extent we are aware such practical inspection would be vexatious to the railway companies, but care could be taken to give the least trouble and the delay caused need not be serious. Of course, the inspector should be able to show that he had a right to pull up the train by virtue of his office under the Board of Trade. We believe that such an appointment would meet with the approval of the public. The result of the inspector's tour would be of interest. It is certain that he would fail to find any response on pulling the cord in many instances. There are the risks in the case of electric bells of the current failing and in the case of mechanical arrangements of neglect to connect the terminals. These things are due to the fact that it is not a matter of routine for the means of communication to be tested by the railway officials before a train starts on a long

journey. The appointment of a travelling inspector empowered by the Board of Trade to make surprise investigations would change this. Every railway company would be careful that such means of intercommunication as they provided were kept in regular efficiency. It would be the inspector's duty also to criticise the means of communication provided even when in working order. Some "cords" are so difficult to get at, or the directions given as to the proper way to pull them are so wordy, as to render them practically useless in an emergency. This would soon be altered.

THE ANNUAL REPORT OF THE LOCAL GOVERNMENT BOARD UPON THE METROPOLITAN WATER-SUPPLY.

MR. LONG, the President of the Local Government Board, having promised to bring in a Bill with regard to the metropolitan water-supply, will require all the assistance he can obtain from the Water Examiner appointed by the Local Government Board, if he is to obtain a grasp of the complicated matters with which he will have to deal. It is unfortunate that he will not have the help of the late Major-General Scott, whose long experience had made him perfectly familiar with all the details of the working of the metropolitan companies. There are, happily, on record some suggestions made by General Scott in regard to certain proposed new measures for the more efficient control of the companies and it may well be hoped that these suggestions will not be disregarded. Putting the matter briefly it was suggested by him that the supervising authority should have power to insist that proper works were made by the metropolitan companies to ensure that water abstracted from the Thames should undergo the necessary processes of sedimentation and filtration before it was supplied to the consumers. The Water Examiner should therefore supply the President of the Local Government Board with information on this point and it is advisable that he should be very careful as to the statements which he makes and also that his reports should be so clearly worded that there is no possible way of misunderstanding them or of reading into any part of them a meaning which the facts do not justify. It does not seem to us that the annual report of the Water Examiner for the years 1899–1900[1] quite carries out the ideal which we have suggested. For example, it may be remembered that Lord Balfour's Commission suggested that the water of the Thames while the river is in flood should not be used directly without proper treatment. The Commission pointed out that, for the purification of water, subsidence and filtration were necessary, that in their opinion the provisions which existed at the time of their inquiry were in the case of some companies quite inadequate, that regulations on these matters should be drawn up, and finally, that the enforcement of the regulations should be entrusted to the public Water Examiner. The present Water Examiner in his report says that the recommendations of Lord Balfour's Commission in regard to the capacity of reservoirs have borne fruit, and amongst others an example is cited of the East London Company's reservoirs at Walthamstow. Now it is, of course, perfectly true that at the present time the East London Company has enormous reservoirs in the valley of the Lee. It seems to be assumed by the Water Examiner that the great increase which has been made in the reservoir capacity is due to the recommendations of Lord Balfour's Commission, and that the reservoirs were made for the purpose of allowing sedimentation to take place and not for the purpose of storage. It was clearly to the interest of the East London Company from a financial point of view to have large reservoirs for storage of water in the valley of the Lee, and it necessarily happens that if dirty water be stored in reservoirs sedimentation takes place. It seems to us, however, that the report of the Water Examiner on this point infers, or might lead anyone who is not thoroughly acquainted with all the details of the works of the company to infer, that the directors of the company attach very great importance to the process of sedimentation; and that they have therefore made these enormous reservoirs for the prime purpose of water purification. We do not think that the facts quite point in this direction. Do the other arrangements of the company throw any light on the matter? At the present time the company is authorised to draw from the Thames 10,000,000 gallons of water daily. As a matter of fact, rather less than this amount is, we believe, taken. What is the reservoir capacity provided to receive this water? It does not exceed 5,000,000 gallons. Now the East London Company abstracts water from the Thames day after day whether the river be in flood or not, and yet the company has not provided sufficient reservoir capacity to store this water even for one single day. This fact alone clearly shows that the directors of the company do not attach the importance which they ought to the purification of flood water by sedimentation. We are quite aware that the present Water Examiner has not held his appointment for a prolonged period, but we think it is now quite time that he should make investigations, or cause investigations to be made, in regard to the purity of the water supplied from the Thames station of the East London Company, and that these investigations should be made with frequency during all periods of the year, and daily during periods when the river is in flood.

[1] Twenty-ninth Annual Report of the Local Government Board. London: Eyre and Spottiswoode.

DEFECTIVE VISION IN BOARD SCHOOL CHILDREN.

IN November, 1899, the School Board for London decided that teachers should be requested to test the eyesight of the children by means of certain testing cards with which they would be supplied. A report upon the returns supplied has just been forwarded to us—it is dated July 25th, 1900—by the medical officer. From a note appended to the report by Sir Charles Elliott we learn that the test card was hung up on the wall and at a distance of 20 feet away from the wall a line was marked on the floor. If the child standing at this distance could read the bottom line of letters, D. = 6 metres, it was marked in column 1. If it could not read the bottom line but could read the next, D. = 9 metres, it was marked in column 2, and so on. If at 20 feet distance a child could only read the top letter, D. = 60 metres, it was marked in column 7. Of the full number of children tested—in all 338,920—259,523 were passed as having good distance vision, while 79,167 were given notices for their parents advising them that the children were suffering from "serious defective vision" and that they should be taken to see an oculist without delay. By far the largest percentage of defective vision was found in the City division, where only a little over half the children examined were found to have good sight. Other divisions where sight was below the average were Westminster, Hackney, Tower Hamlets, Finsbury, and Southwark. Those in which eyesight was above the average were Greenwich, East and West Lambeth, Chelsea, and Marylebone. In other words eyesight varied inversely to the density of houses, thus seeming to bear out Mr. Brudenell Carter's hypothesis of the vision of town-dwellers being weak owing to the eye having but little opportunity of being exercised in distant vision. Another corroboration of this hypothesis has lately been put forward in the remarks made about the superiority of vision enjoyed over our troops by the Boers. The ratio of good sight rises with the standard, but this, it is suggested, was due to increased reading power. On the whole, the

tests, although necessarily somewhat rough, appear to have been fairly accurate, for Dr. W. R. Smith mentions in the report that Mr. Ernest Clarke, F.R.C.S., of the Central London Ophthalmic Hospital, stated that of the children applying at the hospital only about one in 12 did not require glasses. On the other hand, Mr. R. J. Bland, the secretary of the Royal London Ophthalmic Hospital, stated that many children applied to the surgeons of that hospital whose eyesight was not defective. Sir Charles Elliott remarks that after all the results may be considered as approximately true and adds that at any rate they show which children should sit on the front benches when it is required that they should see what is drawn or written on the black-board. We see further that Dr. Smith recommends that the test should be applied to every child on admission—a recommendation which we hope has been carried out.

A MEMORIAL TO THE LATE SIR RICHARD THORNE.

A TOUCHING tribute has been paid by the medical department of the Local Government Board to the memory of their late distinguished chief. The memorial, of which we reproduce a copy, has recently been placed in the church of St. John's, Woking, where Sir Richard Thorne was wont to worship when at Woking and in the churchyard of which his remains are laid. The tablet, which is made of gun-metal and mounted on an oak base, was artistically designed

by Mr. Kitchin, the assistant architect of the Local Government Board, and executed by Messrs. T. Elsley, Limited, of Titchfield-street, W. The inscription is of a simple nature and merely places upon record the regard in which the medical staff held their chief. The great work which was done for the public health and for the nation by Sir Richard Thorne finds its fitting recognition in a continued application in practice of the results of his labours. The influence which he exerted in raising the dignity of the public health service and procuring for medical officers of health throughout the country a better status and a more useful public position is not as yet quite adequately recognised, but it will doubtless be appreciated in full by the future chronicler of public health progress during the later years of the Victorian era.

STREET RUFFIANISM.

THE Hooligan question is still with us and is being debated in the columns of the daily press and of the monthly magazines. In the recently published February number of the *Pall Mall Magazine* Mr. Arthur Morrison, who has a wide acquaintance with the genus, gives us his impressions. We are glad to see that he agrees with what we have insisted upon over and over again in THE LANCET—namely, that imprisonment and fines are neither troublesome nor expensive to the Hooligan. The former he rather likes than otherwise, and the latter are paid by a "whip round." Mr. Morrison argues that the lash is the only real deterrent of Hooliganism. We are quite in accordance with those who say that the prevention of Hooliganism must be sought by catching the budding rough young and giving him some healthy employment and some amusement. The youth of the upper class or the middle class, especially he who shows a disposition to be troublesome at home, is, mercifully for himself, sent to a public school. Here he either learns to behave himself or, if he is not willing to learn, he is taught by the application, it may be, of a racquet, that he must do as he is told whether he likes it or not. But the class from which Hooligans are recruited never learn to obey and it is not altogether their fault that they turn out as they do. By all means, then, let us provide early discipline for the Hooligan infant, but the full-grown article must be made to obey by the lash. While on this matter we may refer to an admirable letter by the Rev. C. G. Lang published in the *Times* of Jan. 21st. In this letter he recounts the case of four boys, aged about 15 years, who, as boys will do, engaged in feudal fights with the boys of another street. In the course of the fight two boys were shot with slugs from a toy pistol. For this offence the boys were sentenced by the Recorder to five days' imprisonment and three years in a reformatory. When they come out what will become of them? They will have herded with criminals and will only too probably be contaminated for life. These are the cases where a legal birching would do all the good in the world.

THE WITNESS OF THE SKIAGRAM.

AT the meeting of the Bradford Medico-Chirurgical Society, held on Jan. 15th, a report of which will be found in another column, Dr. J. B. Hall read a paper upon the Medico-Legal Aspects of Skiagraphy in the course of which he said that in the hands of unscrupulous persons a skiagram was a dangerous weapon. An expert, he said, possessed of good anatomical knowledge could produce in a skiagram almost any degree of deformity he chose. The public had come to believe that a skiagram was a representation analogous to a photograph showing only what existed and nothing more. We must add that if the public believes that an ordinary photograph always shows only what exists it is grievously mistaken. An ordinary photograph can be "faked" to any extent, and even with no intention to deceive will give most bizarre results. A photograph of a building may be obtained which is twice as wide at the bottom as at the top, or *vice versâ*. A man may appear to have feet about a yard long and a head no bigger than a turnip. Everything depends upon the way in which the photograph is taken. So with the skiagram: the distance of the tube from the body, the angle at which the kathode is inclined to the plate, and many other details have to be taken into account. But we scarcely think that Dr. Hall is right in saying that

any degree of deformity can be produced. There would be no difficulty in producing the appearance of a supposititious bullet or needle in the body, or even by manipulation of the negative to produce a print of an apparent fracture, but that deformities, strictly so called, could be produced by unfair means we take leave to doubt, especially if the use of an accurate localiser is insisted upon. Nevertheless, Dr. Hall's paper contains a useful warning against belief in skiagrams taken by non-experts, for these certainly may be deceptive.

RADICAL CURE OF HERNIA

HOWEVER satisfactory some of the results may be which are obtained by the methods of radical cure for hernia which are now in use it cannot be denied that these methods are by no means perfect. In this number of THE LANCET we print descriptions of two new methods—one for the radical treatment of femoral hernia and the other for inguinal hernia. The former is contained in a clinical lecture by Mr. W. H. Battle and the method consists in bringing down a portion of the aponeurosis of the external oblique muscle and placing it as a shutter over the upper end of the crural canal, suturing it to the fascia over the pectineus and to Gimbernat's ligament. Additional sutures are used to hold the displaced aponeurosis in its new position. This method has proved valuable in several cases under Mr. Battle's care and is well worthy of more extended trial. The operation for inguinal hernia is one which has been practised for some time by Mr. H. P. Symonds of Oxford. By means of an incision above the external abdominal ring the peritoneal cavity is opened, and from within, with the help of a pair of volsellum forceps, the hernial sac is inverted and is then twisted and stitched to the cut edge of the peritoneum; then the wound is closed, the pillars of the external ring being also drawn together with sutures. The procedure is decidedly ingenious, but its true value can only be determined by further trial.

INFECTIOUS DISEASE IN EGYPT.

IN Mohamedan countries infectious diseases are seldom interfered with, being allowed to run their courses freely without any attempt to check or to control their ravages. In a case here or there some little effort may be made to ameliorate the condition of individual sufferers, but measures calculated to prevent or even to limit the dissemination of the infection are never adopted. As an excuse for such grossly culpable negligence it is averred by adherents of Islamism that resistance against the Divine will would be an impious procedure. They contend that since disease is an instrument of punishment in the hand of the Almighty their duty lies in a blind submission to the chastening, but that their contention is the outcome of sheer ignorance is plainly shown by the following extract from a decree issued by Mohammed Ali the Great, the first independent ruler of Egypt. Writing to Zeki Effendi, his Wakil at Alexandria, on the 12th Chawal, 1250 (Feb. 11th, 1835), the founder of the present dynasty says:—

"The aversion of the inhabitants of Alexandria to sanitary measures arises from their ignorance. ..... The plague—may God preserve us from it!—being the scourge of the deity, to flee the divine wrath in order to take refuge in his mercy is in no wise contrary to the holy law. Inasmuch as the condition of things now prevalent is a danger to mankind, in trying to escape therefrom one does not disobey the orders set forth in the divine book. Did not God, by the mouth of his prophet, say, 'Flee from my wrath as you would flee from the presence of a lion'? Is not this injunction applicable in the case of infection? If it should be wished I can call upon the doctors of canonical law to issue precepts (*fetwa*) to that effect. In a word, if it should be necessary to collect the whole of the prophet's prescriptions regarding the precautions to be taken against evil the result would be a volume of immense size. The people who, through blind adherence to vulgar error, would deliver over a great city like Alexandria to the tender mercies of a pestilence are brute beasts and not human beings. The fleet, the hospitals, and the arsenal by a due observance of sanitary rules have succeeded, thanks to the Almighty, in protecting themselves from the reigning evil. Is not this a sufficient proof of the efficacy of sanitation?"

Under Mohammed Ali and Clot Bey the public health of Egypt was well supervised, but unfortunately their successors were not equally enlightened and soon nothing but the dry bones of the sanitary organisation remained. Corruption and inefficiency became paramount, and it was not until 1884, when an English sub-director was added to the Services Sanitaires, that any improvement took place. Since then there has been a systematic attempt to deal with outbreaks of infectious disease, and considering the insufficiency of the funds at the disposal of the sanitary authorities the results may be said to have been satisfactory. According to a somewhat elaborate return which has lately been published the Egyptian infectious disease record for the 10 years 1886–95 may be briefly shown in tabular form as follows:—

Decennial Period 1886–1895: Total Number of Deaths.

—	Natives.	Foreigners.
Small-pox	2,988	444
Typhic fevers	12,143	823

Decennial Period 1886–1895: Numbers treated in Hospitals and Ambulances.

—	Admitted.	Died.
Small-pox	8,250	1,791
Typhic fevers	10,963	1,974

The generic term *typhic* includes the following diseases: enteric fever, exanthematic typhus, relapsing fever, and bilious fever. At first the ambulances dealt with only a small proportion of the cases, but towards the end their operation was extended. The above figures do not include the returns from the Frontier Province which is under military control.

A SCHEME FOR RESEARCH WORK IN MENTAL PATHOLOGY IN THE UNITED STATES.

A COMMITTEE of the New York Neurological Society, with Dr. Frederick Peterson as President, was recently appointed by the President of the New York Commission in Lunacy "to offer suggestions as to a scheme of scientific study of mental diseases in connexion with the State's hospitals for the insane," and its report has now appeared. The signatories include well-known names in neurological and psychological medicine such as Dr. Frederick Peterson, Dr. B. Sachs, Professor Charles Dana, Professor Graeme Hammond, Dr. Joseph Collis, Professor Allen Starr, and others, and their recommendations are appended as follows:—

"1. It is to the interests of the State that original research work should be carried on in relation to insanity in order that the science should be advanced and better methods of prevention, treatment, and cure discovered.

2. There should be one central laboratory in the State, wherein the energies of the best scientific men in the various departments of medicine relating to insanity should be devoted wholly to the prosecution of original research.

3. Such a laboratory, combining the labours of well-qualified workers in general pathology, neuro-pathology, psychology, chemistry, and anthropology, should be able to produce from year to year results invaluable in advancing

the knowledge of the treatment and cure of mental disorders."

4. Recommendation 4 refers to the need of having a special medical officer to conduct the necropsies at every local asylum.

"5. The central laboratory should be freely open to any qualified scientific man for the prosecution of original research work under the direction of the laboratory experts.

6. The central laboratory should be part of a reception hospital for the insane situated at Manhattan Island."

These propositions accord in the main with the views entertained in Great Britain by many leading alienists and neurologists, and which have resulted in the establishment of the London County Council's Pathological Research Laboratory at Claybury so long back as 1895.

"DOCTORS" IN THE DOCK.

IT is a pity that the general press should not be more precise in their application of generic terms. Of course every intelligent reader of the newspapers knows perfectly well that a man charged with a misdemeanour and described in the paper as a "doctor" has, as a rule, no more connexion with the profession of medicine than has a Salvation Army captain with the British Army. Still, many readers of newspapers are not intelligent, and there is no doubt that the constant degradation of a title in the press does a certain amount of harm to an honourable profession. A most flagrant abuse of the term "doctor" is made only too often. In a recent instance it was applied in the headline of several newspapers to a man who in the account of the police-court proceedings was "described as a chemist," and who was prosecuted for supplying an abortifacient. It is open, of course, to any scoundrel who thinks to veil his misbehaviour to describe himself as "a doctor," and similarly medical students and actresses suffer commonly from vicarious vice, but that is no reason why a newspaper should calmly label him according to his preposterous claim. We beg our lay contemporaries to listen to our complaint, for we are giving voice to a real grievance of the medical profession.

ACTION OF MUCUS ON THE ORGANISM.

MUCUS is generally regarded as a harmless material, though if formed in superabundance in the air-passages it may become troublesome by inducing cough or by interfering with due interchange of gases in respiration. The important rôle now assigned to auto-infection has led M. Charrin and M. Moussu to investigate the effects of the introduction of mucus into the various media of the organism. The results which they obtained have proved unexpected and they have embodied them in a paper read before the French Académie des Sciences on Jan. 21st. To obtain mucus in sufficient quantity for the purpose of experiment and in a state of relative purity they scraped lightly the surface of the trachea and larger bronchi of horses, oxen, and large dogs. The material collected was agitated for about a quarter of an hour with water containing 8 per cent. of common salt, or with about a thousandth of its weight of sodium carbonate. The mixture was filtered and from 0·05 to 0·15 gramme of it per kilogramme weight of the body was injected into the marginal vein of the ear of a rabbit; death usually ensued in the course of a minute or two, sometimes preceded by slight convulsions, nystagmus, or slight dyspnœa. When the chest was immediately opened the heart continued to beat somewhat less strongly than in other forms of death and clots rapidly formed in the right ventricle. If the clotting were prevented by the injection of leech extract death did not occur. M. Charrin and M. Moussu were hence led to conclude that vascular obstructions were produced in the nerve centres and especially in the bulb, where thromboses were found, or possibly to emboli in different regions. The question then arose, What is the nature of this coagulating principle? The notion of the presence of a fibrin ferment suggested itself; but this view is not very tenable on the ground that fibrin ferment is easily destroyed by heat, whilst the coagulating power of mucus, especially when diluted with a weak solution of sodium carbonate, is retained even when exposed for several minutes to a temperature of boiling water. Also precipitation by alcohol, by means of which fibrin ferment is prepared, alters materially the action of mucus. It may be remarked that the dilutions of mucus are poor in leucocytes, and even when these are separated by the centrifuge the part which is freed from the leucocytes is as active in producing coagulation as that part where they have accumulated. Moreover, the coagulating substance does not dialyse or dialyses very imperfectly and slowly; it is precipitated by ammonium sulphate; and it is rendered inoperative by certain acids. The liver does not sensibly alter its properties, though coagulation seems to take place with great rapidity in the porto-hepatic region. The addition of a few drops of the dilutions of mucus to the blood of a horse *in vitro* causes coagulation to set in in the course of from two to four minutes, though such blood will often remain fluid for 20 minutes. Experiments made with mucus and obtained from other sources, as from the bladder and the surface of the intestine, have appeared to these observers to exert a similar coagulating action on the blood, and they propose to continue and to vary their experiments.

TYPHOID FEVER IN BELFAST.

DR. JOHN BARRON, who is a town councillor of Belfast as well as a medical practitioner, has forwarded to us a report of an interview granted by himself to a representative of the *Belfast Evening Telegraph* of June 23rd, 1900, on the subject of the prevalence of typhoid fever in Belfast. Dr. Barron does not consider that either the water or the milk is at fault in the main, though, of course, either may be contaminated accidentally. His view is as follows: "Typhoid fever is being engendered during the wet seasons of the year by the permeation of the soil with sewage matter and excreta entering it through the defective pavement of yards and passages and by leakage in sewers." In the hot weather, he says, this sewage-polluted soil becomes converted into dust which is blown about, carrying infection everywhere. What is wanted is careful protection of the ground in yards, passages, privies, ashpits, and the like, while the sewers should be kept in perfect condition so as to avoid leakage. Dr. Barron, however, believes that dry earth-closets would be safer, because sewers are almost sure to leak. In a speech before the City Council on August 1st, 1900, Dr. Barron advocated constant flushing of yards and passages and that the sewerage system should be improved. We have already dwelt upon the scandalous state of matters as regards sanitary conditions which characterised Belfast in the reports of our Special Commissioner,[1] who, as a result of his investigations during 1898, revealed an appalling state of matters with regard to bad drainage, while the Commission of the previous year showed the existence of 20,000 houses having no back passages and in which it was necessary to carry the contents of privies and ashpits through the living rooms. Although we cannot agree with Dr. Barron's theory in its entirety yet the pollution of the soil doubtless prepares the way for contamination of water, which probably occurs more generally than Dr. Barron appears to think, and we

[1] THE LANCET, Dec. 11th (p. 1559), 18th (p. 1623), and 25th (p. 1695), 1897; and Nov. 19th (p. 1359) and 26th (p. 1463), and Dec. 10th (p. 1584), 17th (p. 1667), 24th (p. 1737), and 31st (p. 1812), 1898.

certainly cannot allow that efficient sewerage is impossible. Apparently Dr. Barron does not think so either, for, despite what he is reported to have said in the interview, he recommended improving the sewerage in his speech before the Council. Dust, as we have recently been forcibly reminded by events in South Africa, is a potent cause of typhoid infection, and it is not impossible, given a polluted soil such as exists in Belfast, that infection is spread in this way. But we are still of opinion that a proper system of sewers and of strict building laws which shall be enforced without fear or favour would in a short time render Belfast a healthy city.

SOCIAL LEPROSY.

A CONTEMPORARY records with satisfaction the sentence of 12 months' imprisonment which has been passed upon "Ernest Cole" who when he was arrested was in female attire, by which device he more easily "accosted elderly intoxicated persons" previously to robbing them. This man who, as we are happy to believe is the case with most men of his class, is not an Englishman, was well known to detectives as an associate of blackmailers and was given by the police a character in round terms as "the most notorious character of Soho." We wish it were possible to believe that with the imprisonment of "Cole" the presence of these social lepers was banished from among us. Unhappily this is very far from being the case, and all unsavoury though such a subject is for discussion, it cannot be too widely known how infested is the jostling crowd of Piccadilly by night with men of the vilest kind, trading on the wages of prostitution and occasionally masquerading as women for purposes of fraud, blackmail, or bestiality. The young man exhilarated and thoughtless after dinner and a theatre, the elderly countryman, thinking no harm will result from a chance conversation—such persons fall victims to the wretches we are describing. One of the evils we suffer for our great general freedom is the presence in the midst of our capital of the scum thrown off from every great city of the continent. The vilest of the vile include these men of effeminate appearance dressed as women. Every Londoner should realise, as the medical profession is forced to realise, the fact of their existence, and if an occasion offers should help the police to effect their detection and arrest.

THE TREATMENT OF ASCITES IN CIRRHOSIS OF THE LIVER BY ESTABLISHING AN ANASTOMOTIC CIRCULATION.

THIS operation was first successfully performed in 1895 by Mr. Rutherford Morison. In 1889 Von der Meule performed it, but the patient died from shock; in 1891 Schelky followed and the patient died from peritonitis. In THE LANCET of May 27th, 1899, p. 1426, Mr. Morison published his fourth case which was successful. Two were uncomplicated and the patients recovered completely from the ascites. In the third case the diagnosis was doubtful, and in the remaining one the conditions were such as to preclude recovery. The *American Journal of the Medical Sciences* for December, 1900, contains an exhaustive paper by Dr. C. H. Frazier in which another successful case is published and all the previous cases are reviewed. Since Mr. Morison's first operation nine others have been recorded which, with the previous ones, make a total of 14. Excluding cases in which there was some error in the technique or the diagnosis or in which the operation was contra-indicated there remain eight cases. In these one patient was unimproved, one was improved, and six were living and free from ascites at periods after the operation of three, four, six, 24, 24, and 26 months respectively. The following is Dr. Frazier's case. A middle-aged man was admitted to hospital in May, 1900. He acquired syphilis in 1882 and had always taken alcohol freely. The heart was enlarged and a systolic murmur was heard over the whole præcordia. The liver could be felt below the costal margin and the spleen was enlarged. The abdomen was distended with fluid and the lower limbs were œdematous. The urine contained a trace of albumin but no casts. Diuretics were useless. Paracentesis was performed on May 30th and repeated four times at intervals of two weeks, when 512, 485, 330, and 400 ounces of fluid, respectively, were drawn off. On July 25th laparotomy was performed, the parietal peritoneum on either side of the incision was rubbed vigorously with a gauze pad, and the omentum, which was much thickened and contracted, was sutured to the parietal peritoneum and to the margins of the wound. The fluid was let out and the incision closed without drainage. Recovery followed. The patient was tapped on the thirteenth day after the operation and 328 ounces of fluid were withdrawn, and again on the thirty-sixth day, when only 96 ounces were obtained. Since that time—three months—there had been no re-accumulation of fluid and the patient had rapidly gained strength and was no longer bedridden. The operation purports to open a channel for the relief of the obstructed portal circulation by causing the formation of adhesions between the omentum and abdominal wall and between the surfaces of the liver and spleen and that of the diaphragm. That this is possible has been demonstrated post mortem. The technique is simple. A three-inch incision is made above the umbilicus in the median line or in the border of the rectus. The peritoneum of the adjacent surfaces of the diaphragm, liver, and spleen respectively, and the peritoneum on either side of the wound, are scarified with a blunt curette or rubbed with a gauze pad. The latter is the better procedure as it causes less bleeding. The omentum is sutured to the parietal peritoneum for a distance of three or four inches on either side of the wound and to the margins of the wound itself. The withdrawal of the fluid completes the operation. The wound is closed without drainage. The introduction of a drainage-tube is useless and increases the risk of peritonitis. One case in which the tube was used was fatal from this complication. It may be necessary, as in Dr. Frazier's case, to tap the patient during the time that the adhesions are forming. The dressing is secured by broad strips of plaster, which also keep the scarified surfaces in apposition. A special risk of the operation is the production of peculiar nervous symptoms which are supposed to be due to auto-intoxication from the direct entrance of the blood from the intestines into the general circulation without the intervention of the liver. Dr. D. Drummond of Newcastle has brought forward cases of cirrhosis of the liver in which such symptoms occurred. In one case the patient was on several occasions rescued from apparently hopeless coma by a brisk purgative.

AMBLYOPIA FROM INTOXICATION WITH JAMAICA GINGER.

IN the *Journal of the American Medical Association* of Jan. 5th Dr. E. Stieren has published a case of this condition, of which eight examples have been previously recorded in American ophthalmic literature. A man, aged 36 years, who was addicted to alcohol, drank heavily one Saturday. On Sunday, as he could obtain no liquor, he purchased a dozen ounce bottles of Jamaica ginger which he consumed before noon. He dropped into a drunken stupor and awoke about 3 P.M. totally blind. When seen by Dr. Stieren at 6 P.M. the pupils were dilated and did not respond either to light or accommodation. The fundi showed only slight blurring of the discs. The patient could see a hand moved at 12 inches. The corneæ were almost insensitive to the touch

of a camel-hair brush. He was confined to a dark room and given during the night 20 grains of calomel and of jalap in divided doses and one-eighth of a grain of pilocarpine hypodermically twice. Active diuresis and catharsis were produced. Next morning he could count the fingers at 10 inches. On the fifth day his vision and pupil reactions were normal. The lesion in this condition is supposed to be toxic retrobulbar neuritis.

THE ILLNESS OF H.R.H. THE DUKE OF CORNWALL AND YORK.

His Royal Highness the Duke of Cornwall and York is suffering from German measles. This disease is not very common in adults, but although it gives rise to great discomfort it is, as a rule, not of a serious nature. His Royal Highness is progressing favourably.

THE LATE DR. ARCHIBALD HAMILTON JACOB.

IT has come to the knowledge of a few friends of the late Dr. A. H. Jacob that owing to a long-continued period of ill-health and other causes he has died leaving his wife and daughters insufficiently provided for. Dr. Jacob, as Irish Editor of the *Medical Press and Circular* devoted much of his time to the interests of his professional brethren and the advancement of their just claims. For over 30 years Dr. Jacob was one of the most earnest workers on the Council of the Irish Medical Association, and for the same period was connected with the Royal College of Surgeons in Ireland, and at the time of his death was senior member of the Council. For many years he was a fearless and able advocate of the rights of the Poor-law medical practitioners of Ireland in the effort to obtain for them an adequate salary, security of tenure, and a pension in old age. A committee has been formed for the purpose of collecting subscriptions for the "Jacob Memorial Fund," to which the medical profession is earnestly requested to contribute. The committee in a circular letter to the profession write as follows:—

> Dr. Jacob was an accomplished scholar and a vigorous writer, and grappled with his subject in a masterly and independent manner, and was so richly imbued with public spirit that when advocating a cause he believed to be right he absolutely ignored his own professional interest and his own personal welfare. Those for whom he did so much cannot soon forget him, and his memory will be long esteemed in medical and private circles in Ireland—not only for his eminent services but for his upright and kindly disposition. The profession and the public who believe that the late Dr. Jacob did much to mantain the honour and dignity of the profession by his voice and pen have now an opportunity of helping materially his widow and daughters in a way in which he himself was not permitted to do, owing to ill-health and an unselfish life-long service in the interests of the profession.

Cheques and postal orders should be made payable to the honorary treasurers, Sir Charles Cameron, C.B., 51, Pembroke-road, Dublin, and Mr. L. H. Ormsby, 92, Merrion-square, Dublin. The honorary secretary to the Memorial Fund is Mr. George F. Blake, Registrar of the Royal College of Surgeons in Ireland.

BUCCAL SPOTS IN THE DIAGNOSIS OF MEASLES.

IN another column we publish a paper by Dr. L. Falkener which draws attention to an important diagnostic point in connexion with measles. Certain spots, known as "Koplik's spots," have frequently been mentioned as of some value in cases of doubtful diagnosis. Dr. Falkener shows that Filatow has a prior claim to their discovery and consequently describes them under his name. Into this controversy we have no wish to enter. The conjunction of a name with any disease or symptom is open to objection and we should prefer to see some definite name ascribed to these spots, such as "buccal eruption," or some other suitable term. However, for the present we may adopt the words used by Dr. Falkener. He gives a good description of the appearance and site of the buccal spots and states the time at which they first appear. This would seem to be an important matter on which hitherto sufficient stress has not been laid. Several authorities are quoted to prove that the spots are seen from two to four days before the appearance of the characteristic rash, thus enabling a diagnosis to be made and precautions taken as regards the spread of the infection much earlier than would otherwise have been the case. Their occurrence seems to be very constant. Dr. Falkener found them in every one of the 76 cases on which his paper is based. Further, the buccal spots are easy of recognition and not easily mistaken for other conditions. Aphthous stomatitis Dr. Falkener considers the only great difficulty in differential diagnosis, but the aphthoæ are more readily erased with a spatula or the handle of a tea-spoon than are the spots. Aphthous patches also lack the red areola; some of them are often too big, thereby casting doubt on the others; they are usually too opaquely white for buccal spots; and ulceration is often present at their bases. During two and a half years' practice at a fever hospital Dr. Falkener has examined 3000 or 4000 cases of all kinds and has never found the spots except in cases of measles. In their presence, then, we have an important indication of measles even before the rash appears; and when the latter is not characteristic, so that a doubt arises as to whether the case may not be one of r theln, they serve to check the diagnosis. They have also proved useful aids to diagnosis in cases of measles when the severity of laryngitis has given rise to suspicion of diphtheria. Dr. Falkener refers to six such cases and in all diphtheria was proved to be absent. The writer of this paper has done good service in publishing his observations, and medical practitioners will be glad to have another diagnostic point to fall back upon in a typical and doubtful case of measles.

AT a specially summoned meeting of the Royal College of Physicians of Ireland held on Jan. 28th the following resolution was unanimously adopted:—

> The President and Fellows of the Royal College of Physicians of Ireland, in College Hall assembled, whilst expressing their condolence and deepest sympathy with His Majesty King Edward VII. upon the death of our beloved Queen Victoria, desire to assure His Majesty of their loyal devotion to him, of their earnest desire that his reign may be as illustrious and beneficent as that of the Great Sovereign whom he succeeds, and of their fervent hope that his life may long be spared to enable him to work for the good and amelioration of his people.

IN consequence of the death of the Queen the Hunterian dinner of the Royal College of Surgeons of England, which had been arranged for Feb. 14th, will not take place. The Hunterian oration will, however, be delivered by Mr. N. C. Macnamara, as already announced, at 4 P.M. on Feb. 14th. The College will be closed to-morrow, Feb. 2nd.

AT a special general meeting of the Royal Medical and Chirurgical Society, to be held at 20, Hanover-square on Tuesday next, Feb. 5th, at 5.30 P.M., and summoned for the purpose, the adoption of a loyal address to His Majesty King Edward VII. will be moved by Lord Lister and seconded by Sir William Selby Church, Bart., President of the Royal College of Physicians of London.

THE annual dinner of the West London Medico-Chirurgical Society, which was announced to take place on Feb. 13th, has been postponed until May 8th.

MR. J. B. STORY, M.B. Dub., F.R.C.S. Irel., has been appointed surgeon oculist to His Excellency the Lord Lieutenant of Ireland in the room of the late Dr. Archibald Jacob.

THE death is announced of Mr. Bowater John Vernon, F.R.C.S. Eng., the senior ophthalmic surgeon to St Bartholomew's Hospital. He was also ophthalmic surgeon to the

West London Hospital. We shall publish an extended notice of his career in a future issue.

THE annual dinner of the Guy's Hospital Dental Society, which was fixed for Feb. 9th at the Hotel Cecil, has, in consequence of the death of the Queen, been postponed until Saturday, March 23rd.

REFLECTIONS ON THERAPEUTICS.

BY HARRY CAMPBELL, M.D., B.S., F.R.C.P. LOND.,
PHYSICIAN TO THE NORTH-WEST LONDON HOSPITAL AND TO THE WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM.

IV.[1]

RATIONALISM AND EMPIRICISM.

How far should the treatment adopted by the physician be empirical and how far rational? Let us first define these terms. Empirical treatment is that which is founded on experience and regarding the *modus operandi* of which we may be profoundly ignorant. The treatment of syphilis by mercury and iodide of potassium affords an instance. It has been discovered as the result of repeated trials of different drugs that these two are capable of greatly mitigating and even curing the disease. We therefore give them in syphilis because we have found by experience that they are useful. We do not yet know, and it really matters very little that we should know, how they do good, though we may shrewdly suspect that it is by germicidal action; and if one day such is found to be the case we shall then understand the rationale of the treatment, which thereafter may claim to be rational. As I shall presently argue, however, any strictly routine treatment, even though its rationale be well understood, is in a sense empirical, since while being hall-marked by experience it involves no special process of reasoning. Rational treatment, on the other hand, is treatment founded on reasoning, and the *modus operandi* of which must therefore to some extent be understood. It presupposes some knowledge of the pathology of the disease we are treating and of the ends for which we are striving, and the adoption of special means to achieve those ends.

The surgeon is in the fortunate position that his treatment is nearly always rational. He knows exactly what is required to be done, and he adopts definite and eminently rational means of doing it. He cuts out a tumour, removes a stone, amputates a limb, sets a bone, reduces a dislocation—always with a definite, reasoned-out end in view. The physician is not so fortunately circumstanced. Nevertheless he also is able to infuse a good deal of rationality into his treatment. Let me give an instance from my own experience. A stout, gouty man, aged 65 years, who had for years led an active life and been a hearty eater, retired from business. Having little to interest him outside his own home, he now spent most of his time indoors reading, but in spite of this entire change in his habits, he continued to eat and drink in exactly the same hearty way as before. After a while he developed, for the first time in his life, bronchitis, which beginning as an acute attack gradually assumed the chronic form. During the course of the next 18 months he saw several physicians, but he got steadily worse, grew thin and irritable, short of breath and tottering; he seemed, in fact, quite suddenly to become an old man. His physicians led him to understand that little could be done for him, that he was, in fact, old, that his complaint was the penalty of his years, that he must expect to have some infirmity at his time of life, and that all he could do was to make the best of it. Accordingly their treatment consisted essentially in giving expectorants; it was not a rational treatment, and consequently it failed. When I saw the patient I ascertained that he came of a remarkably long-lived stock, that he had led a regular and careful life, that the condition of his heart and arteries was satisfactory, that his kidneys were sound, and, what was remarkable in one of his years, that his chest expansion was good. Upon these facts I made up my mind that it ought to be possible to rid him entirely of his bronchitis. I told him so and explained to him why. I put in force a rational treatment, which I also carefully explained to him, and I succeeded in completely curing him. I argued: here is an old man leading a sedentary life and requiring, therefore, to take in comparatively little energy; the food needful to supply this energy is much less than he is now taking, for he is eating as much as he ate 30 years ago when in the full flush of vigorous manhood and in the thick of all its activities. Probably one quarter of the amount he now takes would be ample. His stomach, his liver, his kidneys, &c., are now 30 years older and so much the less efficient. His digestive organs cannot cope with the large mass of food he is taking; digestion is imperfect and consequently an excess of poisons is poured into the blood; moreover, his organs of elimination being so much older and less effective, and the circulation through them sluggish, owing to his sedentary life, these poisons are not properly eliminated. As a result the blood is surcharged with them, hence follow the anæmia, the irritability, the bronchitis—probably due to an attempt on the part of the bronchial mucous membrane to get rid of the poisons—hence, in fact, most of his troubles. The treatment I adopted was as simple as it was effective. It consisted (1) in gradually cutting down the diet almost to the starvation point, so as to give the digestive organs the minimum quantity of work (when I come to treat of diet I shall show what a small quantity of food old people need); (2) in promoting elimination, to which end I persuaded the patient to take large quantities of hot water on an empty stomach till I got the skin to act well and pushed calomel and salines as far as I dared; and (3) in putting the patient through a graduated course of respiratory exercises. This not only increased the input of oxygen and the output of carbonic acid, but stimulated the circulation through the lungs and the body generally, all of which, it need scarcely be said, are desirable ends in bronchitis. Finally (4) I got the patient to spend as much time as possible out of doors when the weather permitted. Stimulant expectorants and tonics were also given, but the cure was essentially due to the adoption of the rational treatment just described. I think I may fairly call it "rational treatment." It was not a rule-of-thumb treatment, but one reasoned out to suit the special circumstances of the case. This would be my definition of rational treatment. I may say that I have since treated many similar cases, and always with benefit, so that now it has come to be a routine treatment with me. And when a treatment is routine, not specially reasoned out to suit an individual case, it is, as I have said, practically the same as empirical treatment. I wish to emphasise this point, because some—I will call them ultra-rationalists, or pseudo-rationalists—claim, or at all events seek, to treat *each particular case* that comes before them by a special process of reasoning and on strictly rational methods, a claim which I contend is as dangerous as it is presumptuous and unwarranted.

The force of my contention that a routine treatment, even though rationally devised, is for practical purposes empirical, is, I trust, obvious. It is matter of little moment to the physician who adopts such a treatment whether it originated rationally or empirically; the important fact is that it is applied as a matter of routine—without any special process of reasoning; and be it observed that all routine treatment, even that initiated on rational principles, owes its justification to the fact that it has answered the test of experience. My meaning is made clear by reference to the treatment of myxœdema by thyroid extract, and diphtheria by antitoxin. These methods are the fruit of close reasoning and prolonged experiment, but for which they might have remained undiscovered for all time; once discovered, however, they are employed in exactly the same way as we employ mercury in syphilis, and the physician need trouble himself no more about the rationale of their action than need the microscopist trouble himself about the optical principles upon which his microscope is constructed. They have come to be routine treatments.

Now, so far as drugs are concerned, I strongly advise the physician to give them on the routine principle. Let him employ certain drugs in certain cases because they have been found by experience to be good in those cases, and let him not base his treatment by drugs, as the rational pharmacologist claims to do, on an assumed knowledge of their physiological actions and of the morbid processes going on in the body. Did we possess a minute and accurate knowledge of the pathology of the diseases we are called upon to

[1] No. III. was published in THE LANCET of Jan. 19th, 1901, p. 201.

treat, and a correspondingly minute and accurate knowledge of the action of drugs, we might conceivably devise a rational system of drug treatment for each case—one that should antagonise the various morbid processes going on in the body. But think for a moment what a perfection of knowledge this implies, and of the many opportunities for error that present themselves. I say we might *conceivably* devise such a system, but common-sense tells us that it is altogether impracticable, and I repeat what I have stated elsewhere, that the physician should not allow himself to be deceived by such pseudo-scientific nonsense. I have as much respect for the alchemist of old as for the so-called "rational" pharmacologists of to-day; nay, I have more, for the old alchemists were at least sincere searchers after right methods and they did not sin against light. Suppose, for instance, we are treating a gouty patient. Such a one does not eliminate his uric acid in proper quantities, and the learned pharmacologist tells us—or used to tell us, for the view is now disputed—that salicylic acid forms with uric acid salicyluric acid, which being highly soluble is eliminated readily by the kidneys and thus increases the output of uric acid. Now shall we give salicylate of soda in gout because of this supposed action? or shall we employ a drug—this or some other—which experience has shown to be useful in gout, though we may be entirely ignorant of how it does good? Shall we, in short, employ the strictly empirical method or the pseudo-rational method? There should be no question as to our answer. If we are wise we shall follow the empirical method.

The truth of my contention is well shown by observing the principles which govern the ophthalmic surgeon in his drug treatment. It is essentially routine. Let anyone visit the out-patient department of a hospital like the Moorfields Hospital, and he will find that the surgeons there trouble themselves very little about rationale in their employment of drugs. For each affection of the eye there is laid down a routine drug treatment which has been tested over and over again, and the best way to learn how to employ drugs most effectively in these diseases is first to learn to identify the diseases, and then to fix in our minds the routine treatment for each of them. A further and even more convincing proof of the correctness of my contention is afforded by the drug treatment of diseases of the skin. Probably in no class of disease are drugs employed so effectively as in these, and it is certain that the methods adopted are essentially routine. Were a physician having no knowledge of the routine treatment of these affections to attempt to cure them on *a priori* considerations he would make a sorry mess of it. To be successful he must first learn to recognise them, and next to apply the routine treatment of the experienced specialist.

I am not, of course, contending that we should banish all rationalism from our drug treatment: what I am contending is that we should rely mainly on experience. We are guided by rational considerations when, in a case of bronchitis, for instance, we give a sudorific to make a dry skin act, an aperient to relieve constipation, or an expectorant to liquefy a viscid sputum. We can, in fact, rarely wholly eliminate the factor of rationalism. I merely wish to insist that it should be kept within proper bounds.

As with drug treatment, so with treatment in general: we should, as far as possible, rely upon sound routine—routine which has been tried and approved—while at the same time we make proper use of rationalism. The kind of "rational" treatment that I deprecate is that in which the physician is for ever meddling with his patient, watching the symptoms from hour to hour, and adopting special measures to combat the morbid processes which he believes to underlie them. I have already condemned this pernicious method in another place and in the section on the vis medicatrix. A broad, common-sense rationalism—not a meddling, finicking, pseudo-rationalism—is what is needed. Thus, if there is a source of peripheral irritation—astigmatism, impacted cerumen in the auditory meatus, a carious tooth—we seek to remove it; if a patient is over-burdened with fat we reduce his weight; if he is emaciated we try to make him fatter; if he eats too quickly we urge him to masticate properly; if the kidneys cannot get rid of the nitrogen properly we limit the nitrogenous input; and so forth. All this is simple common-sense, but it is eminently rational.

I will complete my remarks on this head by contrasting a would-be scientific, or pseudo-, rationalism with simple common-sense rationalism as applied to the treatment of a case that came before me. A man, 35 years old, was a great sufferer from indigestion, and had become pale, emaciated, nervous, and irritable. He went to the continent and consulted several specialists there. They drew off the contents of the stomach at various intervals after taking food, and examined them chemically with a view to discovering the power of the stomach to digest different articles of diet, those which were not properly digested being removed from the dietary until finally the patient was restricted to three or four. The amount of fixed and free acids was also carefully estimated and special drugs were administered in order to correct certain defects that the calculation revealed. The result of this very scientific treatment was that he steadily lost weight and that he got more anæmic, more irritable, and more nervous. Yet this treatment all sounds very plausible, and the physician who adopts it, or the like of it, in such a case as this, would no doubt persuad himself, and perhaps others, that he is very scientific and a most advanced and up-to-date exponent of scientific medicine; but he is really guilty of the worst form of pseudo-rationalism. When I saw this patient he was a veritable skeleton. I did not examine his stomach. I found that he was a great reader, that he had astigmatism, and that his teeth were not good. As he was in a very exhausted state I had him put to bed and fed up. There was no need to be very particular about his diet, for from the very beginning he digested his food quite well when the sources of irritation in the eyes and teeth were removed. If the stomach had not digested the food then I should have fed the patient per rectum and given the stomach a rest. I should, in fact, have kept to a common-sense rationalism all through.

THE ROYAL COMMISSION ON SOUTH AFRICAN HOSPITALS.

THE Commissioners appointed to consider and report upon the care and treatment of the sick and wounded during the present South African campaign, in submitting their report state that they have divided it into four parts together with the minutes of evidence and an appendix.

In Part I. is given a brief account of the proceedings taken to enable them to discharge their duties. Some observations are added upon the evidence and upon the work done by the Commission.

In Part II., without dealing with the particulars of the various complaints made as to the care of the sick and wounded in the present campaign in South Africa, they state certain conclusions come to by them on various points of a general character. They also refer to some facts important to be borne in mind when dealing in detail with those complaints.

In Part III. they investigate the complaints so far as they were of a character to require special notice and state the conclusions come to in regard to them.

In Part IV. they recommend some steps being taken with a view of remedying in the future defects observed by them in the campaign.

We shall deal with the whole report in detail. For the present we content ourselves with reprinting the suggestions of the Commissioners with a view of remedying certain defects in the Royal Army Medical Corps, as reference to these suggestions is made in a leading article this week.

SUGGESTIONS WITH A VIEW OF REMEDYING DEFECTS IN THE ROYAL ARMY MEDICAL CORPS.

In previous parts of this report, and especially in Part II., we have mentioned several matters connected with the Royal Army Medical Corps as at present constituted, and the care of our sick and wounded, in which improvements are required. The extent to which, and the way in which, these improvements can practically be made, require detailed and careful consideration by military and medical experts. We recommend the appointment at some early convenient time of a departmental or other committee of experts to inquire into and report upon the steps needed to effect the following objects:—

1. The establishment of the staff of officers and orderlies of the Royal Army Medical Corps, and its equipment, on a scale sufficient to enable it to discharge adequately the duties ordinarily cast upon it in times of peace and by the smaller wars in which the Empire by its vast extent is so frequently engaged.

2. Regulations and provisions which will enable surgeons and trained orderlies in sufficient numbers to be rapidly obtained and added to the ordinary staff of the Royal Army Medical Corps in the event of a great war; and that will also ensure a rapid supply of all hospital and other equipment required for the due care of the sick and wounded in such a war.

3. The attraction to the Royal Army Medical Corps of a sufficient and regular supply of officers of good professional attainments. And the improvement of the position of the officers by the allowance of sufficient holidays; and by provisions enabling them to become adequately acquainted with the advancements in medical and surgical science; and the necessity of employing in the higher posts men selected for their merits rather than by seniority.

4. The employment, to a greater extent than that recognised and practised until the later stages of this war, of nurses in fixed hospitals for the care of the wounded and of fever and dysenteric patients, and such others as can properly be nursed by females.

5. The appointment of properly qualified officers of the Royal Army Medical Corps to undertake sanitary duties.

And with regard to other matters:—

6. The improvement of the existing ambulance wagons.

7. The selection and employment of the form of hospital tents best suited for the reception of sick and wounded in a campaign.

We also think that the committee might usefully consider the following questions, on which we ourselves express no opinion beyond what appears in Part II. of this report:—

(*a*) Whether it is advisable and practicable to some, and if any what extent, that the Royal Army Medical Corps should have exclusive possession of and control over all necessaries for the sick and wounded (other than ordinary food and clothing, not being hospital clothing), so as to avoid the necessity of requisitioning upon the Army Service Corps or the Ordnance authorities.

(*b*) Whether the administrative and clerical duties of the principal medical officers can be lightened and in particular to what extent the reports and returns which have to be made can and should be shortened.

(*c*) Whether the men of the bearer companies, when not engaged on the field, could be employed to assist in the field hospitals, and whether with this object it is advisable that the staff of the bearer company and of the field hospital of a brigade should be under one chief officer.

(*d*) Whether in times of peace a regimental doctor should be attached to each regiment for some fixed time.

(*e*) Whether general hospitals could be advantageously divided into smaller units.

(*f*) Whether it is practicable and advisable that the reception and distribution of all charitable gifts for the sick and wounded should be by some organised body on their behalf; and if so, what that body should be.

The following are not matters for inquiry by the suggested committee. It will be sufficient if the attention of the Royal Army Medical Corps be specially called to what we are about to state, with a view to our recommendations being acted on.

Having regard to what we have said on the subject in Part II., we think that strict inquiry should be made in the various military hospitals in South Africa and proper steps be taken in order to stamp out, where it exists, pilfering by orderlies of the stimulants, comforts, or property of patients, and the receipt of bribes by orderlies from patients.

We also suggest that the officers should, so far as it is possible and consistent with due discipline to do so, relax the strict military rule generally adopted in military hospitals, so as to give an additional feeling of ease to the patients and enable them to better appreciate the comforts of a hospital.

The power and duty of every officer in this campaign in cases of emergency to buy for his hospital at the expense of the Government any necessary not in hospital and not procurable without delay elsewhere has been fully recognised by the authorities, and the power has been by many freely exercised. But, as we have already pointed out, some officers appear not to be fully acquainted with the existence of the power, and it is advisable that it should be made widely known that any exercise of that power will be favourably viewed by the authorities, unless, of course, in cases of its abuse.

THE PLAGUE AT HULL.

WE noted in THE LANCET of Jan. 26th, 1901, p. 275, that several cases of plague had occurred on board of a ship sailing from Alexandria to Hull and which is now lying in the latter port. The following is a detailed account of the outbreak and the measures taken up to the night of Jan. 30th:—

The s.s. *Friary*, with a crew of 21 hands all told, arrived at Hull on Jan. 10th with clean bills of health from Alexandria, having on board the dead body of an able seaman, aged 30 years. The crew were subjected to the usual medical inspection, and after inquiries it was believed that the death of the seaman on board was due to natural causes, and the body was duly interred on the 14th. The remainder of the crew were found to be in good health on the vessel's arrival at Hull. The vessel belonged to Cardiff and left that port on Nov. 23rd, 1900, for Alexandria, where she arrived on Dec. 10th. The crew had enjoyed good health during the outward passage. The *Friary* left Alexandria on the 22nd, took in coals at Algiers on the 30th, and left that port on the 31st direct for Hull. Only the master went ashore at Algiers.

On Jan. 13th, 1901, it was reported that two of the crew of the *Friary* were ill, and the medical officer of health again visited the ship and examined an able seaman, aged 28 years (a Greek), who sickened on the 12th, and also an able seaman, aged 30 years, who sickened on the same day. They were believed to be suffering from influenza and medical treatment was recommended. Medical advice was sought on the following day, when the medical attendant expressed himself as being of opinion that both men were suffering from influenza with lung complications. They became rapidly worse and expired on the 15th and the 16th respectively. Their bodies were subsequently removed to the city mortuary where the medical officer of health, in conjunction with Mr. Frederick Wilson, who had been called in on behalf of the owners, performed a post-mortem examination. Portions of the lungs, spleen, and inguinal glands were forwarded to the Local Government Board, and also by special messenger to Professor E F. Trevelyan, of the Yorkshire College, Leeds, for bacteriological examination. The results showed the cases to be pneumonic plague.

During the night of Jan. 14th two others of the crew, aged 25 years and 24 years respectively, firemen, became unwell, and they, along with four more of the crew, were removed to the Evan Fraser Hospital, the former for observation and the latter for isolation. Work on the vessel was suspended, and on the 17th the medical officer of health formally declared the vessel to be infected with plague. The vessel was subsequently removed from the dock to the appointed mooring station in the river, where she underwent a thorough fumigation. Those of the crew who were not removed to hospital were kept on the vessel in the river. A fireman, aged 30 years, after admittance into the hospital, sickened with similar symptoms to the others. He died on the 22nd, and from the bacteriological examination his death also was proved to be due to plague. A man who had acted as watchman on the vessel on the Monday after her arrival in port and had assisted some of the sick men reported himself at the Sanitary Office on the 21st to be sick. He was immediately removed to the hospital, where he died on the 27th. The medical attendant, who had been called in to attend some of the sick crew and who had assisted at the post-mortem examination on the two bodies already referred to, became unwell on the 18th, and on the 21st he was admitted into the Evan Fraser Hospital. Specimens of sputa were submitted for bacteriological examination and he, too, was found to be suffering from pneumonic plague. For some days he remained in a very critical condition, but there is now a marked improvement in his health. Up to the night of the 29th there had been in all seven deaths, four in hospital and three on the ship, and there is little doubt that they were all due to pneumonic plague. Another of the crew at present in hospital remains in a critical condition. On examination of the persons affected there were no enlarged glands discovered. The whole of the bodies, excepting the one on board on the vessel's arrival, were cremated at the city crematorium. The whole of the crew, the nursing staff at the hospital, and others who had been exposed to infection, have undergone Haffkine's prophylactic treatment as supplied by the Local Government Board. The names and addresses of all who had been on board or otherwise associated with the infected ship were obtained and these persons have been kept under daily observation. Subject to the remainder of the cargo being discharged into lighters before re-entering the dock, and the holds of the vessel being battened down and thoroughly stoved to the satisfaction of the medical officer of health, the vessel will be declared free from plague.

The Sanitary Committee have met daily and the Port Sanitary Authority have had several meetings, at which the medical officer of health has presented reports as to the progress of the disease, and the authorities are taking every precaution to prevent any spread of the disease. As previously stated there had been no sickness noticed amongst the crew except that of the one who was dead on the vessel's arrival, and the origin of the outbreak remains obscure. It should be stated, however, that some of the crew had discovered dead rats on board after the vessel left Alexandria, and a cat which went on board at the latter port had shown signs of illness. Unfortunately, the cat was thrown overboard when the vessel left for the mooring-station. The dog on board the ship, which was ailing, was killed. Portions of the viscera have been submitted for examination, but the bacteriological test has not yet been completed.

The *Friary* was released from quarantine on Jan. 30th and is discharging cargo. The master, his wife, and nine others who have been under observation were also discharged from hospital on Jan. 30th. No further cases have arisen and it is a matter for satisfaction that the outbreak has been kept in hand and confined to the one centre of contagion.

HISTORY OF THE HOUSING QUESTION IN LONDON.

PART III. AND CONCLUSION.[1]

THE FINANCIAL DIFFICULTY.

FIRST among the many financial difficulties is the fact, already mentioned, that land which might have been sold at 1*s*. 2*d*. the square foot for ordinary commercial purposes was sold by the Metropolitan Board of Works for only 3*d*. the square foot when the restriction that it was to be used for building workmen's dwellings was imposed. To-day such land would be worth a great deal more. This means a large debt and a heavy burden for the amortisation of such a debt. The London County Council proposed that the value of the land should not be included in the sum that had to be repaid, but be treated as a permanent asset. As, however, the Treasury had already refused to extend the time of amortisation from 60 to 100 years, it considered that this proposal was simply an indirect means of extending the time of amortisation, and therefore would not give its assent. Yet it was argued that the dwellings to be built would be so well built that they would certainly last 200 if not 300 years, and therefore there was no necessity to pay back all the money expended within 60 years. On the other hand, who can say what far-reaching changes may take place in the course of 100 years? A radius of about an hour's railway ride from Manchester now embraces a population of some 10,000,000 persons. Who could have foreseen a century ago such a development? London has also grown with alarming rapidity, but a reaction may set in. Then another difficulty arose. The cost of building materials and of building greatly increased. Bricks which could be had at from 30*s*. to 35*s*. per 1000 in 1890 cost 42*s*. per 1000 in 1897 and 1898. The value of cement has increased 20 per cent. and iron and steel work about 27 per cent. The labourers' wages, which were 6*d*. per hour in 1890, rose gradually to 7½*d*. per hour in 1897 and the wages of bricklayers from 9*d*. to 11*d*. per hour. Also the number of bricks laid per day is less, so that altogether brickwork which cost £11 per rod in 1890 cost £20 15*s*. per rod by the end of 1898.

An increase of wages undoubtedly augments the cost of building, but there is a counterbalancing advantage, for it adds to the rent-paying capacity of the persons engaged in building trades; and when the building trades prosper it generally means that many other trades are also prospering. Nevertheless, and though the community may thus be better able to pay both rents and taxes, the latter are so unevenly distributed that it is most difficult to get money precisely where it is most wanted. Thus it is in those districts where there is the greatest need for better dwellings that the rates are already so high as to render it almost impossible to add to this burden. In Poplar, for instance, the rates amount to 8*s*. 1*d*. per £. Nor would an increase in the rents charged suffice to meet the case, for this would be followed at once by an increase in the assessment, unless, of course, the lodgings were municipal property. In this latter case it would not matter, for whether the local authority gets the money in the form of taxes or of rent it amounts to the same thing. It might alter the aspects of the accounts; it would not alter the condition of the public purse. As to which of the two, private companies or the county council, would be the best manager the statistics published leave the matter open to doubt, and in any case the difference is not very great. The expenditure, including unlet tenements, loss of rent, caretakers' quarters and repairs, &c., was equal to 51·39 per cent. of the rents received by the county council in 1896–97 and to 47·70 per cent. in 1897–98. For the private companies it has varied in different years from 37·22 to 52 05 per cent Their average is a little lower, but the private companies have spent less in repairs and this may cost them more in the long run and is not so favourable to the well-being of the tenants. It would be false economy to reduce the expenditure in regard to repairs, but an economy has been recently effected by the county council in regard to collecting rents by amalgamating the duties of management and rent collection. This, it is thought, will economise 2·52 per cent. of the gross rental. As the rent-roll of the London County Council in 1899, when this matter was discussed, amounted to about £30,901 per annum this meant a saving of £780.

In dealing with the question of ways and means we have to consider the opinion of the valuer to the London County Council. Setting agricultural land aside, he maintains that local taxation places the heaviest burden on the least valuable building land. An example is given. A market gardener pays £5 rent for an acre of land. To make roads and to lay this land out for building purposes will cost £400 and, if it is divided up into 20 building plots it will pay to let this land at £2 ground-rent per plot. This is, however, not the practice of ground landlords. They prefer to keep the ground vacant till such time as they can obtain £5 or more per plot. Thus the ground landlord, instead of receiving £40 per year for the £400 he has spent receives £100 a year, or 25 per cent. But it is the builder and the tenant who have to pay this large interest. The houses will probably cost the builder £300 each, and as he is not likely to be content with less than 6 per cent. interest he must charge £18 to produce such interest. Then he must charge £6 more for repairs and insurance and some £7 for local taxes; this makes £31, so that with the £5 for the ground-rent the tenants must pay in all £36 for each of the 20 houses built on the one acre of ground that as a market garden only produced £5 a year or £6 with taxes. The acre will have to yield £140 in taxes and £100 in ground-rent, total £240, instead of £6, or a fortyfold increase. Though the value of land in and about London is rising rapidly, yet, and in spite of tramways and "twopenny tubes," many years must elapse before an augmentation of 40 times its present value can be realised. In the meanwhile, the value of the land in the central parts of the metropolis is forced up because the land in the outskirts is withheld from the market. The valuer urges as a remedy for this state of affairs that if rates and taxes were calculated according to the site value only, and were levied on all vacant as well as all covered land, the present system of "cornering" land would break down. Land could then be obtained when it yielded 4 or 5 per cent. to the owner instead of being withheld till it yielded from 20 to 30 per cent. Both in Paris and in Berlin the same demand in favour of taxing land withheld from the market has been made.

Having now summarised the account given of the difficulties that beset the housing problem and the efforts of the Legislature to deal with these obstacles we are naturally anxious to inquire what, after all and in spite of all, has been done. For how many people have new and better homes been constructed, and of all the laws enacted which have been the most generally applied and found to be the most useful? This is not clearly explained in the work on the housing question issued by the London County Council. Each great scheme is separately described with accompanying plans, and there are also tables and summaries of these tables, but still it is difficult to understand. For instance, at the very beginning of the story we are told that the London County Council when they came into office at once set to work "erecting" buildings for 2000 persons in respect to the obligation left by the Metropolitan Board of Works. But as these schemes of the defunct board were framed under Part I. of the Act what business had the Council to erect buildings? Then we are told that from 1889 to 1900 the Council have displaced 7845 persons and have accommodated 6956 persons, while dwellings are in the course of erection for 4956 persons and 8339 will be displaced, but it is not clear how these people are going to be, or have been, re-housed. Will they be re-housed by private companies under Part. I. of the Act or by the county council under Part III. of the Act? These figures indicate that 16,184 persons have been, or will be, displaced and that only 11 912 have been or will be re-housed. This shows a deficit therefore of 4272 persons, who seem destined to increase the overcrowding already existing. But there follows immediately after other figures that present quite a different picture The London County Council, availing themselves of the Housing of the Working Classes Act of 1890, have displaced 7845 persons, the same figure as given above, but they have housed 9198, including those who were left over by the Metropolitan Board of Works. As this cost in clearance £524,750 it was apparently done under Part I. of the Act. The recoupment was £118,850, and the net loss was £405,900.

[1] Parts I. and II. were published in THE LANCET of Jan. 12th (p. 124) and Jan. 19th, 1901 (p. 205.)

Still another table sets forth that 3996 persons are being displaced and 4343 will be displaced, which if added to the 7845 mentioned above make a total displacement of 16,184, but then 5646 more persons are to be housed, and this with the 9198 mentioned in the previous set of figures makes another total of 14,844 either housed or to be housed. Here, then, we have the deficit reduced to 1340. But in the tables given it is stated that the number to be re-housed will be 16,894, though the total, according to the details, is only 14,844. Perhaps this discrepancy may be explained by the fact that the smaller figure comprises only those for whom houses were actually in course of construction at that time. On inquiry we have ascertained that this figure of 16,184 persons is the sum total of re-housing prepared by the county council up to the date of March 30th, 1900. The gross cost of these clearances is £1,028,800, the recoupment is £289,900, and the net loss is £738,900. These summaries do not give the cost of the dwellings erected because they are all designed to be self-supporting. But if these dwellings do not belong to the county council it is not the business of that council to reckon whether they will be self-supporting or not. As it was not till the year 1898 that a resolution was adopted by the council recommending that Part III. of the Act should be applied, and as these schemes are associated with clearances that can only be effected under Parts I. and II. of the Act, it would seem that Part III. does not apply to these operations, that the council could scarcely be expected to erect these dwellings and itself rent them out to tenants; but, having effected the clearance, the land should have been sold to companies who would undertake to build artisans' dwellings at their own risk and peril. This, according to the text of the law, is what should have been done. As a matter of fact nothing of the sort was done and it is a pity that the measures that were taken have not been more clearly explained.

The London County Council were on the horns of a dilemma. The law rendered the clearing of insanitary areas not optional but obligatory; on the other hand, when the costly clearances had been effected it was found to be no longer possible to sell the land with the conditions imposed of building workmen's dwellings upon it. The artisan dwellings companies, the Peabody Trust, and such bodies had already bought from the Metropolitan Board of Works as much land as they could manage, and by the time the London County Council came into power their spirit of enterprise had exhausted itself. Yet and though there was no purchaser forthcoming the land could not be allowed to remain vacant. Fresh insanitary areas were being denounced and condemned, more clearances had to be made, and, of course, the demand for new houses to replace those pulled down increased in intensity. But no one would undertake to build these new houses, and it seemed as if matters would drift from bad to worse. It then occurred to the London County Council that they might solve the difficulty by themselves becoming a building company. They would purchase the land from themselves for themselves. Hence we see the otherwise astounding and inexplicable heading "recoupment." So much is set down as the cost of a clearance and then there follows an estimated recoupment, yet we know that no one has bought the land of the clearance from the county council and therefore there can have been no recoupment. The county council simply reckoned that if they had sold the land with the obligation imposed on the purchaser to build upon it only workmen's dwellings the purchase price paid would have amounted to the sum put down as recoupment. This then represents what would be the market value of the land if sold with the obligations imposed by the law. Most of the land cleared of its slums could have been sold for three or four times this sum if these obligations were not imposed. The county council placed themselves in the position of an artisans' dwellings company and considered themselves indebted to their own treasury for the amount which in all probability the treasury would have received had it been possible to sell the land to a private company. Then the county council set about building on that land just as a private company would have done; that is to say, to build houses that would bring in enough to pay the cost of purchasing land, of building, of working expenses, of interest on borrowed money, and to provide a sinking fund. The only difference was that the county council did not seek to realise a net profit over and above these charges.

Thus we have had municipal enterprise stepping in to do what private enterprise shrank from attempting. This is surely a most important—indeed the most important—feature of the entire question. If it is not carefully explained all the details about building plans, the size of the rooms, the methods of collecting rent, the cost of management and repairs, so lengthily discussed by the London County Council and described in their published history of the question, seem to be altogether out of place. Such details would apply to the carrying out of a scheme under Part III. but not to a scheme under Part I. of the Act.

At first sight it looks as if the London County Council had applied Part I. of the Act to effect the clearances and then Part III. to purchase the land that had been cleared, and this would probably be a good solution of the problem. Unfortunately this is not legal. It is true that under Part III. the county council are empowered to buy land, to build upon it, and to retain the ownership of both land and buildings. The borough councils now also possess this power. But this does not come under the heading of clearances; a scheme is not necessary; the houses purchased need not be in an insanitary condition; indeed, land can be purchased on which there are no houses at all. On the other hand, the county council or the borough councils must effect such purchases in the ordinary manner. The purchase may be compulsory if approved by the Secretary of State and confirmed by Act of Parliament, but the stipulations in Part I. and Part II. which tend to limit and reduce the amount of compensation given in effecting a clearance of insanitary areas do not apply to purchases under Part III. of the Act. This was inaccurately explained in our issue of Jan. 19th through the accidental omission of the word "not." The position, therefore, stands thus: Districts condemned as insanitary areas must be cleared by the county council or by the borough councils. But while the local authority is thus compelled to buy up the insanitary area it is not allowed to keep the land for more than 10 years unless special permission is given to that effect. If there were ready purchasers for the land this obligation might not be so very burdensome; but, as matters now stand, we are face to face with this absurd position, that the local authorities must purchase land with the obligations to sell it though it is well known that there are no purchasers forthcoming. Fortunately the Act provides that the Secretary of State may give permission to the local authority to retain the land. If this permission were granted at the onset then the local authority might safely venture to build. But this is not the way the Act is applied. The permission to retain the land will only be accorded, if it is given, at the expiration of the 10 years. Under these circumstances the only business-like and safe procedure is for the local authorities not to build till they have acquired the certitude of being able to retain possession of the land. This, however, would be most disastrous. It would apparently retard the re-housing of the poor for 10 years and cause most valuable sites to remain unutilised for that lengthy period. The London County Council have had the courage, however, to face the risk and to build on the clearances though they may be compelled to sell the land at the expiration of the 10 years. It is not anticipated that this clause of the Act will be enforced, but there is nothing in the law to protect the county council; it all depends on the Secretary of State, who might refuse to give the county council special permission to retain the land. In that case the elaborate calculations made would fall to the ground and the buildings erected for the re-housing of the poor together with the land on which they stand would have to be sold probably at a disastrous loss. The mere mention of such a possibility, however unlikely, shows that the law is still in an unsatisfactory condition. Evidently the local authorities ought to be specifically allowed to retain land cleared under Parts I. and II. of the Act; at least if they are willing to pay as much as any private company offers. Even then the local authorities would be at a disadvantage as compared with private companies; for the former are compelled to refund their capital expenditure within 60 years, whereas no such obligation exists with regard to any private company or enterprise.

Taught by this experience, the London County Council are inclined to avail themselves more and more of Part III. of the Act. Unless the purchase is to be compulsory the local authorities can proceed, under Part III., with all the freedom of private enterprise. They have simply to watch for good bargains and buy the land needed wherever it can be found, whether this be within or without the boundaries of the metropolis. The land thus purchased and the dwellings built or already existing

upon it become public property in perpetuity, the only obligation being the creation of a sinking fund so that the capital expenditure may be repaid within 60 years. In some districts this is financially possible but with regard to the old slums many of them are too near the commercial centres and the land is too valuable for the erection upon them of artisans' dwellings on a profitable basis. Thus we have the terrible difference of the cost of the clearances given in one of the estimates quoted above at £1,028,800, while the value of the land thus acquired is put down at only £289,900; because it must be employed exclusively for the purpose of re-housing the working classes. Under Parts I. and II. of the Act this heavy loss is thrown upon the rates and thus the community at large is made to pay for the sins of those who brought the slums into existence. This is not a pleasing situation. It would be more gratifying if the culprits were tracked out and forced to pay; but this seems to be a case of the sins of the fathers being visited upon the sons.

The worst is that all these sacrifices have not solved the problem. It is estimated that the population of the County of London has increased by more than 700,000 persons since 1881. If these newcomers have also their submerged tenth, this means some 70,000 more people who are not in a position to pay high enough rents to secure healthy homes. The population it is true has decreased in such central districts as Marylebone, the Strand, Westminster, and St. James's in the proportion of from 10 to 27 per cent. Then there has been a smaller reduction of population in Clerkenwell, Shoreditch, Limehouse, and Bermondsey. But this does not mean less overcrowding. It only implies that a large number of dwelling-houses have been converted into business premises, and the ever-increasing demand for business premises renders it very difficult to re-house the poor on the same spot when they live in central districts. The Midland Railway Company at Somers Town has pulled down some 500 houses and displaced about 6000 persons. In the face of all this, what has been done to re-house the poor seems very inadequate, though it represents an immense amount of work achieved in the face of endless difficulties. Taking the most favourable and recent view of the situation Mr. David S. Waterlow, L.C.C., explains in the *Fortnightly Review* of January that the areas cleared by the London County Council and left vacant by the Metropolitan Board of Works displaced 16,602 persons, and that 13,847 have now been re-housed. The county council are now not only providing for the balance, but for a much larger number. Part III. of the Act will in future be so extensively applied that there are plans now being studied for housing 23,838 persons under this section; but as such plans are pure building speculations and must be made to pay commercially they require much forethought and caution. The schemes now completed or where the buildings are in course of erection comprise 74 block buildings, cottages, and one lodging-house. These will provide for 16,352 persons. Plans of buildings are being prepared and the necessary land is already acquired to house 14,853 persons. Finally, the purchase of land has been sanctioned on which 5800 more persons will be able to find homes. This gives a grand total of 37,005 persons who will be housed by the county council when the schemes now in hand are completed. Apart from this the London County Council are also negotiating for the purchase of 250 more acres of land. Indeed, under Part III., more and more land is being bought. Two plots were thus purchased last December and another plot last week. The history of the housing question at the close of the volume and in the last of the many estimates given sets down the net cost of the clearances effected by the Metropolitan Board of Works in the most recently corrected estimate at £1,605,088; those effected by the London County Council up to the month of March last cost £1,045 050, and adding to these figures the smaller sums spent by district authorities we have a grand total for clearing insanitary areas of £2,898,616. The estimated cost of dwellings—including the value of the land as appraised with the obligations imposed and all incidentals—constructed by the London County Council is £1,221 418, and the gross rent receivable per annum from this property and in respect to tenements actually occupied was in March last £35,164. The district authorities also received £1527 in rent for tenements of dwellings that had cost them £27,336. The total number of persons provided for or to be provided for under all these headings or schemes amounted to 64,428, including those housed by companies who bought land from the Metropolitan Board of Works, and 2452 persons housed by district authorities. Those who live or are to live in tenements constructed by the county council will number about 34,000, though Mr. David S. Waterlow sets down this figure at 37,000, but his estimate is of a later date.

In conclusion, it will be seen that of late much greater activity has been shown in respect to the housing question. The London County Council are displaying more boldness and a more hardy spirit of enterprise. They see their way to making some of the schemes pay and this is a great encouragement, and considering the gravity of the situation such encouragement is much needed.

THE BATTLE OF THE CLUBS.

THE COVENTRY DISPENSARY AND THE BIRMINGHAM AND MIDLAND COUNTIES BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

THE Coventry Dispensary, to which we have referred upon many previous occasions, has received a very rude shock from the hands of the Birmingham and Midland Counties Branch of the British Medical Association.

On Jan. 10th last Dr. E. Phillips of Coventry referred to the medical officers of this institution before the above-named branch and proposed the following resolution:—

That inasmuch as the Coventry Provident Dispensary has been condemned by the Ethical Committee of the Birmingham and Midland Counties Branch of the British Medical Association, by the Council of the Association, and by the members assembled at annual meetings, it is proposed that in the opinion of this meeting no professional recognition should be given to medical men holding appointments in this institution by any member of the Birmingham and Midland Counties Branch of the British Medical Association.

Dr. Phillips pointed out that the institution had been condemned by the British Medical Association at three annual meetings, by the Council of the Association, by the Ethical Committee, as well as by the journal of the Association; that THE LANCET had sent a Special Commissioner to Coventry who had condemed it in the strongest terms; and that the medical press had refused the advertisements for vacancies. That in 1896 the dispensary medical officers had presented a memorial to their committee in which they admitted the abuses complained of and asked for their reform, but the reply which they received was that if they were not satisfied with their positions another staff could be procured to take their places. Since then a few minor alterations had been made, but the dispensary still had no wage limit and the medical officers were entirely in the hands of a lay committee who did not hand over all the money received and thus exploited them. In addition clubs and members were taken at a lower rate of payment than other medical men in the town accepted, and well-to-do people took advantage of the benefits of the institution.

At a later meeting held on Jan. 24th, when the same resolution was under discussion, the dispensary medical officers replied to these statements and admitted that well-to-do people were members of the institution. They did not, however, avail themselves of the benefits, having joined when they were not so well off, and they still retained their membership in order to support the dispensary. The resolution was carried with six dissentients. As the number present was 160 or more the feeling expressed was practically unanimous.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6708 births and 4039 deaths were registered during the week ending Jan. 26th. The annual rate of mortality in these towns, which had been 19·1 and 19·6 per 1000 in the two preceding weeks, further declined to 17·9 last week. In London the death-rate was 17·6 per 1000, while it averaged 18·1 in the 32 large provincial towns. The lowest death-rates in these towns were 10·5 in Portsmouth, 11·6 in West Ham, 12·7 in Blackburn, and 13·0 in Burnley; the highest rates were 21·9 in Birkenhead, 23·7 in Norwich, 24·0 in Liverpool, and 24·6 in Gateshead. The 4039 deaths in these towns included 347 which were referred to the principal zymotic diseases, against 389 and 374 in the two preceding weeks; of these 92 resulted from whooping-cough, 75 from diphtheria, 58 from measles, 48 from "fever" including

five fatal cases of "pneumonic plague" in Hull), 43 from diarrhœal diseases, and 31 from scarlet fever. No death from any of these diseases occurred last week in Huddersfield; in the other towns they caused the lowest death-rates in Portsmouth, Burnley, and Newcastle, and the highest rates in Norwich, Nottingham, Salford, and Sheffield. The greatest mortality from measles occurred in Wolverhampton and in Liverpool; from whooping-cough in Bristol, Nottingham Oldham, and Sunderland; from "fever" in Derby and in Hull; and from diarrhœal diseases in Oldham. The mortality from scarlet fever showed no marked excess in any of the large towns. The 75 deaths from diphtheria included 23 in London, 10 in Sheffield, five in Bristol, five in Leicester, and four in Leeds. No fatal case of small-pox was registered in any of the 33 towns; three new cases were admitted into the Metropolitan Asylums Hospitals during the week and remained under treatment on Saturday last, Jan. 26th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2078, against numbers declining from 2535 to 2171 on the four preceding Saturdays; 172 new cases were admitted during the week, against 163, 156, and 187 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had risen from 306 to 422 in the five preceding weeks, declined again to 394 last week, and were 142 below the corrected average. Influenza was certified as the primary cause of 16 deaths in London last week, against 10 and 20 in the two preceding weeks. The causes of 40, or 1·0 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Leicester, Salford, Leeds, and 10 other smaller towns; the largest proportions of uncertified deaths were registered in Nottingham, Liverpool, Manchester, and Blackburn.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 19·2, 21·9, and 24·0 per 1000 in the three preceding weeks, declined again to 21·1 during the week ending Jan. 26th, but was 3·2 per 1000 above the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 6·7 in Perth and 14·5 in Aberdeen to 21·5 in Paisley and 24·4 in Glasgow. The 663 deaths in these towns included 39 which were referred to whooping-cough, 18 to measles, 15 to "fever," 15 to diarrhœa, 11 to small-pox, and eight to diphtheria. In all, 106 deaths resulted from these principal zymotic diseases, against 76, 101, and 125 in the three preceding weeks. These 106 deaths were equal to an annual rate of 3·4 per 1000, which was 1·9 per 1000 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 29, 49, and 61 in the three preceding weeks, declined again last week to 39, of which 28 occurred in Glasgow, four in Dundee, three in Edinburgh, and two in Leith. The deaths from measles, which had been 12 and 23 in the two preceding weeks, declined again to 18 last week, and included eight in Edinburgh, seven in Aberdeen, and two in Dundee. The fatal cases of "fever" which had been two, two, and 14 in the three preceding weeks, further rose last week to 15, of which 11 were registered in Glasgow and three in Aberdeen. The deaths from diarrhœa, which had been 22 and 16 in the two preceding weeks, further declined to 15 last week, and included 12 in Glasgow. The fatal cases of small-pox, which had been three, two, and three in the three preceding weeks, further rose last week to 11, of which 10 were recorded in Glasgow and one in Greenock. The deaths from diphtheria, which had been eight and six in the two preceding weeks, rose again last week to eight, and included three in Edinburgh and two in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 105, 123, and 139 in the three preceding weeks, further rose last week to 145, but were 27 below the number in the corresponding period of last year. The causes of 19, or nearly 3 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 28·3 and 30·4 per 1000 in the two preceding weeks, declined again to 28·2 during the week ending Jan. 26th. During the past four weeks the death-rate in the city has averaged 29·1 per 1000, the rate during the same period being 18·5 in London and 21·7 in Edinburgh. The 187 deaths belonging to Dublin registered during the week under notice were 15 less than the number in the preceding week and included 20 which were referred to the principal zymotic diseases, against 23, 18, and 16 in the three preceding weeks; of these, eight resulted from whooping-cough, six from "fever," three from diarrhœa, two from diphtheria, and one from scarlet fever. These 20 deaths were equal to an annual rate of 3·0 per 1000, the zymotic death-rate during the same period being 1·4 in London and 2·5 in Edinburgh. The fatal cases of whooping-cough, which had been 10 and 12 in the two preceding weeks, declined again last week to eight. The deaths referred to "fever," which had been three in each of the three preceding weeks, increased to six last week. The 187 deaths in Dublin last week included 32 of children under one year of age and 59 of persons aged upwards of 60 years; the deaths of infants showed a decline, while those of elderly persons exceeded the number in the preceding week. Four inquest cases and four deaths from violence were registered during the week; and 77, or more than two-fifths, of the deaths occurred in public institutions. The causes of two, or 1·1 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING 1900.

Complete statistics relating to sickness and mortality during the year 1900 in each of the 43 sanitary areas of London are summarised in the accompanying table. The mortality figures relate to the deaths of persons actually belonging to the various sanitary areas, and are the result of a complete system of distribution of deaths occurring in the institutions of London among the various sanitary areas in which the patients had previously resided. With regard to the notified cases of infectious diseases in London during 1900, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to 7·7 per 1000 of the population, estimated at 4,589,129 persons in the middle of the year. In the three preceding years the rates had been 10·2, 8·3, and 9·3 per 1000 respectively. Among the various sanitary areas the lowest rates were 4·3 in St. Martin-in-the-Fields, 4·5 in St. George Hanover-square, 5·0 in Paddington, 5·7 in Kensington, and 6 0 in Chelsea, in St. James Westminster, in Hampstead, and in Clerkenwell; the highest rates were 9·3 in Bermondsey, 9·5 in Poplar, 10·1 in Plumstead, 10·5 in St. Saviour Southwark, 10·7 in Fulham and in Whitechapel, and 12·1 in St. George Southwark. The prevalence of small-pox in London during 1900 was greater than it had been in the preceding year; the new cases notified being 88, against 104, 32, and 29 in the three preceding years; of these, 16 belonged to Hackney, 9 to Fulham, 7 to Kensington, 7 to St. Pancras, and 7 to St. George-in-the-East sanitary areas. The number of small-pox patients admitted into the Metropolitan Asylums Hospitals during 1900 was 82 and one remained under treatment at the end of the year. The prevalence of scarlet fever in London during 1900 showed a considerable decrease compared with that recorded in the preceding year, the number of cases notified being 13,809, against 22,850, 16,894, and 18,094 in the three preceding years; this disease was proportionally most prevalent in Fulham, Whitechapel, St. George Southwark, Greenwich, Lewisham (excluding Penge), and Plumstead sanitary areas. During the year under notice 10,734 scarlet fever patients were admitted into the Metropolitan Asylums Hospitals, against 15,256, 12,480, and 13,641 in the three preceding years; the number of cases under treatment, which had been 3506, 2883, and 2797 at the end of the three preceding years, had further declined to 2460 on Saturday, Dec. 29th last. Diphtheria showed a slightly decreased prevalence in London last year, the cases notified being 11,994, against 11,855 and 13,692 in the two preceding years; this disease showed the greatest proportional prevalence in Fulham, Stoke Newington, Poplar, St. Saviour Southwark, St. George Southwark, Bermondsey, and Lee sanitary areas. The Metropolitan Asylums Hospitals contained 1679 at the beginning of 1900; 8777 cases were admitted during the year, and 1343 remained under treatment at the end of December last. The prevalence of enteric fever in London during the year under notice showed a slight decline from that recorded in the preceding year, the number of notified cases being 4306, against 3024 and 4456 in the two preceding years; among the various sanitary areas this disease

ANALYSIS OF SICKNESSA ND MORTALITY STATISTICS IN LONDON DURING THE YEAR 1900.

(Specially compiled for THE LANCET.)

SANITARY AREAS.	Estimated population in the middle of 1900.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.											Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Simple continued fever.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON...	4,589,129	88	13,809	11,994	7	4306	74	237	4771	5	35,291	7·7	4	1928	361	1539	1945	2	716	7	3532	10,034	2·19	83,732	18·3	158
West Districts.																										
Paddington	130,104	5	306	153	2	56	3	6	123	—	654	5·0	—	50	5	27	35	1	8	1	95	222	1·72	2069	15·9	165
Kensington	173,603	7	366	336	—	106	10	9	160	—	994	5·7	—	98	4	27	33	—	17	—	107	288	1·66	2730	15·8	180
Hammersmith	110,203	2	352	252	—	103	2	6	113	—	830	7·6	—	90	7	28	10	—	17	—	95	247	2·23	1887	17·2	162
Fulham	136,383	9	552	642	—	92	2	9	153	—	1459	10·7	—	81	23	66	54	—	18	—	145	387	2·86	2350	17·3	147
Chelsea	96,715	2	233	180	1	81	3	7	71	1	579	6·0	—	33	7	18	18	—	19	—	75	170	1·77	1732	18·0	149
St. George Hanover-square	81,133	2	167	91	—	55	3	1	47	—	366	4·5	—	6	6	11	11	1	11	—	17	63	0·78	1119	13·8	107
Westminster	51,657	—	122	105	—	31	—	—	53	—	315	6·1	—	20	1	8	15	—	9	—	22	75	1·46	1062	20·6	189
St. James Westminster	21,457	—	62	39	—	12	—	—	16	—	129	6·0	—	6	1	4	2	—	3	—	7	23	1·08	344	16·1	154
North Districts.																										
Marylebone	139,777	5	382	216	—	82	—	5	200	—	890	6·4	2	49	12	40	55	—	12	1	88	259	1·86	2627	18·9	125
Hampstead	81,766	—	224	160	—	50	—	4	50	—	488	6·0	—	21	4	31	9	—	9	—	22	96	1·18	922	11·3	100
St. Pancras	245,651	7	658	590	—	356	1	11	234	—	1857	7·6	—	126	10	72	105	—	64	1	202	580	2·35	4639	18·9	160
Islington	351,541	2	1088	637	1	267	6	16	294	—	2311	6·6	1	161	25	105	147	—	49	1	178	667	1·90	5723	16·3	145
Stoke Newington	35,718	—	126	130	—	24	—	4	30	—	314	8·8	—	2	4	14	11	—	6	—	14	51	1·43	449	12·6	108
Hackney	225,519	16	695	622	1	228	5	15	230	—	1812	8·1	—	33	19	59	112	—	43	—	210	476	2·11	3624	16·1	158
Central Districts.																										
St. Giles	36,870	—	98	60	—	33	—	1	51	—	243	6·6	—	11	4	8	14	—	5	—	19	61	1·67	671	18·2	118
St. Martin-in-the-Fields	11,865	—	24	13	—	10	—	—	4	—	51	4·3	—	—	—	2	1	—	3	—	4	10	0·84	209	17·7	148
Strand	22,748	—	79	39	—	10	1	—	9	—	138	6·1	—	5	1	3	5	—	4	—	8	26	1·14	464	20·5	135
Holborn	29,188	—	99	67	—	24	1	—	41	—	232	8·0	—	21	4	5	11	—	4	—	24	69	2·37	770	26·5	240
Clerkenwell	66,007	—	138	121	—	60	1	1	75	—	396	6·0	—	39	10	18	52	—	6	—	54	179	2·71	1413	21·5	167
St. Luke	40,655	—	96	76	—	32	—	1	58	—	263	6·5	—	30	2	13	35	—	6	—	46	132	3·25	1085	26·8	138
City of London	26,922	—	83	66	—	29	—	—	21	—	199	7·4	—	4	5	6	3	—	2	—	4	24	0·89	591	22·0	176
East Districts.																										
Shoreditch	120,641	3	327	354	—	126	2	8	171	—	991	8·2	—	76	16	57	48	—	14	1	152	364	3·02	2604	21·6	186
Bethnal Green	128,831	4	370	407	—	153	1	8	234	—	1177	9·2	—	63	12	63	94	—	18	—	105	355	2·76	2822	22·0	168
Whitechapel	82,220	1	399	262	1	79	—	6	128	—	876	10·7	—	31	11	19	23	—	9	—	49	142	1·73	1589	19·4	139
St. George-in-the-East	48,875	7	138	118	—	65	—	7	85	—	420	8·6	—	20	6	14	27	—	10	—	50	127	2·61	1187	24·4	162
Limehouse	58,944	1	172	180	—	75	1‡	2	107	—	538	9·2	—	83	13	17	56	—	7	—	65	241	4·10	1534	26·1	228
Mile End Old Town	113,781	1	334	297	—	119	—	6	176	—	933	8·2	—	60	7	35	58	—	22	—	106	288	2·53	2311	20·4	158
Poplar	170,968	2	498	645	1	268	2	10	194	—	1620	9·5	—	78	8	115	104	—	47	—	217	569	3·34	3803	22·3	192
South Districts.																										
St. Saviour Southwark	23,854	—	82	116	—	27	—	2	23	—	250	10·5	—	10	—	15	12	—	6	—	27	70	2·93	600	25·2	197
St. George Southwark	60,597	—	251	221	—	179	1	3	75	—	730	12·1	—	36	11	23	43	—	12	—	88	213	3·53	1652	27·3	209
Newington	125,138	1	356	447	—	101	—	10	134	1	1050	8·4	—	70	11	70	65	—	21	—	118	355	2·85	2727	21·9	171
St. Olave Southwark	10,909	—	37	14	—	7	—	—	9	—	67	6·2	—	5	1	3	8	—	—	—	3	20	1·85	231	21·2	120
Bermondsey	85,920	—	258	352	—	120	—	6	60	—	796	9·3	—	42	7	59	64	—	27	—	78	277	3·24	1948	22·7	186
Rotherhithe	41,246	—	102	113	—	77	—	3	71	—	366	8·9	—	40	6	26	22	—	10	—	36	140	3·40	883	21·5	205
Lambeth	312,152	—	824	849	—	279	17	12	238	2	2221	7·1	—	69	21	101	98	—	53	1	176	519	1·66	5431	17·4	145
Battersea	178,100	—	545	316	—	205	1	6	164	—	1237	7·0	—	78	11	34	108	—	32		152	415	2·34	2985	16·8	159
Wandsworth	217,004	4	673	453	—	153	1	15	206	—	1505	7·0	—	82	17	44	44	—	27	1	146	361	1·65	3204	14·8	144
Camberwell	268,457	3	817	961	—	186	6	10	216	—	2139	8·0	—	40	12	132	122	—	33	—	195	534	1·99	4372	16·3	154
Greenwich	184,582	—	685	522	—	177	2	11	239	—	1636	8·9	—	58	15	64	111	—	23	—	147	418	2·27	3305	18·0	161
Lewisham (excluding Penge)	93,548	—	418	311	—	59	—	4	70	—	862	9·2	—	20	9	32	49	—	14	—	76	200	2·14	1469	15·7	131
Woolwich	41,600	2	134	99	—	23	—	2	39	—	299	7·2	1	29	6	7	15	—	3	—	55	116	2·79	915	22·1	173
Lee	40,722	—	137	163	—	18	—	2	24	—	344	8·5	—	5	—	19	9	—	4	—	20	57	1·40	615	15·1	156
Plumstead	65,558	—	298	242	—	39	2	4	73	—	658	10·1	—	47	7	25	27	—	9	—	35	150	2·30	1065	16·3	129
Port of London	—	2	4	17	—	30	—	—	2	1	56	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

* Including 209 cases of membranous croup. † Including deaths from membranous croup. ‡ Bubonic disease.

NOTE.—In order to show uniform statistics for the year the changes made under the London Government Act (1899) are not taken into account in the above table.

was proportionally most prevalent in St. Pancras, St. George-in-the-East, Poplar, St. George Southwark, Bermondsey, and Rotherhithe. The number of enteric fever patients admitted into the Metropolitan Asylums Hospitals during 1900 was 2074, against 939, 1116, and 1835 in the three preceding years; 403 cases remained under treatment at the end of December last, against 406 at the end of 1899. Erysipelas showed the highest proportional prevalence in Bethnal Green, Whitechapel, St. George-in-the-East, Limehouse, Mile End Old Town, and Rotherhithe sanitary areas. The 237 notified cases of puerperal fever were 93 below the number recorded during 1899; 16 cases belonged to Islington, 15 to Hackney, 15 to Wandsworth, 12 to Lambeth, 11 to St. Pancras, and 11 to Greenwich sanitary areas.

During the year under notice the deaths of 83,732 persons belonging to London were registered, equal to an annual rate of 18·3 per 1000, against 17·7, 18·3, and 19·3 in the three preceding years, 1897–8–9; the average rate in the 10 years 1890–1899 being 19·4 per 1000. In the various sanitary areas the lowest death-rates were 11·3 in Hampstead, 12·6 in Stoke Newington, 13·8 in St. George Hanover-square, 14·8 in Wandsworth, 15·1 in Lee, and 15·7 in Lewisham (excluding Penge); the highest rates were 24·4 in St. George in the East, 25·2 in St. Saviour's Southwark, 26·1 in Limehouse, 26·5 in Holborn, 26·8 in St. Luke, and 27·3 in St. George Southwark. Taking the five groups of sanitary areas the rates of mortality during 1900 were 16·6 per 1000 in the west, 16·7 in the north, 18·0 in the south, 21·9 in the east, and 22·3 in the central. To the principal zymotic diseases 10,034 deaths were referred during the year under notice; 3532 resulted from diarrhœa, 1945 from whooping cough, 1928 from measles, 1539 from diphtheria, 725 from different forms of "fever" (including two from typhus, 716 from enteric, and seven from simple continued fever), 361 from scarlet fever, and four from small-pox. These 10,034 deaths were equal to an annual rate of 2·19 per 1000, against 2·57, 2·77, and 2·46 in the three preceding years, 1897–8–9. Among the various sanitary areas the zymotic death-rates ranged from 0·78 in St. George Hanover-square, 0·84 in St. Martin-in-the-Fields, 0·89 in City of London, 1·08 in St. James Westminster, 1·14 in Strand, and 1·18 in Hampstead, to 3·24 in Bermondsey, 3·25 in St. Luke, 3·34 in Poplar, 3·40 in Rotherhithe, 3·53 in St. George Southwark, and 4·10 in Limehouse. The four fatal cases of small-pox registered in London during 1900 were 39 below the corrected average number in the 10 preceding years; two cases belonged to Marylebone, one to Islington, and one to Woolwich sanitary areas. The 1928 deaths referred to measles were 886 below the corrected average number; among the various sanitary areas this disease showed the highest proportional fatality in Hammersmith, Holborn, St. Luke, Limehouse, Rotherhithe, and Plumstead. The 361 fatal cases of scarlet fever were 554 below the corrected decennial average; the greatest mortality from this disease occurred in Fulham, Clerkenwell, City of London, Limehouse, St. George Southwark, and Rotherhithe sanitary areas. The 1539 deaths referred to diphtheria were 706 below the corrected average number; among the various sanitary areas this disease was proportionately most fatal in Poplar, St. Saviour Southwark, Newington, Bermondsey, and Rotherhithe. The 1945 fatal cases of whooping-cough were 484 below the corrected average number; this disease showed the highest proportional fatality in Clerkenwell, St. Luke, Bethnal Green, Limehouse, St. Olave Southwark, and Bermondsey sanitary areas. The 725 deaths referred to different forms of "fever" were 101 above the corrected average number; among the various sanitary areas the "fever" death-rate was highest in St. Pancras, St. Martin-in-the-Fields, Poplar, St. Saviour Southwark, Bermondsey, and Rotherhithe. The 3532 fatal cases of diarrhœa were 153 above the corrected decennial average; this disease was proportionately most fatal in St. Luke, Shoreditch, Poplar, St. Saviour Southwark, St. George Southwark, and Woolwich sanitary areas. In conclusion, it may be stated that the mortality in London during 1900 from these zymotic diseases was in the aggregate more than 19 per cent. below the average.

Infant mortality in London last year, measured by the proportion of deaths under one year of age to registered births, was equal to 158 per 1000, against 166 in each of the two preceding years. The rates of infant mortality in the various sanitary areas ranged from 100 in Hampstead, 107 in St. George Hanover Square, 108 in Stoke Newington, 118 in St. Giles, 120 in St. Olave Southwark, and 125 in Marylebone, to 192 in Poplar, 197 in St. Saviour Southwark, 205 in Rotherhithe, 209 in St. George Southwark, 228 in Limehouse, and 240 in Holborn.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Staff-Surgeon J. E. Coad to the *Hotspur*. Surgeons: P. G. Williams to the *Alert*; P. H. Bannister to the *Rattler*; A. C. Renwick to the *Benbow*; M. L. B. Rodd to the *Phœbe*; J. Mowat to the *Vivid* for Devonport Dockyard; and H. W. Finlayson to the *Terpsichore*.

ROYAL ARMY MEDICAL CORPS.

Captain C. T. Samman proceeds to Woolwich for temporary duty in the Royal Arsenal. Colonel H. Comerford, P.M.O., South-Eastern District, having been placed on the sick list, his duties will be performed by Lieutenant-Colonel J. Lees Hall. Lieutenant-Colonel G. F. Poynder (r.p.) is appointed Medical Officer in charge of the troops at Bedford. Captain A. E. Milner has embarked for India.

THE KING'S MESSAGE.

The message of His Majesty the King to the Royal Navy was read at the Royal Naval Hospital, Haslar, by Inspector-General J. W. Fisher on Jan. 29th.

THE DEATH OF THE QUEEN.

Amongst the floral tributes sent to Osborne was a magnificent wreath from the sick and wounded soldiers at Netley Hospital composed of arum lilies, camellias, tuberoses, lilies of the valley, azaleas, tulips, hyacinths, and evergreen, and bearing the following inscription: "With deepest sympathy to our beloved Queen, from the sick and wounded at Netley." The officers of the hospital sent a floral crown.

DEATHS IN THE SERVICES.

Staff-Surgeon J. Steel, of the New South Wales Naval Forces, accidentally while on active service with the naval contingent at Taku in China, aged 45 years.

Captain Bernard Henry Frederick Leumann, I.M.S., suddenly on Jan. 7th at his residence, Wallington, in his thirty-second year. He entered the service in 1894 and was promoted to Captain in 1897.

SOUTH AFRICAN NOTES.

Lieutenant L. F. Forbes Winslow, R.A.M.C., was reported dangerously ill from enteric fever at Pretoria on Jan. 22nd.

The *Tantallon Castle* left for England on Jan. 17th, having on board Civil Surgeons E. A. Houseman, W. H. Pegg, and H. A. Ballance.

The *Salamis* left for England on Jan. 21st, having on board Civil Surgeons W. A. Stott, W. P. Park, and A. Taylor.

The *St. Andrew* left for England on Jan. 22nd, having on board Civil Surgeon R. M. W. Wilson.

THE WAR NEWS FROM SOUTH AFRICA.

Apart from the news of the proclamation of the Accession of King Edward VII. in the capital of what was once the South African Republic there is but little news of a satisfactory character to be chronicled. The war, as we are still compelled to term it, consists of fighting of a desultory character. It drags its weary course along, but has at the present moment reached a somewhat stagnant stage. Beyond a series of marauding attacks by the Boer forces in many directions, in which they occasionally succeed in doing a great deal of damage, as in the recent attack on the Kleinfontein mine at Johannesburg, there is nothing to record. We know little or nothing of the Boer plans or of the movements of De Wet and their other generals, and for the time being we hear next to nothing from Lord Kitchener or of the movements of General French and General Knox. This is the hot season in South Africa, and the weather is a possible cause of inaction, while the horses are getting needful rest. The deaths from disease are mainly attributable to enteric fever, which continues to be the chief source of sickness and inefficiency. The fighting, although on a small scale, is of frequent occurrence, and almost every encounter, however unimportant, nevertheless adds its quota of casualties to the list of killed and wounded.

LEAN'S ROYAL NAVY LIST.

This publication has now reached its ninety-third number and deals with the career of some 10,000 naval officers.

Among the contents of this well-known and useful compilation will be found the war and meritorious services of officers, the names of famous battleships, dates of commissions and retirements, royal orders, medals, decorations, &c., and the story of the services for which the Victoria Cross has been bestowed. Not the least valuable part of the book is the complete alphabetical list of the officers of the Royal Navy and Royal Marines. Messrs. Witherby and Co., 326, High Holborn, and Newman's-court, Cornhill, are the publishers.

Correspondence.

"Audi alteram partem."

"ISOLATION HOSPITALS."

To the Editors of THE LANCET.

SIRS,—Three of the 33 large towns of England and Wales may be dismissed from consideration because isolation in these towns has been carried out too imperfectly to give any value to their returns. Taking the 30 remaining large towns we find that 19 of these immediately after adopting notification, &c., commenced to increase their numbers of notified cases. The suggestion that the epidemic prevalence of scarlet fever is characterised by periodicity is negatived by the fact that these towns came under notification, &c., at varying periods. Amongst the towns and cities which did not yield an *immediate* increase London comes first. In the registration County of London there were notified, in 1890, 15,330 cases of this disease. There was a fall the following year to 11,398 cases. But the proof is absolute that the hospitals of the Metropolitan Asylums Board cannot be credited with this temporary improvement in the fact that the cases had mounted up in 1892 to the somewhat startling number of 27,093, and the year following to the enormous number of 36,901.

Other exceptions to the general rule of immediate increase in the number of notified cases on the adoption of notification, &c., are Bradford, with from 1881 to 1887 (inclusive) the following figures: 424, 408, 352, 493, 786, 1118, and 1308; Nottingham, from 1883 to 1889 (inclusive), 428, 384, 390, 351, 615, 643, and 1047; Hull, from 1890 to 1897 (inclusive), 377, 305, 497, 769, 744, 1062 1454, and 1495; Sunderland, from 1886 to 1890 (inclusive). 328 270, 506, 751, and 921; Derby, from 1890 to 1894 (inclusive), 346, 318, 470, 501, and 513; Plymouth. from 1889 to 1892 (inclusive), 470, 352, 239 and 1264 Finally, Wolverhampton, which from 1890 to 1894 (inclusive) had 500, 419, 242, 623, and 1096 cases. I am certain, Sirs, that the significance of figures such as these will not be lost on the readers of your valuable journal. They demonstrate plainly that the pest houses miscalled isolation hospitals are, regarded as preventive institutions, a delusion and a snare, a mockery which puts us as men trained in scientific pursuits to shame. If the sanitarian refuses to look this question squarely in the face depend upon it the economist will do it for him and that speedily, and it will be a day of humiliation for the former when this comes to pass.

Dr. A. J. Tonkin wishes me to explain why the number of notified cases diminished in Bolton during the years 1889 to 1894 (inclusive). It may have been for the same reason that the fall in 1896 in Nottingham followed the highest percentage of removals—namely, that the people of Bolton were learning by experience what the people of Nottingham were being taught by the sanitary authority—i.e., that hospital-treated cases could not be received back home with any degree of safety, the wisdom of sending such patients into the rural districts (where they would most certainly establish new centres of infection) being recognised. But if, for the purposes of argument, it be granted that "isolation" (strange misnomer!) was the cause, how comes it that the preventive institution which had reduced the number of cases in 1894 to 267 could not prevent the increase in 1895 to 495, in 1896 to 816, and in 1899 to 1226 cases? Again, if the reduction in 1896 in Nottingham was the result of the high percentage of removals the previous year, how does it happen that the high removal percentages of 1896 (86) and 1897 (90) did *not* prevent the enormous increase in 1899 to 2580 cases? Surely the increase from 517 (1897) to 931 (1898) and 2580 (1899) is a strange harvest for a preventive institution to reap!

To turn to a city in which Dr. Tonkin is peculiarly interested—the city of Manchester—there was a decided fall in the number of notified cases in that city in the years 1897-98, but your correspondent would hardly credit "isolation" with this passing improvement seeing that, from her earliest experience of notification, &c., Manchester had steadily increased her annual number of notified cases up to that period. Here are her figures.

Year.	Cases notified.	Percentage of Removals.
1891	1138	61·9
1892	1671	58·8
1893	2031	58·3
1894	2230	66·0
1895	2302	71·3
1896	2387	73·9
1897	1790	79·7
1898	897	73·1
1899	1461	75·0

Compare Manchester with her suburb, Gorton, and we shall find that a high percentage of removals is but a broken reed at best.

In his annual report (1898) Mr. A. W. Martin indicated pretty clearly to what, in his judgment, must be attributed the spread of scarlet fever. Gorton, with its exclusively working-class population, is compared with 12 of the large towns and Manchester. His words are:—"Out of each 1000 of the population the following numbers of scarlet fever cases occurred: average of five years, 1892-96, 12 notification towns, 4·43; Manchester, 4·05; Gorton, 3 3. The 12 notification towns and Manchester remove over 50 per cent. of their cases. Gorton 15 to 20 per cent."

Dr. Tonkin thinks that I am accusing him of unworthy motives when I suggest that he should have carried the upward curve for Nottingham (1899) to 2580 instead of leaving it at the point 1500. Not so. I passed lightly over the omission because I saw, in the first place, that he was unable *without nearly doubling the size of his chart* to get the splendid (!) results achieved by this city into it; and I had another reason which Dr. Tonkin may or may not appreciate: I thought I recognised in your correspondent a fair-minded opponent whom it would have gone "against the grain" to treat with undue severity. In the same spirit I pass over his observations about return cases, contenting myself with the remark that the accepted definition of a "return" case is "a case arising *in the home* to which a discharged patient has returned within three weeks of such return." Dr. Tonkin has joined issue with me in the judgment I have passed on this absurd definition when he claims that cases which arise through contact with discharged patients elsewhere than in the home should be classified as "return" cases.

In conclusion, Sirs, I should like to call attention to a cognate question of supreme importance to the people of this country—What is the explanation of the extraordinary prevalence of diphtheria at the present time? What baleful part is being played by the isolation hospitals in this matter? Last year in the registration county of London there were notified 13,711 cases of diphtheria. In Leicester the number of cases largely exceeded the number of scarlet fever cases. Is the explanation to be found in the *protracted infectivity* of hospital-treated cases to which I have frequently called attention? It would seem so from a case to which the medical officer of health (London) calls special attention. "A remarkable instance was that of a child who had been discharged from the hospital in August. Her mother contracted diphtheria in October and the child being sent to her father he also caught the disease. Later she went to stay with relatives in Fulham and her cousin got diphtheria. A visit to her uncle and aunt at Kingston was equally unfortunate, for both those relatives fell victims to the disease." Is this at all like anything we see in private practice?

I am, Sirs, yours faithfully,

Nottingham, Jan. 12th, 1901. EDWARD DEAN MARRIOTT.

THE SALE OF DRUGS UNDER THE PHARMACY ACTS.

To the Editors of THE LANCET.

SIRS,—It is my duty to inform you that a joint meeting of the Glasgow Southern Medical Society, the Glasgow and West of Scotland Branch of the British Medical Association, and the Glasgow Eastern Medical Society was held in

Glasgow on Jan. 23rd, 1901, to consider the action of the General Medical Council in their recent decision respecting the sale of drugs and poisons by persons not qualified to act as pharmaceutical assistants under the Pharmacy Acts. The following resolutions were adopted:—

That this meeting, having considered the recent circumstances of the action of the General Medical Council, is of opinion (1) that a written representation be made to that Council that their recent decision is, in the opinion of this meeting, unwarrantable in terms of the indictment and interferes with the rights and privileges of the profession as embodied in the Medical and Pharmacy Acts: and (2) that a committee of this meeting be appointed to oppose the Pharmacy Act (Amendment) Bill before the coming session of Parliament and to call the attention of the licensing bodies and the universities thereto.

There were reporters present at the meeting and a fairly full and accurate report of the proceedings will be found in the Glasgow daily papers of Jan. 24th, 1901.

I am, Sirs, yours faithfully,
AND. WAUCHOPE.
Editorial Secretary, Glasgow Southern Medical Society.
Crown-street, Glasgow, Jan. 26th, 1901.

"WHAT IS 'COGNAC BRANDY'?"

To the Editors of THE LANCET.

SIRS,—Unwilling as we naturally are to encroach upon your space at such a time as the present, we yet trust that you will give us an early opportunity of replying to certain remarks which appeared in THE LANCET of Jan. 26th that are calculated to unduly prejudice the British public against the trade in cognac brandy in general and against our two firms in particular. We refer to your notes regarding a case heard on Jan. 14th in Dublin before the Lord Chief Justice and a special jury, in the course of which one of the defendants is reported to have said that such a thing as cognac made from Cognac grapes exclusively did not exist on the market.

Cognac, as everyone knows, is a town, not a vineyard, and the Cognac district has always been recognised as comprising the departments of the Charente and Charente Inférieure, a geographical, not a qualitative distinction. Assuming, therefore, that by "Cognac grapes" the defendant meant grapes grown in the Cognac district, we have no hesitation in stating that he betrayed, to say the least of it, a lamentable ignorance of the subject with which he was dealing. In proof of this we have only to point to the fact that there are now being offered on the market brandies of the last vintage, the pure produce of the Charente, which cost the English importers less than did the vintage of 1878 and many others of the ante-phylloxera days. His allegation that our brandies were made in the same way as his own we can afford to leave to the opinion of the public who are the best judges of fine quality.

No fear need be entertained on the score of the supply of good cognac brandy at moderate prices, for the vineyards have been extensively replanted and the stocks of pure brandy in the hands of the Cognac shippers are larger than they have been at any time since the visitation of the district by the phylloxera.

We are, Sirs, your obedient servants,
JAS. HENNESSY AND CO.
Cognac, Jan. 28th, 1901. MARTELL AND CO.

"THE EFFICIENCY OF LIQUID EXTRACT OF ERGOT."

To the Editors of THE LANCET.

SIRS,—I think most practitioners will agree with Mr. J. C. McWalter that the ordinary liquid extract of ergot is a most unsatisfactory preparation. I have used it largely, have tried many preparations and have found them all inert. On the other hand, I think if there is an established fact in medicine it is the power of ergotine to arrest hæmorrhage. It matters not whence the hæmorrhage proceeds, from the uterus, the stomach, the lungs, or the nostrils, I have found it equally efficacious. Ergot and uterus are like hand and glove and need no illustration. In profuse epistaxis and hæmoptysis there is no remedy, I think, equal to a hypodermic injection of ergotine. Time and again I have seen this, and that, too, after all other methods of treatment had failed. The objection that abscess is very apt to follow the subcutaneous treatment is not of much weight. Only once have I seen this result and that was in a case of post-partum hæmorrhage, when I had to trust to the nurse to perform the operation. She simply inserted the nozzle of the syringe under the skin instead of plunging it boldly into the muscular structure. If this latter instruction is observed I believe bad effects will be rarely seen. I agree with all that Mr. McWalter says, and only add that the sooner the preparation called liquid extract of ergot is banished from the Pharmacopœia the better.

I am, Sirs, yours faithfully,
J. BRISBANE, M.D. Glasg.
St. John's Wood-road, N.W., Jan. 28th, 1901.

"THE EXAMINATIONS FOR THE SWISS FEDERAL DIPLOMA."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Jan. 26th, p. 282, a letter appears from Dr. Edward H. Douty describing the above examinations in rather lurid colouring. Amongst other things he says: "I am the first Englishman to obtain the diploma under these regulations. It is 10 years since they were enforced, and meanwhile only one Englishman has attempted, and no one has succeeded, in obtaining the diploma." This might lead your readers to assume that Dr. Douty is the only English practitioner who has passed successfully the Swiss medical examinations. This is not the case. I myself obtained the Swiss diploma by passing the full curriculum for qualified practitioners in May, 1891, and there are half a dozen others who have done the same. In his success Dr. Douty forgot his colleagues at the moment of penning his communication to you.

I am, Sirs, yours faithfully,
TUCKER WISE,
Montreux. Swiss Federal Diploma.

PROPOSED ALTERATION IN THE MANAGEMENT OF NEW YORK CITY HOSPITALS.

(FROM A CORRESPONDENT.)

THE hospitals in the United States are for the most part administered very differently from similar institutions in Great Britain. In the first instance, it must be understood that, as a rule, the hospitals throughout this country are not endowed and are consequently either dependent upon the municipalities of the towns in which they are situated for the necessary funds to support them or derive their income from paying patients. There are few entirely charitable hospitals in the United States. The large majority of them charge any sum from five dollars (£1) weekly to 50 or 60 dollars (£10 or £12) weekly for the privilege of being an inmate and of receiving medical or surgical attendance. In almost all the larger cities, however, there are one or two hospitals the expenses of which are borne by the citizens. In New York, for example, the Bellevue Hospital, with its subsidiary hospitals, Gouveneur, Haarlem, and Fordham Hospitals, and the Emergency Hospital for Women, are a part of the Department of Public Charities, for the administration of which a grant is made by the city each year. If the money thus set aside were wholly devoted to the best interests of these institutions and of the patients therein this system would probably work fairly well. Unfortunately, it is contended by the opponents of this system that this is not the case and that politics play an important part in the management of the New York city hospitals.

Some time ago Mr. Theodore Roosevelt, the energetic Governor of New York State, appointed a commission, called the Charter Revision Commission, whose duty it was to investigate closely and to propose reforms where considered necessary in the several charters of New York city. This commission has recently completed its session and has published a voluminous report detailing reforms which it has judged would be of benefit to the city at large. Among the proposed amendments is one dealing with the control of the city hospitals. The amendment in question provides that on Feb. 1st, 1902, the control and management of Bellevue Hospital, including its subsidiary institutions, Gouveneur, Haarlem, and Fordham Hospitals, and the Emergency Hospital for Women, shall be taken from the Department of

Public Charities and be vested in a board of trustees appointed by the mayor. If this proposed amendment becomes law Bellevue and its branch hospitals will be brought under the same system of trustee management which now prevails in private hospitals in this and other cities as well as in the public hospitals of Boston and Cincinnati. This plan, which has been in force in Boston and Cincinnati for between 35 and 40 years, has been found to answer excellently. The hospitals in both the instances mentioned are models of their kind and will compare favourably with the best private hospitals in any American city. Their buildings are up-to-date and well equipped with all modern appliances for the investigation and treatment of disease, and they maintain a high standard of efficiency and discipline. In other large cities, as Philadelphia, Chicago, St. Louis, and San Francisco, the public hospitals are managed, as in New York, by the Department of Public Charities, which management changes with each change of the city administration. The hospitals being a part of a city department are regarded as belonging to the political party in power and form an important share in the distribution of party patronage. It may be asked, What would be the special gain to Bellevue Hospital from the proposed change of management? This question is so well answered by a writer in the Sunday edition of the *New York Sun* of Dec. 2nd, 1900, that I cannot do better than quote his words:—

> It will gain in the first place all that comes from a permanent and stable form of administration. Had Bellevue been governed by an intelligent board of trustees during the past 30 or 40 years, we should not have now the heterogeneous collection of buildings wholly unrelated to each other, and of widely differing styles of architecture, that bear the name of Bellevue Hospital. Nor would the Haarlem Hospital be occupying an old frame dwelling-house which was never intended for the purposes of a hospital, and which has been for years totally inadequate to the demands made upon it. Nor would Gouveneur Hospital be striving in vain to get into its new building—a building the construction of which was authorised in 1895, and which was completed more than a year ago. During the same period of time Boston and Cincinnati have erected modern hospitals suited in every way to the purposes for which they were built, and yet there has been no complaint on the part of the taxpayers of these cities, for they have before them the evidence that their money has been wisely and economically spent.
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> The second gain that may be hoped for from the proposed change will be the taking of Bellevue out of politics. All good citizens will surely agree that politics should have no place in the administration of an institution devoted to the care of the sick. That such a self-evident proposition has not been perceived, or at all events not been acted upon, before in New York, has probably been due to the fact that our public hospitals have always been a part of a great city department and as such have been naturally administered with the other institutions in the department by an official of the party in power. With the hospital taken out of the city department and provided with its own system of control and administration, running along smoothly from year to year, it will attract less and less the attention of the politicians. It may not come in the first year or the second year or the third, but surely in time the persons selected to serve on the board of trustees will be chosen because of their personal fitness for the place and not because of their party affiliations.
>
> In the third place, Bellevue will be the gainer because it will be made a specific city interest, independent of the other institutions in the Department of Public Charities. The patients in Bellevue are not paupers; they are for the most part working men and working women who by reason of illness or injury are temporarily prevented from earning a living. They cannot afford medical care and nursing at their own homes, and go to their only place of refuge, the public hospital. And it is only the part of a wise policy on the part of the city to make them well again and self-supporting as soon as possible. It is not just, it is not humane, to class them with paupers and thus to rob them of their self-respect. Bellevue has too long been considered in the public mind as a paupers' hospital. Let us hope that this stigma will be removed under the new form of administration.

The advocates of the suggested alteration wish it to be distinctly apprehended that the measure has no political significance whatever and that no fault can be found with the attitude of the present Commissioner of Charities. It is the system and not the man which is to blame. At the same time, it is keenly felt that radical changes in hospital management in New York are clearly indicated and it is earnestly hoped that the proposals tending in this direction may become law. The point is a moot one as to whether the British system of absolutely free hospitals or the method of hospital management chiefly prevailing here, in which all patients, except in a few institutions, pay for their board and medical attendance, is the best. Undoubtedly the British system has a tendency to pauperise, while, on the other hand, the great majority of American hospitals are closed to those who cannot afford to defray the expenses of their keep and attendance. A judicious mingling of the two methods might evolve the ideal hospital. Until, however, that happy day arrives the only thing to be done is gradually to improve upon the present system, and I feel convinced that the proposal of the commission in New York is a step in the right direction.

Jan. 22nd.

CERTAIN ASPECTS OF CONSCRIPTION.

(FROM A CORRESPONDENT.)

[RECENT events have brought into prominence the question as to whether conscription will be rendered necessary in this country if Britain is to hold her own in the world. A pamphlet on Army Reform by Lieutenant Colonel Hime[1] attempts to show that conscription need not take the form usually suggested and that it might conceivably be carried out without injury to the worldly prospects of those affected by it. Events which have happened since the pamphlet was published have proved that misgivings as to the state of the British forces which at the time were considered pessimistic have been more than realised. These circumstances have moved a valued correspondent to address us upon certain aspects of conscription. We are not prepared at the present moment to endorse or controvert the views either of Lieutenant-Colonel Hime or of the writer of the article which follows. But as it is good that medical men, the guardians of the national health, should give the whole subject of conscription their attention, we put before our readers some apposite food for reflection.—ED. L.]

The difficulty of obtaining recruits for the army is no new one in England. Formerly large bounties were paid on enlistment. In the year 1775 the Minister of War found that he could not raise the army to its proper strength. In 1804 the bounty rose to 16 guineas, and although the prisons and the hulks were emptied to supply men to serve, yet in 1806 the army was much below the proper establishment. At that time Mr. Wyndham declared that Parliament would have to decide how they could ensure to this country what unquestionably it had never previously had—an unfailing supply of regular soldiers. Even now in the year 1901 in a time of war it does not seem to be possible to obtain a sufficient number of recruits to serve in the army. One thing is quite certain. Criminals should not be enlisted. At the beginning of the present war one or two of the London stipendiary magistrates were inclined to deal leniently with prisoners who promised to join the army. It is extremely bad for a regiment to have such recruits. It should not be forgotten that the conditions of the service have greatly altered since the beginning of the last century. At that time the method of enforcing discipline both in the army and in the navy was characterised by a severity which appears to-day to be absolutely brutal. There are, for instance, in some of Marryat's novels records of incidents which are really horrible, but which were true pictures of events which were formerly of daily occurrence.

At the present time whilst the conditions of life in the services have vastly changed for the better there is no less difficulty in regard to recruiting. How is this to be accounted for? Colonel Hime unhesitatingly says that it is due to the present industrial prosperity and he agrees with M. Comte, the Positivist philosopher, that in the continuous decline of the military spirit and in the gradual ascendancy of the industrial spirit we see the repugnance of modern society to a military life and that for this reason compulsory service becomes more and more necessary. As the military spirit declines the industrial spirit increases, wages rise, and the condition of the labouring classes improves. The increase in wages and the dislike for discipline cause a falling off in the relative number of men who are willing to serve in the army. These causes were working steadily during the latter part of the last century. The only way to overcome the difficulty has been from time to time to increase the inducements to enlist. But at the present time the cost of the army is very considerable and the increase in the expense is not only due to some addition to the pay but to improvements in the food, in the clothing, in the bedding, in the barracks, and to payments made for good conduct and for the expenses of recreation rooms. In spite of recent improvements the life of a soldier is not sufficiently attractive to draw anything like the full number of the men required; yet, roughly speaking, the army

[1] Army Reform, a Question for the People. By Lieutenant-Colonel Henry H. L. Hime, late Royal Artillery. London: Edward Stanford, 26 and 27, Cockspur-street, Charing-cross, S.W. Price 1s.

estimates have about doubled since the year 1853. Should the expenses of the army go on increasing at this rate it seems certain that the country would be unable to stand the financial strain—"our entire revenue applied exclusively to military purposes," according to the late Professor Cairns, "would not suffice for the drain." Our present system had proved to be a failure at the time that Colonel Hime's pamphlet was written. "We have been obliged," Lord Lansdowne had already confessed, "to fill up battalions which ought to be at home with young soldiers and send them to the Mediterranean, thus filling our garrison there with troops unfit to take the field."

Colonel Hime gives an account of the various periods of service for which enlistment has taken place. He classifies them into four divisions: (1) life service; (2) long service (for example, 21 years); (3) medium service (say, seven years); and (4) short service (three years). In the case of life service a man had no anxiety in regard to his future, but life service was objectionable from a medical point of view; the period of life during which a man is a really effective soldier falls far short of the ordinary span of life. Long service was found to be very expensive and it made no provision for a reserve. From a medical point of view it seems that the term of seven years is the best. During this period the death-rate from ordinary causes is less amongst soldiers than it is amongst the male civil population of healthy districts in England and Wales. At the end of seven years' service the death-rate amongst soldiers increases more rapidly than does that of the male civil population. The question arises, What effect has a seven years' service on the man who serves for that period? It is true that the earlier and best years of his life are those in which a man most easily establishes his position in the world and his after-career usually depends on this. When a soldier leaves the army at 23 or 24 without pension he finds that his contemporaries have passed him in the industrial race. Now, should he leave without further liability to military service it may be reasonably argued that the Government ought to give him any suitable employment which can be found for him, but if he should go into the reserve it would be unwise to employ him in a Government office; it would be unwise to man the postal or the telegraph service or the arsenals with men who would be called out in case of an invasion, for at such a time telegraph clerks and railway porters could not be spared to leave the duties with which they are acquainted at the exact period at which their services would be most required. The method recommended by Colonel Hime for getting over the present *impasse* is that two distinct armies should be formed—a foreign army and a home army. In the case of the foreign army the period of enlistment should be either for long or for medium service, but in the case of the home service it need not be sufficiently long to injure a man's career as a civilian.

What is the least period of training which will serve to turn a civilian into an efficient soldier? Would one year's service if properly spent suffice to train an infantry soldier? With the present system of education Colonel Himes says emphatically it would not. But instruction could be given at high pressure and considerable modification could well be made in the present system. In the case of a one year's service all the available time should be spent in shooting, in route-marching, and in light infantry drill. Elaborate drill should be superseded by the few and simple movements which are required in modern war. No courses in the "polite accomplishments" are necessary, and the gymnastics taught would be confined to their elements. Now, from a medical point of view a year spent in drill in shooting, and in gymnastics would be certainly an advantage to most Englishmen. This course of instruction, if it were continuous and practical and confined to essentials, and if, moreover, as would be undoubtedly the case, men of a higher intellectual calibre than that of the present recruits were enlisted, would make good soldiers, Colonel Hime maintains, in one year. Artillery and cavalry soldiers would need, however, 18 months at the least. The infantry of the home army, under the system suggested, would consist of short-service soldiers who would only be sent out of the country in time of war.

The argument up to this point is briefly as follows: There is an insufficient supply of men; if men are to be attracted by increase of pay the cost will be ruinous. Now, what is to be done? What are the alternatives? There are two. One is that we should do without an efficient army, in which case the fate of other nations will be ours, and probably at no distant date. We should follow in the wake of Persia, of Greece, and of Rome. If the people are content to renounce our Empire our military defects may be disregarded. The other alternative is conscription. The "liberty of the subject" would be no more endangered by compulsory military service than it has been by compulsory education. No one would suggest that it was prudent to wait for the outbreak of a great war before making the necessary changes in the army.

Several modifications of conscription have been tried, but reference need only be made to universal conscription with substitution[2] or with dotation,[3] limited conscription,[4] and universal conscription. All systems except universal conscription are bad because they are founded on the theory that some men are bound to defend their country and some are not. Universal liability to military service should be enforced. This would give a first line of defence and large reserves at a less cost than that of the present home army, it would absorb the present auxiliary forces and fuse the home army into one harmonious whole.

It is suggested that it would be absolutely necessary to the success of the scheme to abolish the auxiliary forces. When England was threatened with invasion by Napoleon I. the English Government tried to put in force the ballot for the militia and passed a recruiting law, but they unwisely excepted volunteers from the provisions of the Act. The effect produced was summed up by Mr. Wyndham in the House of Commons: "Mr. Addington," he said, "has not only not provided an army, but has rendered it impossible that an army should be provided," for the volunteer system had either by design or mistake locked up 400,000 men of the active population of the country. The defences of England could not be entrusted to volunteers. Discipline is by no means a military fiction, and it is, as Mill pointed out, acquired only by practice. Military service is not, and ought not to be thought to be, derogatory to a "free-born citizen," nor would submission to military rule be injurious to the moral and intellectual development to those affected. These arguments are of great force. The training which would be obtained by young men during an impressionable part of their life—training both physicial and mental—would be of the greatest advantage to them in after-life. The power of being able to walk well, the training of the eye, of the hand, and of the intellect required in becoming a good shot—these are things which would be of special benefit to the middle and to the lower classes. The life to healthy young men would be by no means an unpleasant one, and they would gain not only in muscular power but also in mental training and obtain experience which would be of use to them for the remainder of their lives. Doubtless many of them would afterwards look back upon their year of military service as the happiest time they had ever spent. There is no doubt also that discipline, the want of which is so sadly in evidence amongst many of the rising generation, would be of the greatest possible service, not only to those brought directly under its influence, but also to all the people with whom those who have been affected by it come into contact in after-life. When universal conscription has been introduced no man below a certain age who has not creditably served his year of military service should be admitted to the privileges of English citizenship. No man who has not made himself capable of defending his country has any moral right to have a voice in its government.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Loss of Life in India from Wild Animals.—The New Year's Honours for Plague-workers.—The Return of Lumsden's Horse from South Africa.—The Plague Epidemic: Recrudescence in Bombay City and Threatenings in Calcutta.—Jail Appointments in India.

A RECENT report shows that 2966 people died last year from the attacks of wild beasts and no less than 24,621 people from snake-bites. The Bengal Presidency is by far the chief sufferer, as 1632 people were killed by wild animals and

[2] Under this system a man is allowed to pay another to serve in his stead.

[3] Under this system a man can make a payment instead of serving.

[4] This system has been adopted in England. The classes affected have been imprisoned debtors (1695-1702), criminals (1702), and paupers (1703).

12,220 died from snake-bites. The large number of snake-bites is partly attributed to floods which drove the snakes to higher ground where the natives dwelt. The numbers killed by the different wild animals are as follows: 899 by tigers, 338 by wolves (chiefly in the North-West Provinces), 327 by leopards, 95 by bears, 40 by elephants, 27 by hyenas, and 1230 by other animals, chiefly jackals and crocodiles. In addition to human beings no less than 100,000 head of cattle were killed, of which 37,986 were killed by leopards but only 9449 by snakes. There is, of course, a constant warfare between man and these wild animals, and notwithstanding that 1570 tigers, 4548 leopards, 2317 wolves, 776 hyenas, and 94,548 snakes were killed during the year the battle inclines in favour of the wild beasts. There is an impression in many places that some of these deaths ought really to be put down to murder. When a native wants to get rid of an inconvenient relative it is very easy in some places to put down his disappearance to a wild animal.

The New Year's Honours' list for India contains but few names of plague-workers. Amongst the many who have borne the brunt of the epidemic during the past year I note but five who have been officially rewarded. The Companionship of the Star of India is given to Major John Crimmin, V.C., I.M.S., port health officer, Bombay, and the Kaiser-i-Hind Gold Medal to Lieutenant-Colonel Wilkins, I.M.S., late special medical officer of plague operations in Bombay city. The Kaiser-i-Hind Silver Medal is given to Miss Alice Cathorm, M.B., now at Poona; to Lieutenant-Colonel Sutherland, late plague officer, now in Bombay; and to Miss Ellen Smithi, nursing sister, of Bombay.

The Volunteeer contingent from India (Lumsden's Horse) have just returned. On their departure I described their excellent physique and suitability for the particular work. It is satisfactory to find that their casualties have been very few and that sickness has been almost absent among them. Out of 250 men only two have died from sickness and only six deaths occurred altogether. The total casualties were only 24. These figures show how good their physique was and they also show how well they have been cared for and treated.

The plague returns for the week throughout India are very discouraging. The mortality rose only from 2267 to 2298, but there has been a large increase in Bombay city (from 114 to 149) and in Western Bengal. The figures are: Bengal 1374 (Patna 791, Saran 323, Monghyr 165, Gaya 93, and Calcutta 50); Bombay Presidency 421 (Bombay city 149), Madras Presidency 15, the Punjab 7, and Mysore State 431. Private accounts say that in Patna there is a panic developing and that the people are flying from the place. The disease still lingers in the Punjab, 17 cases being reported in the Gurdaspur district. In Calcutta there were distinct signs of a recrudescence, many more plague deaths having occurred since the last returns were made up. The figures include so-called "suspicious deaths," but there is not much doubt that most of them are due to plague.

The prospects of officers joining the Jail Department have not been very promising and this service has become unpopular. Of the 40 central jails in India 30 are under the superintendence of officers of the Indian Medical Service. The permission to engage in private practice is not worth very much, because not only is the work becoming more and more harassing but the distance at which the jails are, as a rule, situated from large towns militates against the chances of an officer acquiring much private practice. The chances, again, of becoming an inspector-general are also remote because there are only five of these appointments in the country. I understand that certain proposals are on foot for bettering the prospects of this department.

Jan. 5th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Arsenical Poisoning in Liverpool.

THE public analysts (Professor J. Campbell Brown and Mr. W. Collingwood Williams), in pursuance of a resolution of the Health Committee, reported in reference to the recent outbreak of arsenical poisoning somewhat in the following terms. That from Nov. 27th, 1900, to Jan. 11th, 1901, and including also a few samples delivered since, the analyses of which were completed at the date of the report, 381 samples submitted by the city officials had been specially examined with the view of detecting arsenic and of distinguishing between a slight contamination and a substantial quantity of arsenic. Of 312 samples of beer 29 were seriously and 28 slightly contaminated; of five samples of brewing beer two were seriously contaminated; one sample of malt had a small quantity of arsenical smoke on the surface; of three samples of yeast all contained a slight incidental trace of arsenic; of 60 samples of confectionery, jam, marmalade, preserved fruits, syrups, and a few miscellaneous samples, it was satisfactory to find that none contained any trace of arsenical contamination. In the arsenical beer from all sources examined in the laboratory the most common proportion was a figure not far from one-tenth of a grain per gallon, more or less; some contained two or three times as much, some not much more than half that proportion. A few samples contained nearly three-fourths of a grain, more or less, per gallon, and one sample contained one and a half grains per gallon. Within 36 hours of the time when it was first known in Liverpool that arsenical sugar was the source of arsenic in beer samples of glucose and of beer were in the hands of the analysts; and within a few days such numbers of samples were being poured into the laboratory that it was at once evident that the emergency must necessarily be treated in a special manner by the medical officer of health, resulting in the destruction of thousands of gallons of suspected arsenical beer and the withdrawal from sale by the publicans and brewers of all beer objected to, whether actually poisonous or not, if it contained arsenic. Thousands of gallons of beer were thus removed from sale before the analysts could even have gone through the process of writing preliminary reports. Afterwards, when guilty knowledge could, perhaps, have been proved and proceedings before the magistrates taken with a likelihood of success, larger samples were purchased with all formalities required by the Acts. In these larger samples, so far as the city was concerned, arsenic was generally absent or in too slight a quantity to be estimated or to be of any sanitary importance. The use of arsenical sugar in Liverpool was now proved to be extinct. From Dec. 17th to Dec. 22nd, of 23 samples of beer examined none contained any substantial trace of arsenic. From Dec. 24th to Dec. 29th, of four samples of beer none contained any arsenic, but one sample of malt contained a small quantity. From Dec. 31st to Jan. 11th of 20 samples of beer none contained any substantial trace of arsenic, and of three samples of yeast all were very slightly contaminated with a trace too slight to be weighed.

Liverpool School of Tropical Medicine.

The annual dinner of the Royal Southern Hospital has been fixed for Feb. 12th and it has been decided to hold the dinner in connexion with the School of Tropical Medicine, which institution is indebted to the Royal Southern Hospital for the use of a special ward for the treatment of tropical diseases and is officially connected with that hospital. The dinner will be made the occasion publicly to acknowledge the services rendered by the School of Tropical Medicine, especially in the matter of sending important medical research expeditions to the tropics. The chair will be occupied by the chairman of the school (Mr. Alfred L. Jones), and the guest of the evening will be the Duke of Northumberland, K.G., who has taken an active interest in the work of the school. The Earl of Derby, K.G., and the Lord Mayor have also accepted invitations to the dinner.

The late Dr. Walter Myers.

A letter of sympathy has been received by the authorities of the Liverpool School of Tropical Medicine from the Secretary of State for the Colonies (the Right Hon. Joseph Chamberlain) in reference to the lamented death of Dr. Walter Myers, who, as stated in THE LANCET, was despatched in June, 1900, to Pará in Brazil for the purpose of investigating the origin of yellow fever. Mr. Chamberlain, in his letter to Mr. Alfred Jones, the chairman of the school, stated that "he had received with the greatest regret the news of the death of Dr. Myers in the service of humanity to which he had devoted himself. It will be a great loss to the Liverpool School and to the science of tropical diseases." Mr. Chamberlain also expressed in his letter his deepest sympathy with the family of the late Dr. Myers.

The David Lewis Northern Hospital.

The annual meeting of the supporters of the Northern Hospital was held in the town hall under the presidency of the Lord Mayor. The number of patients attended to during

the year had been 1855 in-patients and 8117 out-patients, involving 25 993 attendances. The ordinary expenditure had been £7956 odd, as against £7305 odd in 1899. There is a deficit of £5034, as against £3761 in 1899. The receipts from all sources had been £6683 8*s*. 7*d*. The sum of £1690 had been received from the Hospital Sunday and Saturday Fund, without which it would have been impossible to have done the work which had been accomplished. In future about £10,000 a year will be required to carry on the work of the hospital. It was decided to change the name of the institution to "the David Lewis Northern Hospital" in commemoration of the beneficent donor of the new hospital.

Notification of Phthisis.

At the recent meeting of the Health Committee the medical officer of health (Dr. E. W. Hope) was instructed to report on the institution of a system of voluntary notification of cases of phthisis, with payment to medical men of a small fee for each case notified.

Liverpool Royal Infirmary.

Dr. T. R. Glynn, the senior physician to the infirmary, retires from the active honorary staff in accordance with the age-limit of service. Dr. Glynn's retirement will create a void at the infirmary which it will be difficult to replace.

Jan. 30th.

WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Fees payable to Workhouse Medical Officers.

THERE has of late years been a disposition upon the part of public bodies to abolish the payment of officials by fees and to require that a fixed salary shall be an inclusive payment for all duties performed. When the Merthyr Board of Guardians recently increased the salary of Mr. J. L. W. Ward, the medical officer of the workhouse, a stipulation was made that the fees which he had formerly received should merge in his salary; the Local Government Board, however, will not sanction this arrangement in its entirety and insist that he shall still be paid by fees for vaccinations performed at the workhouse.

Hospital Accommodation.

A movement has been started to establish a cottage hospital at Treharris, a large colliery district adjoining Merthyr. The paucity of such institutions in the South Wales coal-fields has often been remarked. There is a general hospital at Merthyr and there are cottage hospitals at Aberdare and at Mountain Ash, in the Aberdare valley, and an accident hospital with 10 beds at Porth, in the Rhondda valley, but at Pontypridd, where there is a population of over 40,000 persons, no such institution exists, though the district council only a few months ago considered the desirability of erecting one and supporting it out of the rates, a course which was last year adopted at Barry.

Adulteration of Milk.

When retail milk-dealers are convicted for selling adulterated milk a common defence put forward is that the milk was sold as it was received from the farmer or milk-factor. When this plea was raised at Cardiff Police-court three weeks ago the stipendiary magistrate expressed the opinion that the wholesale dealers should also be proceeded against. A Somerset farmer accordingly appeared before the bench last week and pleaded guilty to the charge of adulterating two samples of milk which had been taken at the railway station. He was fined £15 in each case.

Sewage Disposal.

The appearance of a railway map of the district which lies between Newport and Cardiff on the south and Abergavenny and Merthyr on the north very much resembles the diagram of a gridiron. There are three lines running nearly east and west and these are crossed almost at right angles by numerous other lines terminating at the coast. These latter lines really indicate valleys which extend northwards. The question of dealing with the sewage of the townships which have been rapidly growing up along these valleys has for some time been prominently before those concerned with their sanitary administration. Until quite recently the construction of a main outfall sewer or sewers seemed to be the only practicable solution of the question, for the narrowness of some of the valleys and the difficulty there is in obtaining suitable land has almost precluded the possibility of treatment by irrigation; but since the successful installation elsewhere of septic tanks and bacterial filters this method of treatment is being put forward as the most desirable, and it is even said that the huge tips of refuse from the collieries will make excellent "contact beds." One great disadvantage attending the construction of main trunk outfalls discharging into the Bristol Channel is connected with the subsidences which occur all over the coal-fields and which make it possible for a sewer originally laid with an excellent fall to become level or even to fall the reverse way. The sanitary authorities governing the districts known collectively as the western valleys have after repeated conferences at last appointed an engineer to advise them as to the best scheme or schemes to be adopted either for the district as a whole or for individual localities.

Unsound Meat.

Cardiff is particularly well off in not having any private slaughter-houses, so that the difficulties attending the detection and seizure of unsound meat are very much less than they are in those towns which are not entirely dependent upon public abattoirs, but considerable vigilance is still required in order to prevent undesirable carcasses that have been slaughtered outside the borough being brought for sale within the town. Early in the present year a butcher exhibited for sale in one of the public markets the dressed carcass of a bull which had been drowned. Fortunately a sanitary inspector detected its condition and the owner last week was fined £20 in addition to the court costs, with the alternative of two months' imprisonment. The stipendiary magistrate warned him that in the event of a second conviction for a similar offence he would be sent to prison without having the option of paying a fine.

Prosecution under the Public Health Act.

In spite of repeated prosecutions the inhabitants of the Rhondda valleys persist in defying the law with respect to the exposure in public places of infected persons. At the Porth Police-court last week a collier was fined £3 for travelling by train to North Wales a fortnight after he had been attacked with scarlet fever. During the hearing of the case it transpired that the man had been given by the sanitary inspector a printed form upon which had been filled in the earliest day upon which he could go out of doors—a date which was six weeks from the first appearance of the rash—so that the defendant was unable to plead the usual excuse that he did not know how long he ought to have stayed in the house.

Bath Western Dispensary.

The annual meeting of the subscribers of the Bath Western Dispensary was held on Jan. 23rd, under the presidency of the Rev. J. Stedman. The medical report stated that 1001 patients had been attended during 1900, including 302 patients visited at their homes. The financial statement was satisfactory and showed a favourable balance of £63. The thanks of the committee were given to Mr. J. Davies and Mr. G. E. Bloxam, the medical officers, for their work during the past 12 months.

The late Professor Alfred Hughes.

At a meeting of the executive committee of the Hughes Memorial Fund held at Cardiff on Jan. 18th, under the presidency of Dr. W. T. Edwards, it was reported that the subscriptions now amounted to £700.

Newton Abbot Hospital.

The annual meeting of the subscribers of the Newton Abbot (Devon) Hospital was held on Jan. 24th. The medical report for 1900 was very satisfactory and the financial statement showed that the income amounted to £1552 and the expenditure to £1390, leaving a favourable balance of £162. The committee decided upon an alteration in one of the rules in reference to the admission of out-patients as it was considered that this department was abused.

St. Columb Workhouse.

At a meeting of the St. Columb (Cornwall) Board of Guardians held on Jan. 24th Mr. Preston Thomas, of the Local Government Board, reported that on Jan. 22nd he had visited the workhouse and found a scarlet fever patient being illegally nursed by an inmate. The chairman of the visiting committee said they had no isolation hospital and

the workhouse nurse was not allowed to go to infectious cases.

University of Wales.

Lord Tredegar and Dr. Isambard Owen have been appointed life members of the Court of the University of Wales in succession to the late Marquess of Bute and the late Rev. Principal Edwards.

Bristol Royal Infirmary.

Mr. Alfred Robinson, J.P., has given a donation of £1000 towards the funds of the Bristol Royal Infirmary.

Health of Falmouth.

Dr. W. K. Bullmore, the medical officer of health of Falmouth, reports that during 1900 there were 272 births, equal to a rate of 22·3 per 1000. The deaths numbered 195, equal to a death-rate of 15·9 per 1000, the population of Falmouth being estimated at 12,665. Dr. Bullmore states that owing to the epidemic of typhoid fever in 1899 there were 1044 tests applied to drains, 419 intercepting traps laid, 707 defective sinks replaced, and various other sanitary improvements made. During the year 350 children were vaccinated and no prosecutions took place.

Jan. 28th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The late Dr. Stevenson Macadam.

By the death on Jan. 24th of Dr. Stevenson Macadam the School of Medicine at Surgeons' Hall, Edinburgh, has lost one of its oldest teachers. Dr. Macadam was born in 1829. After working at chemistry for some time in Glasgow Stevenson Macadam succeeded his brother John as assistant to Dr. George Wilson in Edinburgh when his brother obtained the appointment of professor of chemistry in the University of Melbourne. In 1855 he started classes specially for the pharmaceutical students in Princes-street, and when Dr. Wilson was appointed Professor of Technology in the University Macadam became Lecturer on Chemistry in the School of Medicine. At the close of last summer session Dr. Macadam completed 50 years as a lecturer, in 45 of which he had been an independent teacher. He held the degree of Doctor of Philosophy from the University of Giessen and was a Fellow of the Royal Society of Edinburgh. He was an original member of the Institute of Chemistry and of the Society of Chemical Industry. As a lecturer his style was lucid and interesting. His classes were always well attended. He was a keen sportsman as well as a splendid walker and good oar. He is survived by his widow, two sons, and two daughters.

Edinburgh Medical Missionary Society.

The annual meeting of the Edinburgh Medical Missionary Society was held on Jan. 24th, Professor A. R. Simpson presiding. The annual report referred to the death of their president, Sir Thomas Grainger Stewart, of Sir Douglas Maclagan and Dr. J. B. Fleming, two of their senior directors, and of Sir Thomas Clark. The report stated that as a result of their jubilee effort they had in hand a nucleus of £3000 with which to face the much needed extension of their premises in Edinburgh. The total number of cases dealt with at home was 9575 and 221 patients, women and children, had spent some time in Hawthornbrae Convalescent Home. The expenditure for the year had exceeded the income by some £1005. The directors, in view of the serious falling off in subscriptions, urged upon the public the necessity of an increased liberality so that the beneficent work of the society might not be curtailed. Subsequently the Rev. Dr. James A. Dyer, from Santalia, and Mr. D. D. Muir, from Manchuria, spoke. After the adoption of the report Dr. James Ritchie was appointed president of the society and the Rev. Dr. M. Murtrie vice-president. The Rev. Dr. Cameron Lees, the Rev. Professor A. R. S. Kennedy, Mr. Charles E. Green, Dr. Andrew Balfour, and Sir Archibald Campbell were added to the directorate.

Inter-Universities Conference at Aberdeen.

The annual conference of the delegates from the Students' Representative Councils of the four Scottish Universities was opened in the Debating Hall, Students' Union, Marischal College, Aberdeen, on Jan. 25th. In the absence of Principal Lang the students were welcomed by Professor Stephenson, the senior professor. The only point of interest from a medical point of view was a motion, which was unanimously adopted, that a representation be made in favour of the institution of a doctorate in surgery. The mover objected that under the new regulations the M.D. thesis must be written exclusively on a medical subject, and that the M.D. was no longer the all-round examination it used to be. The Ch.M. degree was not popular. Another motion which was passed unanimously was that the University authorities be petitioned to give preference to senior students at cliniques and to institute a double final in medicine where not already existing. In the course of Saturday's sitting Principal Lang, who had been absent on the previous day, welcomed the delegates in the name of the University.

Glasgow Royal Infirmary.

The reconstruction scheme continues to excite a considerable measure of criticism, the majority of the comments taking a hostile tone. Hitherto the voices of disapproval have been those of individuals without organisation, but during the past week there are signs of the opposition taking to itself a more definite shape and expressing itself in a campaign of protest. On Jan. 21st the Glasgow Institute of Architects addressed to the managers of the infirmary an open letter, in which it is stated that in the opinion of the institute the adopted plan will fail to give a building in conformity with the modern standards of hospital requirement. It is urged that the sketch plans issued to the competing architects are in many vital particulars inadequate and out-of-date, and that these faults are equally displayed in the selected design. The unanimous opinion of the institute is also advanced against the erection of a Jubilee block seven storeys high on the ground that such a building, on the site selected, will dwarf and irretrievably injure the appearance of the cathedral. And further, a protest is lodged against the action of the sub-committee in setting aside without any reason given the award of the professional assessor, Dr. Rowand Anderson, more especially as the decision against his recommendation was carried by a simple majority of one vote. Another expression of the opposition to the adopted scheme was heard at the annual meeting of the contributors to the infirmary held on Jan. 28th. The report there submitted contained the announcement that the managers had acquiesced in the scheme approved by the Jubilee Memorial Committee, with the proviso that the sole financial responsibility in connexion with the reconstruction shall rest with the last-named body. After the adoption of the report had been proposed Dr. Ebenezer Duncan moved an amendment disapproving of the action of the managers. He agreed that there was urgent need for a reconstruction of the infirmary, but argued that the proposal to erect on the present site a hospital to accommodate 700 patients was to perpetuate the present overcrowded condition of the infirmary and necessitated a building some parts of which would receive an inadequate supply of fresh air. The "plenum" system of ventilation would not, he considered, meet the wants of the infirmary, and he pointed out certain defects in it as revealed by the experience of the Victoria Infirmary. After a reference to the published opinion of the Institute of Architects he urged that the contributors should so far disapprove of the report and should appoint a small committee to meet the managers with a view to reconsider the whole question. The amendment was seconded, but on a vote was lost by 10 votes to 23 in favour of the report. As far as a show of hands is concerned, therefore, the managers and the Jubilee Committee are the victors, but it is impossible to deny that considerable dissatisfaction exists among the citizens and this must necessarily affect the subscription lists. The dispute is a most unfortunate one. The responsibility for it rests principally with those among the authorities who have systematically and somewhat superciliously disregarded that expert advice without which a satisfactory modern hospital cannot possibly be devised and erected.

The Sale of Poisons by Medical Practitioners.

The recent action of the General Medical Council in dealing with a medical practitioner who had been fined for permitting an unqualified assistant to sell poisons in his "open surgery," has caused considerable feeling in the West of Scotland where "open surgeries" are not infrequent. A meeting of practitioners to consider the question was held in Glasgow on Jan. 23rd, under the auspices of the Glasgow Southern and Eastern Medical Societies and the local branch of the British Medical Association. The chairman (Dr.

Watson) and several other practitioners severely criticised the action of the General Medical Council, and contended that the Pharmaceutical Society was entering on a crusade having for its object the entire suppression of the practice of selling drugs as at present conducted by some medical men. The right of retailing drugs was possessed by every individual, and it was only the sale of the scheduled poisons which was restricted to the chemist and druggist. A motion embodying these views was proposed by Dr. Charles Robertson. In speaking on the motion, Professor Glaister advised the meeting to proceed with caution. The facts of the recent case were not fully before the meeting and they certainly included the conviction on three separate occasions of unqualified assistants of the incriminated practitioner when summoned at the instance of the Pharmaceutical Society. He agreed that the desire of that society was to shut up the "doctors' shops," and he quoted in support of this view several clauses from the draft of a Bill which the society are promoting for submission to Parliament. Professor Glaister contended that the monopoly which the society aimed at would be intolerable, and he advised the meeting not to rest their case on the particular instance which had recently occurred but on the secure grounds of the rights which they possessed as citizens and medical practitioners. After several other speakers had addressed the meeting a motion was carried by a large majority representing to the General Medical Council that their recent decision is "unwarrantable and interferes with the rights and privileges of the profession as embodied in the Medical and Pharmacy Acts." A committee was also appointed to oppose the Pharmacy Acts Amendment Bill when this in due course is submitted to Parliament.

Small-pox in Glasgow.

The extension of the small-pox epidemic is assuming serious proportions. On Jan. 27th 11 new cases were admitted to hospital, making a total of 378 under treatment. The disease for the most part is not of a severe type, but there have been over a dozen deaths. An anxious feature of the epidemic is its widespread character. Cases have been detected in nearly every quarter of the city and the neighbouring burghs and townships are also beginning to suffer. It is feared that the disease will spread still more widely.

Jan. 29th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Chief Secretary for Ireland on the Registration of Plumbers.

ON Jan. 23rd a deputation of members of the Parliamentary Committee of the Irish Trades Congress waited upon the Right Honourable George Wyndham, Chief Secretary for Ireland, in Dublin, to urge his support of the aims of the Congress, including the registration of plumbers under statutory powers. In the course of a sympathetic reply Mr. Wyndham expressed his sense of the importance of plumbers' work and his opinion that a number of deaths and a great deal of disease were attributable to defective sanitation and to bad work by incompetent plumbers.

The Death of the Queen.

The winter meeting of the North of Ireland Branch of the British Medical Association was held in the Belfast Museum on Jan. 24th. The President (Professor J. W. Byers) on taking the chair said they met that day under circumstances of peculiar sadness. The heart of the British nation had been moved to its depths by the passing away of their august and peerless sovereign who from the age of 18 years to 81 years ruled with such perfect dignity and wisdom over an empire increasing in wealth and in extent as well as in scientific attainments. She was, as was truly said by Bismarck, "the greatest statesman in Europe" but she was beloved by her people and she won their affections because they admired her character and her matchless purity of life. In her exalted position her example in the Court and in her family had exerted a boundless influence throughout the entire world. The great Victorian era, which ended almost contemporaneously with the close of the century, had been a glorious one in the progress of science, and they who met there that day were no doubt above everything else thinking of the marvellous progress of medicine during the reign of their deeply-lamented Queen. The nation in all its departments had been affected by her life; it would be still more affected by her death if, quickened by the present universal sorrow, they all rose to a higher sense of duty and tried even at a distance to follow in the footsteps of her who during her entire life served her country so truly and so well. He begged to move the following resolution:—

That the members of the North of Ireland Branch of the British Medical Association meeting in Belfast desire most respectfully to record their profound sorrow at the calamity which has befallen the empire in the death of their beloved and revered sovereign, and to express their sincere and heartfelt sympathy with His Majesty the King and the other members of the Royal Family in their irreparable loss.

—Dr. P. Redfern having seconded the resolution it was passed in silence, all the members standing.—The President proposed that under the circumstances the ordinary business of the meeting be adjourned.—This was seconded by Professor W. Whitla and the meeting concluded.—Dr. W. Calwell (secretary of the branch) has forwarded to the King's secretary the resolution of condolence.

The Belfast Hospital for Sick Children.

At the annual meeting of this hospital, held on Jan. 26th, it was reported that during the year 573 children were intern patients, an increase of 99 over the previous 12 months. Of these 335 were medical, 223 were surgical, and 15 were eye and ear cases. There were 21 deaths, 14 in the medical ward and seven in the surgical ward. 292 operations were performed. There were 5235 extern patients. A large number of senior students are attending the hospital clinique. Owing to the generosity of certain friends of the charity the convalescent home has been open practically all the year. The receipts during the year amounted to £2463 0*s.* 1*d.* and the expenditure was £2021 13*s.* 8*d.*

Londonderry County Infirmary.

At the annual meeting of the Board of Management held in the institution on Jan. 24th it was reported that during 1900 1569 patients had been treated and of these 572 were intern; 103 operations were performed during the year. Financially there is a deficit of £216 17*s.* The subscriptions and donations are apparently £300 in excess of last year, but this is owing to special donations of £200 and £100. The reports were adopted.

The Forster Green Hospital, Belfast.

At the annual meeting of this hospital, held on Jan. 28th, it was reported that 119 patients had been treated in the hospital and 361 extern cases. The staff speak hopefully of the improved results of the open-air treatment of tuberculosis as compared with ordinary hospital treatment, but hold that patients must be sent in the earliest stages. Mr. F. Green has provided accommodation for 30 patients on an excellent site suitable for "sanatorium" treatment. It is hoped that the citizens of Belfast will all do their share in the matter. The past year's accounts show a deficiency of £214.

Jan. 29th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Hygiene in Theatres.

THE question of the hygienic arrangement of theatres is again to the fore and at the recent congress on Theatrical Art the Society of Medical Officers to Paris Theatres was represented by a committee of three. This committee handed in a number of important resolutions and asked that a medical man should be upon the Superior Committee of the theatres, as, singularly enough, up to now no medical man has been upon that committee. Certainly a member of the profession in question would be able to afford the committee valuable advice upon questions of ventilation and the like when plans for the reconstruction or building of a theatre come before it. A medical man could, for instance, in the case of the Comédie Française have ordered the disinfection of the dressing-room of one of the artistes who died from phthisis and whose successor who took over the room also contracted phthisis and died in her turn. M. Henriot, professor *agrégé* at the Faculty and a member of the Committee of Hygiene, has undertaken a scientific inquiry into the defects of the Paris theatres from a hygienic point of view and is taking samples for future analysis of the air from different parts of the house in the hope of discovering the microbes

of the diseases to which theatre-goers are liable. According to hygienic authorities theatres are insanitary for many reasons, chiefly because they are badly ventilated and badly lit in so far that they get no sunlight. The ventilating fan is no good, for it raises clouds of dust and is far worse in this matter than the feather broom. Then there is the floor upon which the audience frequently spits and which when swept gives off clouds of dust which rise in the air only to fall down again The most successful theatres, according to M. Henriot, are the most dangerous, for in them the audience stamps with enthusiasm and a quantity of dust is the result. M. Henriot's desiderata would be: 1. Better air and a natural system of ventilation. 2. Large windows through which the rays of the sun could enter. 3. All upholstery instead of being in velvet should be in leather and no stuff drop scenes should be allowed. 4. All wooden furniture should be varnished so that it could be washed over with a wet sponge. 5. The floor should be of some impermeable material so that it could be washed, and should be covered over with a layer of fine gravel which should be swept off every day, and would carry with it all dirt, dust, &c. (*scories*), without the dust floating up into the air. The medical officers of theatres ask for the installation in all theatres, cafés, concerts, and circuses of a "loge médicale," that is to say, a room kept specially for the purpose, to which can be removed any actor or spectator who may meet with an accident or be suddenly taken ill. The room should be of fair size to enable the patient to be easily attended to and must be ventilated by a window which opens easily. Its furniture should be only such as is necessary—viz., a sofa, a wash-basin, two or three hand-basins, some receptacle holding two or three litres of some antiseptic solution, and a cupboard for a few necessary drugs and dressings. There should also be a pair of scissors, a knife, a tongue forceps, a Pravaz syringe, and a night commode. The medical men who ask for this installation argue that in the great number of cases of accident cure depends upon immediate treatment by a medical practitioner, who must have the necessary articles for the application of such treatment.

Infant Mortality among the Urban Population of France.

At the meeting of the Academy of Medicine which was held on Jan. 8th M. Balestre and M. Giletta communicated a memorandum in the name of the Bureau of Hygiene at Nice relative to infantile mortality among the urban population of France. The memorial, which was drawn up in great detail, set forth that it was in the industrial and mining towns and in the large ports that infantile mortality was the heaviest. The departments with the highest death-rate were those where most alcohol was consumed, while the agricultural departments showed the lowest rate. More than three-quarters of the infantile deaths were due to avoidable causes, and in six years ignorance, want of proper care, alcohol, and other avoidable pathological conditions had given rise to 220,000 infantile deaths, which was equivalent to an annual loss of an army corps of 45,000 men. M. Balestre and M. Giletta thought that it was a matter for State intervention. The State should strengthen the existing laws relating to infant life protection, should draw up laws as to the protection of public health, and should enforce the existing regulations relating to unhealthy houses. Towns should have State assistance when undertaking sanitary improvements and the efforts to check the progress of alcohol should be furthered in every possible way. In conclusion M. Balestre and M. Giletta appealed to private charity to organise everywhere for the better protection of infants and to instal more generally those excellent *cliniques de nourissons* which at Paris, Fécamp, and elsewhere have given such excellent results.

Anæsthesia of the Spinal Cord during Labour.

M. Doléris, M. Malartie, and M. Dupaigne sent certain notes upon the employment of spinal anæsthesia to the Academy of Medicine, and at the meeting held on Jan. 22nd M. Guéniot read a paper founded upon the notes of these observers. He stated that if there was injected into the lumbar sub-arachnoid space 0·01 centigramme of cocaine in solution a localised anæsthesia was produced affecting the whole of the body below a line passing round the umbilicus. An injection of this kind given to a woman in labour did away with the pains caused by the contractions of the uterus and by the passage of the child. Furthermore, instead of delaying the course of labour it seemed to accelerate it. The anæsthesia lasted for about one and a half hours and the only toxic phenomena hitherto observed had been slight cramps or trembling of the limbs, a headache, which, however, soon passed off, a little sickness, and a small rise in temperature. These injections were contra-indicated in women with affections of the heart or of the great vessels, in any chronic disease of the respiratory organs or of the central nervous system, and, further, they should not be used unless perfect asepsis during the puerperium were obtainable. M. Guéniot drew attention to certain special contra-indications relating to the rate of labour, to the number and force of the uterine contractions, and, finally, to the necessity, or the contrary, for manual intervention within the uterine cavity. These three last contra-indications arise from the fact that cocaine is a powerful stimulant of uterine contractions. Indications for the use of cocaine in labour are as follows:—(1) any obstetrical operation necessitating the use of anæsthesia, except such as entail the introduction of the hand into the uterine cavity; (2) excessive pain, which sometimes occurs in labour; (3) delayed labour owing to feeble or irregular contractions; and (4) conditions likely to give rise to hæmorrhage, such as uterine inertia or vicious implantation of the placenta.

Jan. 27th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Financial Difficulties of a Hospital.

THE managing committee of the Kaiser and Kaiserin Friedrich Hospital for Children, an institution belonging to the class of "private hospitals," has informed the municipal authorities that it will be compelled by want of funds to close the wards on Feb. 1st. The municipal council has, therefore, decided to pay to the committee a sum of 30,000 marks (£1500) for the two months of February and March and a sum of 100,000 marks (£5000) for the financial year from April 1st, 1901, to the corresponding date in 1902. It was, moreover, resolved to enter into negotiations with the committee with a view to the hospital becoming a municipal one. This is, so far as I know, the first instance in which financial difficulties have rendered it impossible to carry on a hospital. The hospital system of Berlin is quite different from that of London, the hospitals being divided into three classes—State, municipal, and private. The Charité Hospital, the largest in Berlin, is a State hospital and contains the majority of the university clinics; apart from it several other university clinics have their own premises, for instance, the surgical and the obstetrical clinics. The second division includes the great municipal hospitals—the Friedrichshain Hospital, the Urban Hospital, and the Moabit Hospital; a fourth municipal hospital is in course of construction, the expenses being no less than 13,000,000 marks (£650,000). The third division includes the private hospitals which belong partly to religious communities, such as the Roman Catholic Hospital, the Jewish Hospital, the Bethanien Hospital, and others, and partly to private associations, such as the Augusta Hospital, the Lazarus Hospital, the Kaiser Friedrich Hospital, &c. The financial problems of hospitals are not so pressing in Germany as they are in England. It is the rule in Germany that hospital patients must pay for their accommodation a daily sum which in Berlin is fixed at 2 marks 50 pfennige (2*s.* 6*d.*). This condition is not so hard as it may appear. In serious cases patients are admitted without prepayment and as the whole working-class must belong to a sick club under municipal control the hospital charges are in the great majority of cases paid by the club. Those who do not belong to a club (almost exclusively very poor people without regular work, or women and children) either do not pay at all or are allowed to pay afterwards in small amounts. For the poor who are unable to pay anything the hospital charges are defrayed by the Armen-direction (guardians of the poor) if the patients have been admitted to the hospital by order of a poor-law medical officer (Armen Arzt) or if the case has been urgent. In many instances the hospital does not receive any money for individual patients, and this has been especially the case in the Kaiser Friedrich Hospital where the patients, being exclusively children, were, of course, not members of sick clubs, and their parents were mostly poor people. It is to be hoped that the municipal

council will agree to take over the hospital, so that its financial difficulties will be at an end. If the hospital were closed it would be a great misfortune both for the children of the poor and also for medical science, because much valuable work in connexion with children's diseases has been done there. It was in this hospital that anti-diphtheritic serum was first used on a large scale.

Ligature of the Coronary Artery.

Dr. Pagenstecher of Elberfeld, whose successful suturing of a wound of the heart was described in THE LANCET of Sept. 9th, 1899, page 747, has again had the opportunity of performing a similar operation and has published details of it in the *Deutsche Medicinische Wochenschrift*. The patient was an Italian workman who had stabbed himself in the chest with suicidal intention. When admitted into the Elberfeld municipal hospital he was found to be in a state of extreme shock and pulseless. He had lost an enormous quantity of blood, although there was at that time no hæmorrhage from the wound, which was situated in the fourth left intercostal space. The operation was performed two hours later. The fourth and fifth costal cartilages being divided, a flap was formed consisting of skin, muscle, and cartilage, and having its base towards the sternum. The mediastinum was found to be infiltrated with blood and air. It was difficult to ascertain the situation of the wound of the pericardium owing to the hæmorrhage but ultimately it was ascertained that it had been perforated on a level with the sixth rib. When the wound was enlarged air made its way into the pericardial cavity and the blood there was churned into a frothy state. The right ventricle proved to be enormously dilated, so that it seemed as if it might burst during the diastole, the heart muscle being degenerated. The right ventricle was turned aside with the finger and the left ventricle was brought into view. This had no prejudicial influence on the heart and it was found that the heart muscle itself was not injured, but that the left coronary artery was divided. The artery was tied and the pericardium and the skin were sutured without drainage. The operation lasted only half an hour. The patient was very excited immediately afterwards but became quieter on the following day. Subcutaneous emphysema appeared a few hours after the operation; the pulse was 120, strong and regular; the temperature was normal. On the third day the dressing was removed as the temperature had risen to 38·9° C. (102° F.) and there was dyspnœa. The emphysema had increased greatly, but the cardiac action was normal. On the fifth day the temperature rose to 39·2° C. (102 6° F.), the pulse was 130, and the dyspnœa was increasing; the wound was, therefore, opened again under chloroform and the sutures in the skin were removed. The pericardial cavity proved to be closed by adhesions. Puncture in the sixth intercostal space revealed the presence of sanguinolent fluid in the pleura, and on an incision being made several litres escaped. Half an hour after the second operation the patient died. At the necropsy purulent pericarditis and pleurisy with effusion were found. Degenerative myocarditis and chronic nephritis were also present. Apparently the pleura had been injured in the course of the operation. It was remarkable how little effect all that was done had upon the action of the heart.

Jan. 28th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Bellevue Hospital.

MATTERS at Bellevue Hospital appear to be reaching the acute stage. Three of the nurses accused of causing by violence the death of an inmate of the insane pavilion have been indicted by the grand jury and will have to stand their trial for homicide. Various other instances of inhumanity on the part of nurses have been reported as occurring both in the insane pavilion and in the alcoholic ward. As a result of the investigations promised by the Commissioner of Charities of New York City, who is in virtue of his post at the head of the municipal hospitals, many of the nurses have resigned, dreading probably the disclosures which may follow. The latest development, however, of the scandal is that the medical board are making common cause against the Commissioner, impelled to this course by the reflections cast upon them from outside and by the action of the Commissioner in discharging one of their number. Dr. Alan McLane Hamilton, a prominent alienist of New York, has written to the *New York Herald* formulating serious charges against members of the Bellevue Medical Board with regard to the treatment of the insane while in that hospital. As a matter of fact, everyone who is acquainted with the management of Bellevue Hospital is well aware that abuses exist and have existed for some considerable time in the working of the institution. It is the system which is in fault. The management of Bellevue Hospital is wholly controlled by politics, and to a person who is cognisant of the methods used by New York politicians this is a sufficient explanation of the trouble. The showing-up of the manner in which the New York city hospitals are governed will in the long run have a good effect. The entire system will inevitably be reorganised and city institutions will be placed on such a footing that they will really be of benefit to those persons for whose behoof they were established.

Epidemic of Influenza in the United States.

Influenza is at the present time epidemic throughout almost the whole of the United States. New York city has a very large number of cases, and although some of the lay journals, with their usual tendency to sensationalism and exaggeration, have magnified the gravity of the situation—stating that there are at present more than 400,000 sufferers from the malady—there can be no doubt but that it is very prevalent. The most encouraging feature with regard to the epidemic now in New York is the mild character that the disease has so far displayed. The deaths have been proportionately few. In January, 1899, there were 287 deaths for which influenza was held responsible. Most of the cases have been of the catarrhal type. Many prominent citizens are down with the troublesome complaint. In Chicago, where the number of cases is roughly estimated at 100 000, the epidemic is said to be raging in a more virulent form than for years. In Buffalo it is reported that a third of the population are prostrated with influenza. In Philadelphia much the same condition prevails and the physicians of that city state that the changeable weather which they are experiencing is daily developing fresh cases. Baltimore is another large American city in which influenza seems to have gained a foothold; reports thence say that not only has the disease spread widely but that it is of a severe type. Connecticut has 60,000 of its inhabitants suffering from influenza, in New Haven alone there being 10,000 cases. In many parts of the south influenza holds sway. In Washington the epidemic is on a widespread scale; many of the nation's legislators are incapacitated and the President himself has been confined to his bed for several days.

New Lying-in Hospital in New York.

There is approaching completion in New York city one of the most magnificent maternity hospitals in the world. This building, the cost of which with the site is said to have reached the sum of $1,000,000 (£200,000), has been given by the well-known financier, J. Pierrpoint Morgan. In addition to this Mr. Morgan has provided ample funds for its endowment. The building, which is of eight storeys, is a fireproof structure of steel, brick, and stone, about 150 feet in height. It faces Second Avenue, in which is its main entrance with a frontage of 184 feet; it extends along Seventeenth-street for 83 feet and along Eighteenth-street for 186 feet. The basement will be used for outdoor work. The first storey will contain the executive offices, the second the nurses' department, the third the septic department, and the fourth, fifth, and sixth storeys wards for patients, providing 200 beds; the seventh storey will be the operating-room, laboratory, kitchen, and laundry; and the eighth storey is occupied by an extension of the laboratory with amphitheatre seats for the operating-room. The heating of the building will be furnished by three boilers of 200 horse-power each. The motive power for the ventilating apparatus, elevators, laundry, kitchen, and for the ice-making and other plants necessary to a modern hospital will be provided by these boilers. There are two laundry plants, one of which is termed the septic laundry, in which a steriliser is to be placed, and the whole of the laundry machinery will be driven by electricity. The Society of the Lying-in Hospital of New York is one of the oldest charitable institutions for the benefit of the sick in the city. It was founded in 1798, and a small building in the poorest part of the town was utilised as a

shelter for homeless and destitute parturient women. It should be said that the new building is exceptionally handsome externally and is built of buff Indiana limestone and red brick.

Jan. 20th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Health of Sydney.

THE last quarterly report of the medical officer to the Sydney Water and Sewerage Board, which has just been issued, shows that the population of Sydney has increased by 11,350 since the corresponding quarter of 1899. The death-rate has also increased, especially from diarrhœa, typhoid fever, diphtheria, and phthisis, and Dr. T. M. Kendall states his opinion that so long as the present system of scavenging and removal of house refuse continues diarrhœa will flourish. The present system fills the houses in the city with contaminating dust, and the municipal garbage-tips are greatly responsible for the diphtheria mortality.

The Medical Practitioners Act of New South Wales.

The Bill to amend the Medical Act of New South Wales to]which I referred in a previous communication [1] passed its third reading in the Legislative Council, with the insertion of a fresh clause, moved by Dr. Nash, providing for the registration at the discretion of the board on a separate register of men who, though not properly qualified, could prove that they had passed a course of study at some recognised college or school and had conducted a reputable practice in New South Wales for 15 years prior to the passing of the Act. Such persons were to have all the rights of medical practitioners and be subject to all the provisions of the Act. The Bill was assented to and is now law and known as Act No. 33, 1900, and its administration has been placed under the control of the attorney-general. The New South Wales Branch of the British Medical Association accorded a vote of thanks to Mr. Price, M.L.A., who took charge of the Bill, for his work in successfully passing "the first Medical Bill worthy of the name in the colony." The branch recognised that to make the Bill acceptable it had necessarily to be short, but it was a great thing to have a satisfactory basis upon which additions might be built from time to time as expediency might suggest.

"Earth-eating Disease" in Queensland.

Dr. T. U. MacDonald, resident surgeon at the Geraldton Hospital, North Queensland, has stated that the disease known in North Queensland as the "earth-eating disease" [2] is assuming serious proportions in the northern towns. It has raged at Cooktown, Townsville, and Geraldton, and is extending nearly as far south as Brisbane. He had treated 120 cases, of whom 10 per cent. were adults. The earth-eating was merely a symptom, not necessarily constant, of a serious parasitic disease due to ankylostoma duodenale.

"The Battle of the Clubs."

At the inter-colonial conference of the boards of directors of the Australian Natives' Association the subject of the relations of the association with medical practitioners came up for discussion and, as might be expected at such a conference, the action of the New South Wales Branch of the British Medical Association which I referred to in a recent communication [3] came in for strong condemnation. The medical practitioners in New South Wales, however, are standing to their guns and will not accept positions as medical officers to the Australian Natives' Association. In Victoria the Medical Defence Association is organising the profession on the subject of women's lodges and other matters connected with the friendly societies. Under its auspices meetings have been held of all the medical men in all the various metropolitan and in several of the country districts, who have all agreed to certain definite and united action.

Sydney Hospital.

A conference has been held between representatives of the Sydney Hospital and representatives of the Hospital Saturday Fund Association with regard to the action of the latter body in withholding the amount allotted to the Sydney Hospital out of the year's collection pending an undertaking that the collectors of the hospital would refrain from attempting to collect when collections were being made by the association. After discussion the following proposals were drafted and submitted for the approval of both the hospital and the association and were adopted by the board of directors of the hospital :—

That the Sydney Hospital reserves the right to collect from any persons or body of persons on behalf of the hospital as an appeal to charity without offering any inducements other than those provided for in the bylaws.

That in the event of any such collection organised by the association being diverted to the hospital the association may fairly deduct the amount so diverted from the industrial portion of the fund when making the annual distribution.

Dr. C. E. Corlette has been appointed honorary assistant pathologist. The nurses at the Sydney Hospital have protested against the long hours which they have to work—80 per week—with only one full holiday of 24 hours in the year. The matter was brought under the notice of the Premier who has given instructions that the hours should be altered.

Prince Alfred Hospital, Sydney.

Dr. Gordon Craig has been appointed honorary assistant surgeon. Dr. N. W. Kater and Dr. G. Allen have been appointed clinical assistants in the out-patient medical department and Dr. T. S. Kirkland clinical assistant for the ear, throat, and nose department.

Melbourne Hospital.

The position of matron has become vacant by the resignation of Miss Farquharson and will probably be filled by a selection made in London. The salary is £200 per annum, with quarters. Dr. G. L. Laycock and Mr. H. L. Murray have been appointed honorary medical electricians.

Death of Staff-Surgeon J. Steel.

On Nov. 10th Staff-Surgeon J. Steel, of the New South Wales Naval Forces, died from an accident while on active service with the naval contingent at Taku in China, to the great regret of all who knew him. He was 45 years of age and was the son of the late Rev. Dr. Steel of St. Stephen's Church, Sydney. He received his medical education at Glasgow, Edinburgh, and Paris, and subsequently obtained the degree of M.B. at the University of Melbourne, having first passed the examination for the Licentiate of the Royal Colleges of Physicians and Surgeons of Edinburgh. He held the position of resident medical officer at the Royal Infirmary, Glasgow, and commenced practice in Sydney in 1882. Besides being a capable and successful practitioner Dr. Steel was a scholar and man of great literary attainments and a man of tender courtesy and generous heart. To his untiring energy and zeal the efficiency of the medical corps of the Naval Brigade was largely due. One of the special correspondents with the China contingent referred to Dr. Steel's heroic conduct during the forced march of the Australians to the Peitang forts as follows :—

It was a frightfully hot day, and sunstroke incapacitated a dozen. It was about 23 miles home, and of the 330 who formed the Australian contingent 40 returned from the halting-place on the railway line by train. The worst cases were taken to the hospital, where they speedily recovered, and the others marched out to the camp, and were warmly received by the party left in charge. The officer who came through the march with the most credit was the New South Wales surgeon, Dr. Steel. The Victorian surgeon was unable to stand the first marching, and remained in camp, Dr. Steel being left with the care of the officers and men of both bodies. Until the men began to fall his task was not more arduous than that of any other officer, but no sooner did one fall than the doctor was by his side administering stimulants, then doubling up to the main body again, arriving just in time to attend to another sufferer. The latter portion of the march was more like a series of running races for the doctor than a march. Nor had his work ceased when we camped for the night. Most of the stragglers made their way in, but there were still four victims missing at 10.30. Out went the doctor with a search party along the road, and for the greater part of the night he was busy with the sufferers. All the next morning he went on with his duties, but the sun got him at noon and he was carried unconscious to the railway station. After three days in the Gordon Hall Hospital he returned to camp to-day and got a splendid reception, the men cheering him again and again. He did double duty and did it well.

The Plague.

Lately two or three fresh cases of plague have occurred in Queensland, and on Nov. 17th a suspected case was reported by Dr. W. Irwin of Singleton, New South Wales, and Dr. Dick, the Government medical officer, was sent to report. He considered the case suspicious and isolation was enforced.

Dec. 26th, 1900.

[1] THE LANCET, Nov. 24th, 1900, p. 1541.

[2] For an interesting paper on this subject see THE LANCET of Oct. 27th, 1900, p. 1192.

[3] THE LANCET, Nov. 24th, 1900, p. 1541.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen passed the second professional examination for the Diploma of Fellow at the last half-yearly meeting of the examiners and the Diploma of Fellow has been issued to them by the Council of the College:—

Frederic Pinsent Maynard (Major I.M.S.), M.B. Durh., L.R.C.P. Lond., D.P.H., St. Bartholomew's Hospital, Diploma of Member dated April 28th, 1885; Edgar Godfrey Carpenter, L.R.C.P. Lond., D.P.H. Camb., St. Bartholomew's Hospital, Member August 1st, 1889; John Herbert Parsons, M.B., B.Sc. Lond., L.R.C.P. Lond., University College, Bristol and London, and St. Bartholomew's Hospital, Member Nov. 12th, 1891; Elmore Wright Brewerton, L.R.C.P. Lond., St. Bartholomew's Hospital, Member Feb. 7th, 1895; Alexander Gordon Wilson, M.B. Lond., L.R.C.P. Lond., London Hospital, Member May 13th, 1897; Edward Septimus Earnshaw Hewer, L.R.C.P. Lond., St. Bartholomew's Hospital, Member Feb. 10th, 1898; Irwin Walter William Hunter, M.A., B.Sc. New Zealand, L.R.C.P. Lond., Otago University, New Zealand, and London Hospital, Member May 4th, 1898; Percy William George Sargent, M.A., M.B., B.C. Camb., L.R.C.P. Lond., Cambridge University and St. Thomas's Hospital, Member May 4th, 1898; Thomas Alfred Mayo, M.B. Camb., L.R.C.P. Lond., St. Bartholomew's Hospital, Member Nov. 10th, 1898; William Archibald Logan, M.B., Ch.B. New Zealand, L.R.C.P. Lond., Dunedin University, New Zealand, and King's College Hospital, Member July 21st, 1899; James Sherren, L.R.C.P. Lond., London Hospital, Member July 27th, 1899; Robert James Johnstone, B.A., M.B., B.Ch. R.U.I., Royal University of Ireland and Queen's College, Belfast, not previously a Member. One other gentleman passed the examination, but not having yet attained the legal age of 25 years will receive his Diploma at a future meeting of the Council.

37 gentlemen presented themselves for this examination, 13 of whom assed and 24 were referred, 21 for six months and three for one year.

The following gentlemen passed the first professional examination for the Diploma of Fellow at the last half-yearly meeting of the examiners, viz.:—

Oliver Francis Haynes Atkey, King's College, London; Sidney Arthur Boyd, Charing Cross Hospital; Arthur Robinson Bailey, B.A. Camb., Cambridge University and Guy's Hospital; John Hay Burgess, St. Mary's Hospital; Harold Benjamin Day, King's College, London; Robert Valentine Dolbey and Arthur Sydney Downton, London Hospital; John Howell Evans, M.R.C.S. Eng., M.A., M.B., M.Ch. Oxon., L.R.C.P. Lond., Oxford University and St. George's Hospital; Robert John Ewart, M.R.C.S. Eng., M.B., Ch.B., B.Sc. Vict., L.R.C.P. Lond., University College, Liverpool; Francis Willoughby Goyder, B.A. Camb., Cambridge University and St. Mary's Hospital; Vivian Tudor Greenyer, M.R.C.S. Eng., L.R.C.P. Lond., St. Bartholomew's Hospital and King's College, London; Arthur Hyde Greg, M.R.C.S. Eng., L.R.C.P. Lond., Cambridge University and St. Thomas's Hospital; Arnold Gregory, Yorkshire College, Leeds; Walter Lidwell Harnett, University of Cambridge and St. Thomas's Hospital; Geoffrey Seccombe Hett, University College, London; David Morgan Hughes, University College, Cardiff; George John Jenkins, M.B., C.M. Edin., Edinburgh University and King's College, London; Francis Seymour Kidd, B.A. Camb., Cambridge University and London Hospital; Peter N. Lakshmanan, M.R.C.S. Eng., L.R.C.P. Lond., M.B., C.M. Madras, University of Madras and King's College, London; Stanley Thorpe Lewis, M.B., B.C. Camb., Cambridge University and Middlesex Hospital; Archie Trevor Moon, London Hospital; James Keogh Murphy, M.R.C.S. Eng., M.A., M.D. Camb., L.R.C.P. Lond., Cambridge University, St. Bartholomew's Hospital and King's College, London; Henry Bailey Mylvaganam, L.M. and S. Ceylon, Ceylon Medical College and London Hospital; Donald Luttrell Kilve Naesmyth, M.R.C.S. Eng., L.R.C.P. Lond., Charing Cross Hospital; William Robson Nichols, M.R.C.S. Eng., L.R.C.P. Lond., M.D., Trinity College, Toronto, Trinity Medical College, Canada, and University College, London; Frederick Norman, M.R.C.S. Eng., L.R.C.P. Lond., M.D. Brux., St. Bartholomew's Hospital and King's College, London; Francis Montagu Maxwell Ommanney, Guy's Hospital; Leslie Johnston Paton, B.A., B.C. Camb., Cambridge University and St. Mary's Hospital; Edwin Arthur Peters, M.R.C.S. Eng., M.D., B.C. Camb., L.R.C.P. Lond., Cambridge University, Guy's Hospital, and King's College, London; William Primrose, M.R.C.S. Eng., M.B., C.M. Glasg., Glasgow University, London Hospital, and King's College, London; William Arthur Rees, Middlesex Hospital; William Hunter Richards, M.B., B.S. Durh., L.S.A. Lond., Durham University, London Hospital, and King's College, London; William Jones Richards, M.R.C.S. Eng., L.R.C.P. Lond., St. Bartholomew's Hospital; Harold Rischbieth, B.A. Camb., Cambridge University and London Hospital; Reginald Henry Robbins, B.A. Camb., Cambridge University and St. Mary's Hospital; Ernest Edward Robert Sawrey, M.D., B.S. Melb., University of Melbourne and King's College, London; Arthur Rendle Short, B.Sc. Lond., University College, Bristol; Thomas De Smith, B.A. Camb., F.C.S., Cambridge University and London Hospital; Ernest Malcolm Stockdale, M.R.C.S. Eng., L.R.C.P. Lond., University College, Liverpool; Hubert Maitland Turnbull, B.A. Oxon., Oxford University; and Edward Allan Wilson, Yorkshire College, Leeds.

89 gentlemen presented themselves for this examination, 41 of whom were approved and 48 were referred.

DR. MARTIN HAHN has been commissioned by the Bavarian Government to proceed to Egypt and India for the purpose of studying the plague.

MEDICAL MAGISTRATES.—Mr. Alfred Roberts Steele Perkins, L.R.C.P. Edin., M.R.C.S. Eng., L.S.A., and Mr. John Delpratt Harris, M.R.C.S. Eng., L.S.A., have been placed on the Commission of the Peace for the city of Exeter.

VACCINATION GRANT.—Mr. G. Shepley Page, L.R.C.P., L.R.C.S. Edin., the public vaccinator for the Bristol district of the Bristol Union, has been awarded a grant for successful vaccination by the Local Government Board.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. E. Ingals, formerly Professor of Forensic Medicine in the Rush Medical College, Chicago.—Dr. Depasse, Director of the Imperial College of Medicine, Tientsin.—Dr. Robert Moericke of Stuttgart, formerly Professor of Midwifery in Santiago, Chile.—Dr. Julius Lehmann of Copenhagen, one of the chief hygienists of Denmark.—Dr. Chatin, honorary director of the École Supérieure of Pharmacy in Paris.—Dr. Wilhelm Wellner of Fürth, who has written on the subject of mercurial poisoning amongst workers in the mirror factories for which Fürth is famed.—Dr. Alexander Spengler of Davos, who was one of the first to bring Davos into prominence as a resort for phthisical patients. Two of his sons are practising there. He was 73 years of age.

LITERARY INTELLIGENCE.—Mr. Mortimer Menpes's book, "War Impressions," is in the press and will be ready in about a month. Its chief feature will be 97 page illustrations in colour, of which a large number are portraits sketched by permission in the field. These include Earl Roberts, Sir Alfred Milner, Cecil Rhodes, General French, General Macdonald, and General Pole-Carew, and practically everyone whom the campaign has brought into prominence. Other subjects of illustration are Boer prisoners on their way to Paardeberg, Modder River, City Imperial Volunteers in camp, and Lord Roberts watching the battle of Osfontein. The volume also contains a series of autograph letters, in facsimile, from Earl Roberts and several of the generals, as well as reproductions of a Boer doctor's letter and a Boer plan of the battle of Magersfontein. Besides the ordinary edition there will be an edition de luxe on hand-made paper, limited to 350 copies. Messrs. A. and C. Black are the publishers.

BOOKS, ETC., RECEIVED.

ASH AND CO., LIMITED, Southwark-street, London.
A Handbook of Sanitary Law for the Use of Candidates for Public Health Qualifications. By B. Burnett Ham, D.P.H. Camb., M.R.C.S., L.R.C.P. Price 2s. 6d. net.

ASH AND SONS, Golden-square, London.
Dental Anatomy Note-Book. By Douglas Gabell, M.R.C.S., L.R.C.P., L.D.S. Price 3s. 6d. net.

ASSOCIATION OF AMERICAN PHYSICIANS, Philadelphia.
Transactions of the Association of American Physicians, Fifteenth Session, held at Washington. Vol. xv.

BAILLIÈRE, TINDALL, AND COX, King William-street, Strand, London.
Arsenical Poisoning in Beer-Drinkers. By T. N. Kelynack, M.D., M.R.C.P., and William Kirkby, F.L.S. Price 3s. 6d. net.

BOYER, L., Rue Racine, Paris.
Vade Mecum de Thérapeutique Chirurgicale des Médecins-Praticiens. By Dr. Henri Fischer. Price 4 francs 50 cents.

BROWNE, T. B., LIMITED, Queen Victoria-street, London.
The Advertiser's A B C. Price 10s. 6d.

BRYCE, WILLIAM, Lothian-street, Edinburgh.
Students' Manual of Medical Jurisprudence and Public Health. By G. Haxton Giffen, L.R.C.P. & S.E.

CARRÉ ET NAUD, Rue Racine, Paris.
Éléments d'Anatomie Gynécologique Clinique et Opératoire. By Paul Petit. Price 16 francs.
Traité Médico-Chirurgical des Maladies du Pharynx. By E. Escat. Price 16 francs.
La Cure Pratique de la Tuberculose. By Dr. P. Pujade. Price 3 francs 50 cents.

CHURCHILL, J. & A., Great Marlborough-street, London.
Transactions of the Ophthalmological Society of the United Kingdom. Vol. xx. Price 12s. 6d.

CONSTABLE, ARCHIBALD, AND CO., Whitehall-gardens, Westminster.
The Coming Waterloo. By Captain Cairnes.

DAVIS COMPANY, Philadelphia, New York, and Chicago.

A Text-book of Practical Obstetrics. By Egbert H. Grandin, M.D. and George W. Jarman, M.D. Third Edition. Price 16*s.*

ENGELHARD AND CO., Chicago.

Diseases of the Heart: their Diagnosis and Treatment. By Albert Abrams, A.M., M.D. Heidelberg, F.R.M.S. Price 4*s.*

Urinary Diagnosis and Treatment. By John W. Wainwright, M.D. Price 4*s.*

GAY AND BIRD, Bedford-street, Strand, London.

The No-Breakfast Plan and the Wasting Cure. By Edward Hooker Dewey, M.D. Price 4*s.* net.

Chronic Alcoholism: its Radical Cure without Money, without Price. By Edward Hooker Dewey, M.D. Price 2*s.* net.

GLAISHER, HENRY J., Wigmore-street, Cavendish-square, W.

Studies in Human and Comparative Pathology. By Woods Hutchinson, A.M., M.D. Edited by Dr. Edward Blake. Price 12*s.* 6*d.*

LEWIS, H. K., Gower-street, London.

Hygiene and Public Health. By Louis Parkes, M.D., D.P.H. Lond. Univ., and Henry Kenwood, M.B., D.P.H., F.C.S. Price 12*s.*

Diseases of the Thyroid Gland. Part I. Myxœdema and Cretinism. By George R. Murray, M.A., M.D. Camb., F.R.C.P. Price 7*s.* 6*d.*

A Contribution to the Study of the Blood and Blood-pressure. By George Oliver, M.D. Lond., F.R.C.P. Lond. Price 7*s.* 6*d.*

LONGMANS, GREEN AND CO., Paternoster-row, London.

Qualitative Chemical Analysis, Organic and Inorganic. By F. Mollow Perkin, Ph.D. Price 3*s.* 6*d.*

A Practical Guide to Garden Plants. By John Weathers, F.R.H.S. Price 21*s.*

MASSON ET CIE., Boulevard St. Germain, Paris.

La Rage. By Dr. Auguste Marie. Price 2 francs 50 cents.

NEWNES, GEORGE, LIMITED, Southampton-street, Strand, London.

In Nature's Workshop. By Grant Allen. Price 3*s.* 6*d.*

PUTNAM'S SONS, London and New York.

Sanity of Mind: a Study of its Conditions and of the Means to its Development and Preservation. By David F. Lincoln, M.D. Price 5*s.*

SAUNDERS, W. B., AND COMPANY, London and Philadelphia.

A Text-book of Histology, including Microscopic Technic. By A. A. Böhm, M.D., and M. von Davidoff, M.D. Edited by G. Carl Huber, M.D. Translated by Herbert H. Cushing, M.D. Price 15*s.* net.

SHAW AND SONS, Fetter-lane, London.

Transactions of the Epidemiological Society of London. Vol. xix. Session 1899–1900.

SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., London.

Imitation; or the Mimetic Force in Nature and Human Nature. By Richard Steel.

SMITH, ELDER, AND CO., Waterloo-place, London.

St. Bartholomew's Hospital Reports. Vol. xxxvi.

SOCIÉTÉ D'ÉDITIONS SCIENTIFIQUES, Rue Antoine Dubois, Paris.

Chirurgie du Rein et de l'Uretère. By Professor James Israel.

Alcaloides Usuels. By Dr. M. Barnay.

UNWIN, T. FISHER, Paternoster-square, London.

The Mind of the Century. Reprinted from the *Daily Chronicle.* Price 2*s.*

Mother, Baby, and Nursery. A Manual for Mothers. By Geneviève Tucker, M.D. Price 1*s.*

VOGEL, F. C. W., Leipzig.

Diagnostik der Inneren Krankheiten, auf Grund der Heutigen Untersuchungsmethoden. By Dr. Oswald Vierordt. Price 14 marks.

WILLIAMS AND NORGATE, Covent Garden, London.

Lehrbuch der Histologie und der Mikroskopischen Anatomie, mit besonderer Berücksichtigung des Menschlichen Körpers, einschliesslich der Mikroskopischen Technik. By Dr. Ladislaus Szymonowicz. Part VI.

WILLING, JAMES, JUN., Strand, London.

Willing's Press Guide, 1901. Price 1*s.*

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ADYE, WILLIAM JOHN ALEXANDER, M.R.C.S., L.S.A. has been reappointed Medical Officer to the Bradford-on-Avon Workhouse.

AYTON, A. AUGUST, M.B., Ch.B. Edin., has been appointed Resident Medical Officer to the Victoria Hospital, Burnley, vice J. J. Crawford, resigned.

BLACKALL, PATRICK, M.D., Ch. M. Irel., has been appointed Licensing Magistrate and Official Member of the Licensing District of Queanbeyan, New South Wales, vice D. Richardson, resigned.

CARMICHAEL, W. J., M.B., C.M. Aberd., has been appointed Certifying Surgeon under the Factory Acts for the Darlington District.

CARTER, A. H., M.B., B.S. Lond., L.R.C.P., M.R.C.S., has been appointed Medical Officer, Yeomanry Hospital, Pretoria, South Africa.

CARTER, EDWARD G., L.D.S. Eng. & Glasg., has been appointed Dental Surgeon to the Ealing Cottage Hospital.

DAVIES, LESLIE, M.B., Melb., has been appointed Officer of Health for the Shire of Birchip, Victoria, Australia.

DAVIES S., M.D. Oxon., M.R.C.S., D.P.H. Camb., has been appointed Medical Officer of Health for the Borough of Woolwich.

GAMBLE, M. F. H., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed, *pro tem.*, Medical Superintendent to the Ballarat Lunatic Asylum, Victoria, Australia.

HANKINS, G. T., M.R.C.S., has been appointed Co-Examiner in Surgery for the present term, to the University of Sydney, New South Wales.

JONES, CHARLES STURGES, M.R.C.S., has been appointed Medical Officer of Health for Chichester.

LEEPER, R. J., L.R.C.S. Irel., has been appointed Certifying Surgeon under the Factory Acts for the Market Bosworth District of Leicestershire.

LLOYD, GEORGE T., M.B., Ch. B. Camb., has been appointed, *pro tem.*, Acting Health and Medical Officer at Mackay, Queensland.

MAIN, H. F., M.B., Ch.B. Melb., has been appointed Officer of Health for the Shire of Glenlyon, Victoria, Australia.

MARRIS, WM. ARTHUR, M.D. Lond., M.R.C.S., L.R.C.P., has been appointed Senior House Physician to the National Hospital for the Paralysed and Epileptic, Albany Memorial, Queen-square, Bloomsbury.

MONEY, P. F., L.R.C.P. Edin., M.R.C.S., has been appointed Government Medical Officer and Vaccinator at Goodooga, New South Wales.

MULLINS, REGINALD, M.B., B.Ch. Oxon., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer, Yeomanry Hospital, Pretoria, South Africa.

O'BRIEN, J. A., M.B., Ch.M. Glasg., has been appointed, *pro tem.*, Government Medical Officer, East Melbourne, Victoria, Australia, vice A. Shields, resigned. Also Medical Officer to examine patients in the Lunatic Asylums at Yarra Bend, Kew, Ararat, Beechworth, Sunbury, and Ballarat, Victoria, Australia.

ROCKETT, P. J. A., M.B., C.M. Melb., has been appointed Officer of Health for the Shire of Maffra, Victoria, Australia.

SINGER, HAROLD DOUGLAS, M.D. Lond., M.R.C.S., L.R.C.P., has been appointed Junior House Physician to the National Hospital for the Paralysed and Epileptic, Albany Memorial, Queen-square, Bloomsbury.

SPENCE, W. J., L.R.C.P., L.R.C.S. Edin., has been appointed Certifying Surgeon under the Factory Acts for the Syston District of Leicestershire.

STEWART, ANDREW, M.B., M.S. Glasg., has been appointed Visiting Medical Officer to the Jubilee Sanatorium for Consumptives, at Dalby, Queensland.

TROUGHTON, A. J., L.R.C.P., L.R.C.S., Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Health for Bentham.

TUBBY, A. H., M.S., F.R.C.S., has been appointed Consulting Surgeon to the Vine Hip Hospital, Sevenoaks, vice William Anderson, deceased.

WAGGETT, E. B., M.B., B.C. Camb., has been appointed Surgeon to Out-patients, Throat and Ear Department, Great Northern Central Hospital, Holloway-road, London.

WYNNE, EDWARD F., M.D. Camb., L.R.C.P. Lond., M.R.C.S., has been appointed, *pro tem.*, Acting Health and Medical Officer at Townsville, and Acting Visiting Surgeon to the Townsville Penal Establishment, Queensland.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BATH ROYAL UNITED HOSPITAL.—Resident Medical Officer. Salary £125 per annum, with board, lodging, and residence.

BOLTON INFIRMARY AND DISPENSARY.—Senior House Surgeon, age not to exceed 30. Salary £120 per annum, with furnished apartments, board, and attendance.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Senior House Surgeon. Salary £65 per annum. Also Junior House Surgeon. Salary £60 per annum, with board, lodgings, and attendance.

BIRMINGHAM CITY FEVER HOSPITAL, Lodge-road.—Assistant Medical Officer. Salary £120 per annum, with board, residence, &c.

BRADFORD ROYAL INFIRMARY.—Dispensary Surgeon, single. Salary £100 per annum, with board and residence.

CENTRAL LONDON SICK ASYLUM DISTRICT.—First Assistant Medical Officer and Second Assistant Medical Officer and Dispenser. Salary of First Officer £100 per annum, of Second £75 per annum, each with board and residence, subject to the provisions of the Poor-law Officers' Superannuation Act, 1896.

DONCASTER GENERAL INFIRMARY AND DISPENSARY.—Assistant House Surgeon, unmarried. Board and residence provided.

DUDLEY DISPENSARY.—Resident Medical Officer. Salary £130, with increase at end of 12 months if services satisfactory. Assistant Dispenser is provided. Good house (partly furnished), coal, gas, and water found.

DUNDEE ROYAL INFIRMARY.—Resident Medical Assistant for six months. Salary at the rate of £40 per annum, with board and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark-bridge-road, S.E.—Junior Resident Medical Officer and Registrar. Salary £50, with board and washing.

GENERAL INFIRMARY, Leeds.—House Physician for six months. Board, lodging, and washing provided.

GLOUCESTER COUNTY ASYLUM.—Third Assistant Medical Officer. Salary £150 per annum, rising to £180, with board, lodging, and washing.

GUEST HOSPITAL, Dudley.—Senior Resident Medical Officer. Salary £100 per annum, increasing £10 a year to £120, with board, residence, attendance, and washing.

LAMBETH INFIRMARY, Brook-street, Kennington-road, S.E.—Second Assistant Medical Officer for six months. Salary at the rate of £80 per annum, with board, lodging, and washing.

LEWISHAM INFIRMARY.—Assistant to the Medical Superintendent. Salary £120 per annum, increasing £10 annually to £150 per annum, with board, lodging, and washing, subject to a deduction under the Superannuation Act.

LEEDS UNION, East Parade, Leeds.—Assistant Medical Officer, single, not above 35, for Workhouse, Schools, and Infirmary. Salary £130 per annum, rising £10 annually to £150, with board, washing, apartments, and attendance (subject to deduction under the Poor-law Officers' Superannuation Act, 1896).

LINCOLN COUNTY HOSPITAL.—Assistant House Surgeon for six months, eligible for additional six months. Honorarium of £25 for each period of six months, with board, residence, and washing.

LONDON TEMPERANCE HOSPITAL.—Assistant Surgeon. Honorarium of 50 guineas a year.

MIDDLESEX HOSPITAL, W.—Obstetric Registrar. Must have held the office of Obstetric House Physician at the Middlesex Hospital or the corresponding post at another hospital.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer. Salary £60 per annum, with board, attendance, and washing.

NORFOLK AND NORWICH HOSPITAL, Norwich.—Resident Secretary and House Steward, twenty-eight to forty-five years of age, with previous hospital experience. Salary £150 per annum, rising £10 yearly to a maximum of £200, with apartments, board, and laundry.

NORTH DEVON INFIRMARY, Barnstaple, Devon.—House Surgeon. Salary £80 per annum, with board, residence, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Salary £140 per annum, all found except board.

OLDHAM INFIRMARY.—Senior House Surgeon. Salary £100 per annum, with board, residence, and washing.

PADDINGTON-GREEN CHILDREN'S HOSPITAL, London, W.—Pathologist.

PARISH OF BOLESKINE AND ABERTARFF, N.B.—Medical Officer. Salary at the rate of £55 per annum, with free house and offices.

QUEEN ADELAIDE'S DISPENSARY, Bethnal-green, E.—Resident Male Medical Officer, unmarried, under 35 years. Salary £100 per annum, with furnished apartments, coal, gas, and attendance.

ROYAL SEA-BATHING HOSPITAL, Margate.—Assistant Resident Surgeon. Salary £60 per annum, with board and residence.

RICHMOND UNION, Surrey, District of Barnes.—Medical Officer and Public Vaccinator and Medical Officer of the Children's Home, Barnes. Salary £70 and £30 per annum, with certain extra fees.

RURAL DISTRICTS OF BUNTINGFORD, &C., AND CERTAIN URBAN DISTRICTS.—Medical Officer of Health. Salary £600 per annum, including travelling and all other expenses.

SALFORD ROYAL HOSPITAL.—House Surgeon, salary £100 per annum; also House Physician, salary £80 per annum; also Junior House Surgeon, salary £70 per annum, with board and residence in each case.

SALOP INFIRMARY.—Assistant House Surgeon for six months, capable of renewal for a further period of six months. Salary at the rate of £60 per annum, with board and washing.

ST. BARTHOLOMEW'S HOSPITAL, Rochester.—House Surgeon, Salary £120 per annum, with board, lodging, washing, firing, and light.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary at the rate of £24 per annum, with board, washing, and residence.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies as Certifying Surgeons under the Factory Acts at Somerton, in the County of Somerset; and at Limerick, in the County of Limerick.

WARNEFORD ASYLUM, Oxford.—Assistant Medical Officer, unmarried. Salary £100 a year, with board, lodging, and washing.

WEST BROMWICH DISTRICT HOSPITAL. — Resident Junior House Surgeon. Salary £50 per annum, with board, lodgings, washing, and attendance.

YORK COUNTY HOSPITAL.—Resident Assistant House Surgeon. Salary £60 per annum, with board, attendance and washing.

Births, Marriages, and Deaths.

BIRTHS.

MACK.—On Jan. 26th, at Roman-road, North Bow, E., the wife of H. Hamilton Mack, B.A. Adelaide, L.R.C.P. Lond., of a daughter.

MANSELL.—On Jan. 28th, at Crofton, West-hill, Hastings, the wife of Harry R. Mansell, M.R.C.S., of a son.

ROBINSON.—On Jan. 16th, at Rocester, Stafford, the wife of Bernard Robinson, L.R.C.P., M.R.C.S., of a son.

DEATHS.

EKENS.—On Jan. 28th, Joseph William Ekens, M.R.C.S., aged 54 years.

KNOWLES.—On Jan. 25th, at 5, Ashford-road, Maidstone, John Knowles, M.R.C.S., aged 52 years. Interred at Maidstone Cemetery on Jan. 29th.

VERNON.—On Jan. 28th, at Clarges-street, Piccadilly, Bowater John Vernon, F.R.C.S., Ophthalmic Surgeon to St. Bartholomew's Hospital.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

RETRIBUTION FOR A QUACK.

ON Jan. 25th a case was heard before His Honour Judge Parry in the Manchester County Court in which a Mrs. Fell brought an action against W. Mellor of Offord-road, Manchester, to recover a sum of 10 guineas. Counsel for the plaintiff said that she had a daughter whose sight was affected. At the end of 1898 Mrs. Fell saw a pamphlet in which the defendant advertised himself as "the only eye specialist in Manchester," and undertook to cure diseases of the eye without operations. The pamphlet contained testimonials and a notice to the effect that the defendant guaranteed to effect a cure in every case. Plaintiff took her daughter to the defendant who said that he would refund the 10 guineas if a cure was not made. Plaintiff's daughter said that defendant had told her that there were ulcers affecting her eyes. Dr. Hill Griffith, however, said that he had examined the girl's eyes and gave it as his opinion that they had not been affected by ulcers, at all events for a long time. Defendant said that he had practised with great success for 20 years. He had obtained his training in Australia under his father-in-law, who was not a doctor but a Trinity College man. He had stopped the issue of the pamphlet in question because he thought it was "too big." His Honour, in giving judgment, said that a man could not be criminally prosecuted for practising as the defendant was doing, but it was a question for the community whether it would not be better to make such men's position legal. A man who could send out thousands of papers with such absurd guarantees by way of alluring people to his place would promise anything for the sake of 10 guineas. Judgment would be for the plaintiff and he hoped that the public would take warning from the case not to enter into such foolish contracts with men of the class of the defendant. His Honour will be, we fear, disappointed. There will always be silly persons who will consult quacks or buy Bodger's Blue Boluses. We are glad to see, however, that his Honour suggested the advisability of making such men's position legal, by which we suppose he meant putting them into a position where the law could take cognisance of their deeds. We cannot see why quacks should not be made to hold a licence to practise. A man has to have a licence to sell tobacco or buttons in the street, and such licence in no way implies any guarantee of the goods. The licence should cost a great deal, say £200; it should be necessarily renewable annually and should be able to be withdrawn without any reason being given. The same law should apply to all sellers of quack medicines; that is to say, the trade should be so heavily taxed that it would not be worth the quack's while to continue it.

FRERE'S ARSENICAL PASTE.

To the Editors of THE LANCET.

SIRS,—I should be much obliged if any of your readers would give me information regarding the efficacy of Frere's arsenical paste (Squire's formula)—arsenic, 1; charcoal, 1; red sulphide of mercury, 4; and water, q.s.—as a means of destroying a small rodent ulcer of about the size of a split pea situated half an inch from the eye, and also information in reference to any points in its use—i.e., indications for length of time the application should be made and best after-treatment with a view to preventing a scar that will contract and draw the lower eyelid down. In the case in question any efficient method of getting rid of the ulcer is preferable to the use of the knife.

I am, Sirs, yours faithfully,

Jan. 22nd, 1901. L.R.C.P. LOND., M.R.C.S. ENG.

A NEW FRAUD: A WARNING TO THE WIVES OF MEDICAL MEN.

To the Editors of THE LANCET.

SIRS,—May I through your columns warn the wives of your medical readers against a species of fraud of which they may become the victims? I can best describe the plan by relating my experience. Last week a respectably dressed woman called at my house representing herself as a hospital patient of my husband upon whom he had operated, and saying that he had asked her to come and report progress to him and to leave a message with me should he be out. As she gave the name of a hospital to which he is attached her tale sounded most plausible. She said she was much better and strong enough to work and was going back to the firm at which she had been employed before her operation. But wages were only paid at the end of the week and her illness had swallowed up all her money. Could we lend her a shilling or two to be going on with? I regret to say I was thrown off my guard by her story and let her have a small sum of money. Of course my husband knew nothing of her when I questioned him, and I feel sure she is going the round of medical men's houses with some such tale, first looking up the hospital appointments of the intended victims.

I am, Sirs, yours faithfully,

Jan. 28th, 1901. M. H. G.

"CHRONIC DIARRHŒA: SUGGESTIONS FOR TREATMENT DESIRED."

To the Editors of THE LANCET.

SIRS,—In answer to "Perplexed," in THE LANCET of Jan. 26th, p. 296, I have found benefit in similar cases to the one he describes from: 1. Restriction of fluid, allowing no liquid till the solid meal has been eaten and then drinking moderately. 2. From an infusion of oak bark. Pour a quarter of a pint of boiling water upon two drachms of oak bark; let it stand for two hours and strain or filter; drink a wineglassful three or four times a day. It should be made fresh daily. The decoction of oak bark is too strong and does not act as well. 3. If opium in any form is needed I have never found any preparation of so much service as the compound kino powder—10 grains in an ounce of water arrowroot two or three times a day, and when it seems to have answered its purpose diminishing the frequency of the dose. 4. A warm pad round the abdomen is useful.

I am, Sirs, yours faithfully,

Jan. 28th, 1901. K.

OBSTETRIC PRACTICE IN NEW ZEALAND.

To the Editors of THE LANCET.

SIRS,—Will any reader of THE LANCET well acquainted with New Zealand kindly give information as to the prospects of practice, private or otherwise, that would be open to a legally qualified British lady practitioner who makes obstetrics her specialty settling there?

I am, Sirs, yours faithfully,

Jan. 3rd, 1901. ÆSCULAPIA.

THE VOCABULARY OF NEUROLOGY.

To the Editors of THE LANCET.

SIRS,—As a student of medicine who has this evening been immersed in the study of the spinal cord, will you allow me to suggest that the various authorities on that region of the body should come to some definite conclusion regarding its terminology? At present no two books seem to agree in the least on this rather important matter, except that most of the names attached to the various tracts vie with each in leaving the reader in the dark as to their probable function. For instance, there is a tract, whose anatomical position is antero-lateral, which, as far as I can see, may be called the comma tract, the ascending antero-lateral tract, the ascending cerebellar tract, or the tract of Gowers. One of my tomes also kindly warns me against confusing it with the descending tract of Schultze which is also sometimes known as the comma tract. Surely such a multiplication of verbiage is undesirable. Probably to you, Sirs, these various names have so long been known to be synonymous that you may fail to see my difficulty. And I admit that, now that I have collected them together and copied them out, I shall probably never have any further trouble with them. But consider that I have spent a whole evening over the performance, and that, on countless other evenings, I have recoiled with a reeling brain when only half way through it; and you will recognise that my plea, which is made on behalf of generations of medical students yet unborn, or not yet through their first professional, is a worthy one. And if, through you, I can reach the ear of Ferrier or Gowers I shall go to bed feeling that, though I have done practically no work to-night, I have accomplished something to ameliorate the sufferings of the medical student.

I am, Sirs, yours faithfully,

E. M. GLANVILLE.

Edinburgh University, 1 A.M., Jan. 29th, 1901.

"THE CERTIFYING OF STILLBORN INFANTS."

A CORRESPONDENT points out that in our annotation published on Jan. 19th (p. 195) under this heading the technical aspect of the cause is not accurately represented. The defence relied upon was not that a medical man is justified in giving a stillborn certificate for a child practically dead but that the child was not viable, never had lived, and the certificate was a proper one to be given under such circumstances.

A NEW REACTION FOR SUGAR.

IN the *Deutsche Medicinische Wochenschrift* of Jan. 17th Professor E. Riegel describes a new method of applying the phenylhydrazin test for sugar. As much pure white hydrochloride of phenylhydrazin as will lie on the point of a small knife (0·1 gramme) is put into a somewhat large test-tube; to this are then added 0·5 gramme of crystallised sodium acetate, one cubic centimetre (20 drops) of the sugar solution, and two cubic centimetres of water; the test-tube is now heated to boiling over a spirit lamp and 10 cubic centimetres of a 10 per cent. solution of soda are immediately run in; the test-tube is then shaken five or six times and left at rest. Either immediately or after the lapse of some minutes the whole solution assumes a fine red-violet colour. Exactly the same method is followed in testing for sugar in the urine. Into a large test-tube are put 20 drops (one cubic centimetre) of urine, 0·1 gramme of pure white hydrochloride of phenylhydrazin, 0·5 gramme of crystallised sodium acetate, and about two cubic centimetres of water. The whole is then heated to boiling over a spirit lamp. 10 cubic centimetres of a 10 per cent. solution of soda are immediately run in, the test-tube is shaken five or six times and left to rest. If the amount of sugar present exceeds 0·1 per cent. the fluid will in a few seconds assume a red-violet colour. In testing for sugar in the urine it is essential that the colour should be viewed by transmitted light, that the fluid should be coloured throughout, not merely the precipitated phosphates, and that not more than five minutes at the most should be allowed for the red-violet colour to make its appearance, for after a longer period even normal urines and such as do not contain a pathological amount of sugar become coloured. The delicacy of the reaction may be considerably increased by proceeding in the following way. The above quantity (0·1 gramme) of pure white hydrochloride of phenylhydrazin is put into a shallow porcelain basin about three centimetres in diameter; to this are added 0·5 gramme of crystallised sodium acetate and 20 drops (one cubic centimetre) of the sugar solution; the basin is then held in crucible tongs over a spirit lamp until everything is dissolved and the fluid boils; it is then laid on the table and from 20 to 30 drops of a 10 per cent. solution of soda are added—best out of a dropping glass—without shaking the basin. Either in a few seconds or after about five minutes the fluid becomes red-violet, even when the solution of sugar contains no more than 0·005 per cent. of it. If the solution examined contains no sugar a slight pink tint makes its appearance in from 15 to 30 minutes as the result of atmospheric oxidation. Sugar in urine may be tested for in exactly the same way, but not more than one minute must be allowed for the development of the red-violet colour. Aldehydes give the same reaction as sugar and must therefore not be present.

THE DENTON EXPLOSION.

MUCH cannot as yet be said as to the exact cause of the disastrous explosion which took place at some hat works at Denton on Jan. 14th. This much, however, seems to be made out: (1) that the "proof" house where it took place was filled with the vapour of methylated spirit; and (2) that a new patent drying-stove on which some suspicion had been cast was not in use at the time. The report of the explosion was heard for many miles, having been noticed by residents in Broughton and Moss Side, two widely separated parts of Manchester. Up to Jan. 19th 14 deaths had taken place, five of them at the Manchester Infirmary.

REMOVED FROM THE ROLL.

To the Editors of THE LANCET.

SIRS,—I am directed by the President and Fellows of the Royal College of Physicians of Ireland to forward you the inclosed copy of a letter which has been sent to the coroner for the city of Westminster.

I am, Sirs, yours faithfully,

Jan. 22nd, 1901. JAMES CRAIG, M.D., Fellow and Registrar.

[COPY.]

Royal College of Physicians, Ireland,
Kildare-street, Dublin, Jan. 19th, 1901.

JOHN TROUTBECK, Esq., Coroner for the City of Westminster.

SIR,—In connexion with the inquiry recently held before you concerning the death of Chrystabel Ham who died at King's College Hospital on Dec. 22nd, 1900, at which inquiry Charles Lumley is reported by the *Daily Telegraph* to have stated that he is an L.R.C.P. (Dublin), I am directed by the President and Fellows of this College to inform you that Charles Louis Lumley was deprived of his Licences and his name erased from the Roll of Licentiates of the College on July 24th, 1900.

Yours faithfully,

(Signed) JAMES CRAIG, M.D.,
Fellow and Registrar.

PARACUSIS OF WILLIS.

WITH reference to this anomaly of hearing, by which auditory acuity is greater in a railway train or in other places where the environment is full of confused sounds, a correspondent writes to us: "I saw lately an old woman with old chronic dry catarrh of middle ears. Her husband brought her, and when I was asking questions leading up to the existence of 'paracusis' he related how some years ago in a train as he was relating to others present some not over-refined pleasantry about his wife, trusting to her deafness, she suddenly caught him a cuff on the head because, to his astonishment, she heard perfectly well."

"MAGAFFIN."

WE have given this excellent paste considerable practical trial with very satisfactory results. It consists of a modified starch manufactured in a special manner which renders it glairy and at the same time tenacious. It is very clean to use, containing no "gluey" substances which in a great number of pastes give to them a very disagreeable smell. The paste is quite permanent and contains an agreeable antiseptic. It may be had in concentrated form, which is a great advantage where large quantities are in constant use, as in newspaper offices and other places where labeling is required. The paste is prepared by the Magaffin Co., of 49, Eagle-street, Holborn, London, W.C.

THE FIGHT AGAINST TUBERCULOSIS.

THE Committee of the National Sanatorium for Consumption and Diseases of the Chest at Bournemouth recently asked their resident medical officer, Dr. A. E. Burroughs, to draw up a little set of rules for consumptives. This he has accordingly done and has also forwarded a copy to us. A copy is sent to every applicant for admission and the rules are practically an abstract of the treatment pursued in the institution. They are perfectly plain and simple

and we have nothing but praise for them, except that we think that the statement about the cold bath is rather too sweeping. However, perhaps even this may be read permissively. Short rules are given as to the dangers of the sputum and the way in which these are to be avoided. Personal and local cleanliness is insisted upon and there is a timely warning to patients not to neglect these rules of hygiene after they return home.

COTTAGE BATHS.

THERE is some hope that the Manchester Corporation will at length give a favourable response to the oft-repeated prayers for cottage baths in Hulme. The question was considered at a meeting of the Baths Committee on Jan. 16th. Alderman Evans brought forward a resolution from the Ladies' Health Association "praying the committee to provide cottage baths for the poor people in the Hulme district." A sub-committee was appointed to consider the question and report on the best method of trying the experiment. The idea is to fit up a large cottage with baths where the mothers may take their children and "wash them more frequently and readily than can be done now in many of the houses of the poor." All who are regardful of the wants of the poor will wish the scheme every success.

PROGNOSIS AND CLASSIFICATION OF HYSTERIA.

DR. JOSEPH FRAENKEL of the New York Hospital for Nervous Diseases has published in the *New York Medical News* of Jan. 5th a concise and interesting article on the prognosis and classification of hysteria in which he deals with the interesting question as to how far the disease may be regarded as fatal, a point which the text-books seem to neglect. Hysterical disorders are divided into three main clinical groups which, he observes, are not sharply demarcated, as many intermediate and complicated types may be met with. The first group comprises the predominantly mental forms—i.e., hysterical psychosis with more or less pronounced somatic symptoms. The second group includes those with disturbances affecting a lower level of the nervous system—e.g., the cerebro-spinal forms. The symptoms of this group mainly consist of phenomena of paralysis of motor and sensory nerves and phenomena of irradiation. The third group is marked by disturbances which are predominantly splanchnic in their distribution—i.e., visceral and vascular disturbances, and including those of digestion and secretion such as vomiting, constipation, diarrhœa, meteorism, ulcerations, œdemata, &c. Around these main groups there cluster the varying kinds of hysterical seizures and crises, *grand ou petit mal hystérique*. As regards prognosis he believes that this is favourable in the first and second groups of cases. In the third or splanchnic group, however, a few cases have been recorded which have ended fatally, and amongst these Dr. Fraenkel enumerates four cases which had been under personal observation, three of which had ended fatally while under observation during the course of two years. Dr. Fraenkel points out that in fatal cases death is believed to be due to paralysis or spasm of the glottis, or is the result of inanition following persistent hysterical anorexia, or is due to uncontrollable hysterical vomiting. These modes of death do not include the rare cases which end by suicide. The three cases of Dr. Fraenkel are of rare and exceptional interest, and the first of these is as follows. A woman, aged 42 years, single, suffered from severe hysteria with anorexia for nine months. There was no attributable cause for the onset of her symptoms, and her family history was good. On admission to hospital the chief symptoms were emaciation, anorexia, vomiting, and obstinate constipation. The pulse and temperature were subnormal. No organic disease could be found by repeated examination. "The patient took only a small amount of nourishment, and after two weeks she died suddenly, apparently of exhaustion." The necropsy revealed the following conditions. There were small hæmorrhagic erosions in the stomach and scattered spots of ulceration in the small and large intestines. These ulcerations were dark and parchment-like, and very similar in appearance to trophic ulcerations of the skin. The brain and spinal cord showed no changes to the naked eye, excepting that the meninges were unusually dry. The patient was embalmed prior to the performance of the necropsy, so that the results of microscopical examination (in the form of slight changes in the central nervous system) were not regarded as trustworthy or genuine, inasmuch as the possibility of their being artifacts had to be borne in mind. The sympathetic nervous system was not examined. Dr. Fraenkel therefore concludes, and his conclusion is supported by Fournier, that it is reasonable to assume that in hysteria death when it occurs is due to "irritation or paralysis of splanchnic or vegetative functions and that a case of hysteria with more or less constant and prevailing splanchnic or vegetative symptoms is from a prognostic standpoint to be adjudged very cautiously."

Astrion.—1. The question as asked by our correspondent is too vaguely put. The giving of the appointment would probably vary according to the port of exit and of entry. Our correspondent had better write to the Colonial Office, the Board of Trade, and the Emigrants' Information Office, the address of which last establishment is 31, Broadway, London, S.W. 2. We do not know the formula of the particular preparation in question. The formula for "grey oil," as given by Dr. E. Lang of Vienna, who introduced it into practice, is as follows: Lanolini anhydrici, four drachms; chloroformi, half an ounce. Evaporate in a large mortar with continual stirring down to one ounce. Then add one ounce hydrargyri vivi depur., stir slowly until the chloroform is wholly evaporated and the metallic mercury can be no longer distinguished. This preparation is known as unguentum cinereum laninolatum forte. To prepare an injection of 50 per cent. strength, which is the one most commonly used, take of the above ointment 135 grains and ol. vaselini 45 grains; add the oil to the ointment very gradually with constant stirring until a smooth oily mixture is obtained. The dose given is usually 0·05 cubic centimetre.

Enquirer (2) must, we think, look to his own patient for the fee. He attends the consultation in the plaintiff's interest, for it would harm his case if he declined to go.

W.H.—The objection urged is a possible one.

ERRATUM.—In the report of Dr. Churton's paper on Disease of the Prefrontal Lobes, published in THE LANCET of Jan. 26th, the name "Lichen" at page 251, col. 1, line 9, ought to be *Ziehen*. The passage at lines 29–32 of the same column ought to be as follows: "..... malingering were included in the first division. As illustrations of disorders characterised by depression of the activity of the prefrontal cells cases were briefly related....."

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 31st, 1901.

Date	Barometer reduced to Sea Level and 32° F	Direction of Wind.	Rain-fall	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Jan. 25	30·13	S.W.	0·05	77	49	39	38	39	Fine
,, 26	29·89	N.W.	0·10	67	52	38	37	39	Fine
,, 27	29·56	W.	...	67	55	39	51	52	Stormy
,, 28	29·55	N.W.	0·08	53	42	38	38	39	Raining
,, 29	29·45	N.W.	0·01	63	41	32	32	34	Fine
,, 30	29·37	W.	...	65	42	34	33	35	Cloudy
,, 31	29·40	WSW	...	50	37	33	33	34	Overcast

During the week marked copies of the following newspapers have been received: *Herts Observer, Stafford Advertiser, Durham Advertiser, Preston Herald, Hereford Times, Hull News, Liverpool Daily Post, Southern Echo, Dunfermline Journal, Plymouth News, East Anglian Times, Sussex News, Leeds Mercury, Worcester Chronicle, Walsall Observer, Swansea Herald, Dundalk Examiner, Birmingham News, Blyth News, Dover Chronicle, Lancaster Guardian, Norwood Press, Bridge of Allan Reporter, Croydon Guardian, Bristol Mercury, Surrey Times, Scotsman, Kettering Guardian, Times of India, Pioneer Mail, Citizen, Wellington Journal, Aldershot News, Architect, Builder, Yorkshire Post, Reading Mercury, Mining Journal, Local Government Chronicle, Hertfordshire Mercury, Dorset County Chronicle, City Press, Norfolk Standard, Halifax Evening Courier, Alliance News, Auto-motor Journal, Lincoln Echo, Sydney Daily Telegraph, South Africa Review, South Wales Press, Perth Journal, Liverpool Courier, Surrey Advertiser, Local Government Journal, Courrier de la Presse (Paris), Le Journal des Debats, Le Progrès Medical, Le Voltaire, La Politique Coloniale (Paris), La Lanterne (Paris), Le Petit Temps, Australasian Medical Gazette, &c., &c.*

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

WEDNESDAY (6th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

THURSDAY (7th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

FRIDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

SATURDAY (9th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (4th).—OTOLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-street, Cavendish-square, W.).—4.30 P.M. Cases will be shown by Dr. D. Grant, Dr J. Horne, Dr. Milligan, Mr. de Santi, Dr. StClair Thomson, and Mr. P. M. Yearsley. Specimens will be shown and Notes of Cases read by Mr. C. A. Ballance, Dr. A. Bronner, Mr. A. Cheatle, Sir W. Dalby, Mr. C. H. Fagge, Dr. D. Grant, Mr. R. Lake, Dr. Milligan, Dr. U. Pritchard, and Dr. StClair Thomson. A Discussion will follow each item.

TUESDAY (5th).—PATHOLOGICAL SOCIETY OF LONDON (Medical School of St. Bartholomew's Hospital).—8 P.M. Laboratory Meeting. Dr. Andrewes and Dr. Schölberg: The Relative Agglutination Phenomena seen after Immunisation against the Typhoid Bacillus and its near allies.—Dr. Garrod and Dr. Drysdale: The Action of Intestinal Bacteria upon Bilirubin.—Dr. Klein: (1) A New Pathogenic Torula; (2) Agglutination of Plague Bacilli.—Dr. M. Gordon: Bacillary Forms of Streptococci.—Dr. Andrewes and Dr. Horne: Demonstration of the Collodion Method applied to Paraffin Sections for Class Purposes.

WEDNESDAY (6th).—OBSTETRICAL SOCIETY OF LONDON.—8 P.M. Specimens will be shown by Mr. H. Gliford (introduced by Mr. Targett), Dr. W. Duncan, and others. Annual Meeting. Mr. A. Doran (President): Annual Address.

THE ELIZABETHAN SOCIETY (Toynbee Hall, 28, Commercial-street, E.).—8 P.M. Mr. D'Arcy Power: The Elizabethan Revival of Surgery in England.

THURSDAY (7th).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road. W.).—8.30 P.M. Dr. I. Parsons: Persistent Menorrhagia and its Treatment.

FRIDAY (8th).—ANATOMICAL SOCIETY OF GREAT BRITAIN AND IRELAND (College, Guy's Hospital, S.E.).—4.30 P.M. Exhibition of Specimens by Mr. W. L. Duckworth, Mr. A. M. Paterson, Mr. H. L. Barnard, Prof. Dixon, and Mr. A. Keith. Papers:—Mr. W. H. Gaskell: The Origin of the Vertebrate Ear and Eighth Pair of Cranial Nerves.—Mr. W. L. H. Duckworth: A Critical Review of Recent Literature on Fossil Anthropoids.

WEST KENT MEDICO-CHIRURGICAL SOCIETY (Royal Kent Dispensary, Greenwich-road, S.E.).—8 P.M. Special General Meeting. 8.45 P.M. Ordinary Meeting. (Postponed from Feb. 1st, owing to the funeral of the Queen.)

WEST LONDON MEDICO-CHIRURGICAL SOCIETY (West London Hospital, Hammersmith-road, W.).—Ordinary Meeting.

CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Papers:—Dr. Nabarro (introduced by Dr. Thin): A Case of Pronounced Splenomyelogenic Leucocythæmia subsequent to an attack of Malarial Fever.—Mr. E. W. Shenton (introduced by Dr. J. H. Bryant): Instantaneous Radiography.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (4th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. A. Whitfield: Consultation. (Skin.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. McAdam Eccles: Lantern Demonstration of Hernia Cases.

TUESDAY (5th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. C. T. Williams: Consultation. (Medical.)

WEDNESDAY (6th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—5 P.M. Mr. S. Boyd: Clinical Lecture.

LONDON THROAT HOSPITAL (204, Gt. Portland street, W.).—5 P.M. Dr. Cathcart: Examination of the Larynx. (Post-graduate Course.)

THURSDAY (7th).—CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Dr. D. Grant: Treatment of Tuberculous and other Specific Affections of the Pharynx and Larynx.

CHARING-CROSS HOSPITAL.—4 P.M. Mr. Waterhouse: Surgical Cases. (Post-graduate Course.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—3 P.M. Dr. H. Low: Class. Roentgen Rays. 4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. McAdam Eccles: Lantern Demonstration of Hernia Cases.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Poynton: Demonstration of Selected Cases.

THE HOSPITAL FOR DISEASES OF THE SKIN (Stamford-street, Blackfriars).—3 P.M. Clinical Demonstration:—Dr. P. S. Abraham.

FRIDAY (8th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. T. Collins: Consultation. (Eye.)

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—In consequence of the death of Her Majesty the Queen the Hunterian Dinner, which had been announced for Feb. 14th, will not take place. The Hunterian Oration will, however, be delivered by Mr. N. C. Macnamara, as already announced, at 4 P.M. on Feb. 14th. The College will be closed on Saturday, Feb. 2nd.

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1900, which was completed with the issue of Dec. 29th, and the Title-page to the Volume were given in THE LANCET of Jan. 5th.

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An Address
ON
GASTRIC HÆMORRHAGE AND ITS SURGICAL TREATMENT.

Delivered before the Edinburgh Medico-Chirurgical Society on Wednesday, Feb. 6th, 1901.

BY A. W. MAYO ROBSON, F.R.C.S. ENG.,

SENIOR SURGEON TO THE GENERAL INFIRMARY AT LEEDS; EMERITUS PROFESSOR OF SURGERY IN THE YORKSHIRE COLLEGE OF THE VICTORIA UNIVERSITY.

MR. PRESIDENT,—I can assure you that I feel it a very high honour to be asked to give an address before so distinguished a society as the Edinburgh Medico-Chirurgical Society, and as the northern capital has for ages been such a stronghold of medicine I should almost have hesitated in venturing on another trespass of surgery had I not felt that the opinion held by many practitioners of medicine "that bleeding from the stomach, the result of ulceration, rarely proves fatal," required carefully reconsidering and the facts marshalling and looking at also from the surgical point of view.

Just as in other internal hæmorrhages, bleeding from the stomach was until quite recently a subject that so far as treatment is concerned only came under the notice of the physician, and it is only since the advances in surgery have demonstrated the feasibility and safety of exploring the abdomen that the question of the surgical treatment of hæmatemesis has been a subject that could be discussed with advantage in a mixed medical and surgical society. Were it desirable, the time at my disposal this evening would render it impossible to consider all the varieties of hæmatemesis. I shall therefore confine my remarks altogether to the most common and certainly the most important cause of gastrorrhagia, simple ulcer, leaving out of consideration the vomiting of blood from cirrhosis of the liver, cancer of the stomach, miliary aneurysm, aneurysm of the aorta and other vessels, purpura, scurvy, heart disease, leukæmia, typhoid fever, and other more obscure conditions only amenable to medical treatment.

When it is borne in mind that gastric ulcer occurs in 5 per cent. of the community and that according to Brinton, Habershon, Müller, Dreschfeld, Lebert, and others the mortality from all causes in all cases of ulcer is from 10 per cent. to 50 per cent. it must be at once allowed that the consideration of the subject is a matter that should claim the attention of the profession to a greater extent than it has hitherto done. Its importance will be better grasped if these figures are applied to the population of a city like Leeds which, for convenience' sake, I will take at 500 000. Of this number 25,000 persons may be supposed to have or to have had ulcer of the stomach and out of these, taking the mean estimate of mortality as 25 per cent.—though this is under the mean as given by the authorities named—6250, or 12,500 per 1,000,000, of the population may be expected to die from gastric ulcer or some of its complications. When it is fully grasped that many of the complications can only be dealt with successfully by surgical means and that even in the mildest cases of gastric ulcer some of the most serious complications, such as perforation and hæmorrhage, may suddenly supervene I think that my audience will agree with me when I express an opinion that physicians and surgeons should in the treatment of these serious cases be in closer touch and have a more perfect understanding so that valuable time may not be lost when surgical interference is required. At present I have no hesitation in expressing my conviction that the treatment of gastric ulcer, especially among the working classes, is altogether too careless and unscientific, and I feel sure that the out-patient treatment of such cases, whether in hospital or private practice, is absolutely wrong, and attended with great danger, either of sudden catastrophe from rupture or bleeding, or of the transformation of an acute into a chronic disease which can then only in the greater number of cases be set right by a surgical operation. I think that as soon as gastric ulcer is suspected, the patient should be told the serious nature of the disease and the uncertainty of cure without rest in bed and long-continued care in diet under proper medical supervision. If, then, from business or other reasons, the advice of the medical attendant is ignored, the blame rests on the patient and not, as at present is so often the case, on the slipshod method of aiming at relief and calling it a cure. Fortunately, the surgical treatment of chronic and recurring gastric ulcer and its complications is becoming more and more advocated, and with increasing experience more and more perfect, so that to-day the tale is very different to what it was even a year ago, when I gave a series of lectures on the subject from the Hunterian chair at the Royal College of Surgeons of England. I was then able to collect from all sources 188 cases of operation for chronic gastric ulcer, including 34 cases of my own, but excluding operations for perforation and hæmorrhage. Out of these cases, 31 patients died, giving a mortality of 16·4 per cent., but my recent experience in a largely extended number of cases shows barely a rate of 5 per cent., and as all the patients were either chronic invalids or ill unto death, that means a saving of life in 95 per cent. of the cases, either by gastro-enterostomy, gastroplasty, pyloroplasty, pylorectomy, or gastrolysis.

I must now confine myself to my special subject for this evening, the complication of hæmorrhage, which according to different authorities occurs in a greater or less degree in from 50 to 80 per cent. of all cases of gastric ulcer, and is, according to various authors, fatal when medically treated in from 11 to 3 per cent. (Müller, 11 per cent.; Welch, from 3 to 5 per cent.; Brinton, 5 per cent.: Debove, 5 per cent.; Steiner, 6 36 per cent.; Lebert, 3 per cent.; Dreschfeld, 3½ per cent.; and Rodman, 8 per cent.). If we take the average, 7 per cent. of deaths in cases of gastrorrhagia from ulcer will not be far from the truth. If this is worked out in the 500,000 population of a city like Leeds, it means that of the 25,000 persons who have or have had ulcer, 12,500 suffer from hæmatemesis, and of these 7 per cent., or 875, die. We are, therefore, dealing with a very serious and common accident, and one which a society composed of experienced physicians and surgeons such as are here assembled, can do real good by discussing.

The bleeding may be arterial, venous, or capillary, and curiously, capillary hæmorrhage may be so free as to render it difficult to say that some large vessel has not given way, yet after death a careful examination may fail to discover any gross vascular lesion. Although capillary hæmorrhage may supervene on other conditions, such as congested portal circulation, enlargement of the spleen, and general engorgement of the venous system, when general treatment will usually be all-sufficient, yet there are two special conditions in which the bleeding may be so free as to raise the question of surgical treatment: these are vicarious hæmatemesis at the menstrual period, and post-operative hæmatemesis. The former condition is well recognised and usually yields to medical treatment. Petersen's experience of surgical treatment in three cases terminating fatally after operation would not encourage surgical intervention unless the circumstances of the case were very exceptional.

In my Hunterian lectures I drew attention to post-operative hæmatemesis, of which I have seen several cases; three fatal. The cases occurred after operations for intestinal obstruction, tuberculous peritonitis, herniotomy, and gall-bladder operations. Other cases have since been reported; one by Dr. Winslow in a stout woman, aged 65 years, after operation for umbilical hernia, where death occurred from profuse gastrorrhagia on the third day, and at the post-mortem examination, though the stomach and intestines contained a large quantity of blood, no vascular lesion could be discovered; and another by Mr. C. W. Mansell Moullin in a young man, aged 23 years, who died from profuse hæmatemesis within 48 hours of a simple exploratory incision in the left iliac fossa It was then neither generally recognised nor well understood, but since that time several papers have appeared on the subject both at home and abroad, and though now fully recognised its cause remains obscure. Herr Eiselt ·g tried to explain it as a result of injury to the omentum from several cases observed in the Königsberg Klinik occurring after hernia operations, after operations involving ligature of the omentum. and after torsion of the omentum. Although this explanation may serve as a cause it does not account for all cases, as proved by one of my own, in which a malignant tumour of the common bile-duct causing jaundice and distended gall-bladder was operated on under cocaine, the distended gall-bladder being simply exposed through a small incision, stitched to the parietes and drained, without in any way exposing any other viscera, yet violent hæmatemesis set in the day after operation and proved fatal in three days. This case also disproves

two other theories that have been advanced—one that general anæsthesia is the cause, and another that sepsis affords an explanation, the latter being a theory advanced by Dr. Rodman in his oration before the American Medical Association in June, 1900. That sepsis was not the explanation in the only three cases in which I have had the opportunity of observing the condition after death is undoubted, for in each there was no sign of peritonitis or other septic trouble, and, moreover, there was no gross evidence of ulcer or injury to any vessel of sufficient size to be visible to the naked eye. The theory of sepsis is also negatived by recovery in the greater number of cases and by there being no sign of distension or of the other usual concomitants of septicæmia when it occurs after abdominal operations. The only explanation that seems to me at all feasible is that the hæmorrhage is dependent on a reflex nervous influence, and it is quite possible that this same explanation applies to vicarious hæmatemesis at the menstrual period; but it should also be remembered that slight erosion of the mucous membrane of the stomach sufficiently deep to cause severe gastrorrhagia may be almost imperceptible to the naked eye even when searched for carefully on the post-mortem table. Though serious, it is not necessarily fatal, and I have known several cases to yield to general treatment, such as high injections of hot water at a temperature of from 112° to 116° F., as advocated by Tripier, free purgation by calomel, the stopping of all mouth-feeding and the application of ice to the epigastrium, &c. In post-operative hæmatemesis operation can be seldom feasible or advisable, and Reichard's experience of operations followed by death in two cases would lead me in the future as in the past to rely on general rather than on surgical treatment.

Venous hæmorrhage, if from perforation of one of the large trunks such as the coronary, splenic, or portal, may cause rapid death, but owing to the diminished pressure in the veins and the more languid circulation a rapidly fatal result is less likely than in arterial bleeding, and should the hæmorrhage persist or recur such cases would be likely to benefit by surgical treatment.

Arterial bleeding is mostly responsible for the serious and fatal hæmatemesis due to gastric ulcer. The bleeding may be from the small arterioles which radiate between the peptic glands, from the trunks along the curvatures, the coronary being the most frequently affected, or from extrinsic arteries, the splenic alone being responsible according to Brinton for 55 per cent. of the deaths in fatal hæmatemesis. The following list of 54 fatal cases of hæmatemesis is taken from M. Savariaud's Thesis: Ulcerations of the splenic artery, 17 cases; ulcerations of the coronary artery, 6 cases; ulcerations of the pancreatico-duodenal, 7 cases; ulcerations of the gastric arterioles, 10 cases; branches of the coronary vein, 2 cases; other veins, 2 cases; vessel not determined, 2 cases; no vascular orifice visible, 4 cases; vessel not mentioned, 4 cases. The pancreatico-duodenal and right gastro-epiploic are the arteries chiefly affected in pyloric and duodenal ulcers. The peculiarly fatal nature of hæmorrhages from medium-sized arteries depends on the fact that an ulcer makes a lateral opening into the vessel which prevents natural hæmastasis by retraction and contraction of the artery, the whole force of the heart is then exerted on the clot which tends to form during the syncope that usually occurs when a large quantity of blood is suddenly poured out.

The interval between the first onset of bleeding and death is of great importance surgically and is well shown in the table from M. Savariaud's Thesis which is therefore worthy of note.

Vessel.	No. of cases.	Sudden death.	Rapid death.	Survived considerable time.
Heart	4	1	1	2 (three days).
Aorta	2	—	1	1 (10 days).
Hepatic	2	—	1	1 (10 days).
Splenic	17	3	7	7 (from two to eight days).
Coronary	6	1	3	2
Pancreatico-duodenal	6	1	3	2 (from eight to 15 days).
Arterioles	10	1	1	8 (from four to 15 days).
Small veins	4	1	1	2 (from seven to 11 days).
Invisible veins	3	—	1	2 (21 days).

This table shows that in the present state of our knowledge it is impossible to diagnose the size of the vessel perforated either from the amount of blood lost or the length of survival. A probable diagnosis of the site of bleeding may, however, often be arrived at in hæmatemesis from ulcer by a careful study of the previous history, especially with regard to the site of pain, the time of onset after food, and the influence of posture on it, as well as by the way in which the pain radiates. The situation of the tender spot, the presence or absence of tumour and of dilatation or contraction of the stomach also afford assistance. As will be seen later the diagnosis of the site of the ulcer and therefore presumably of the bleeding is of great importance from a surgical point of view and will influence both the advice given as to treatment and the method of procedure when the abdomen is opened.

TREATMENT.

From the fact that medical and general treatment is successful in arresting hæmatemesis in 93 per cent. of cases, and that it is difficult in the present state of our knowledge to say at first that the bleeding is not occurring from capillaries or small arterioles, it necessarily follows that medical treatment should always have a fair trial in every case of acute hæmatemesis. The very fact of medical treatment being so often successful in cases of apparently alarming hæmatemesis, goes to show that capillary oozing or bleeding from arterioles is much more common and accounts for many more cases of gastric hæmorrhage than has hitherto been supposed. But while thoroughly believing this we must also not close our eyes to the experience we have in general surgery of bleeding from medium-sized arteries, such as the radial or ulnar, which we know would rapidly bleed a patient to death, if only perforated on one side and surrounded by warm compresses, a condition that practically applies in all cases of hæmatemesis where the larger vessels are eroded. If, therefore, medical treatment and rest properly carried out are not successful in arresting the bleeding in a few hours, or if after being arrested it recurs, we should be driven to the conclusion that a large vessel is perforated, and if a surgeon has not been previously asked to see the case, I would say emphatically that a surgical consultation ought to be held with a view to considering the question of operation and immediate arrest of the bleeding by direct treatment if the patient is in a fit condition to bear it, just as would be the case if an ovarian artery were bleeding in a case of ruptured extra-uterine gestation, or a brachial or radial after an accident. The views which I am enunciating to-day are perhaps more pronounced and more emphatic than those which I expressed a year ago in my Hunterian lectures, this being the result of a much extended experience in the surgery of the stomach, a much greater success on all hands in the surgical treatment of stomach diseases and a careful study of more recent statistics.

An analysis of the table by M. Savariaud of 54 cases showing the prolongation of life in various fatal cases of hæmatemesis, demonstrates that in 10 out of 54 cases—that is in 18·5 per cent.—death occurs so rapidly that there is barely time to consider the question of surgical treatment, and that in 17 out of the 54 cases, which equals 31·4 per cent., death occurs within from 24 to 36 hours after the first appearance of hæmorrhage. Now, although at present these cases are often allowed to die without operation, yet if the bleeding were from a radial or tibial or any accessible artery they would all be saved by the simple operation of direct ligature of the bleeding vessel, which operation would also cure the bleeding stomach artery could it be readily found. The difference between the two is, however, not merely only one of accessibility, but also one of diagnosis, for if we are able to diagnose capillary hæmorrhage, the case will be generally one for medical treatment alone, but if the time arrives when we can diagnose with great probability arterial hæmorrhage from a large vessel the case will, I believe, be considered one for the adoption of surgical measures. Our efforts, both as physicians and surgeons, must therefore be directed towards making a diagnosis of the size of the damaged vessel, for if it can be asserted that in all probability a large artery has given way, an operation could be undertaken in an early stage of the case, before exhaustion and profound anæmia have supervened, with great probability of success.

Where there have been distinct signs of gastric ulcer preceding the hæmorrhage and where a sudden hæmatemesis has occurred with great loss of blood accompanied by an attack of syncope, a large vessel will usually be found to be

the source of the bleeding. In all such cases not speedily yielding to medical and general means surgical treatment will probably in the future be carefully considered and in some it will be followed out, for there can be no absolute rule formulated that will apply to every case and each must be considered on its merits. The present condition of the patient, the previous history, the surroundings, the possibility of skilled surgery and of good nursing and other circumstances will all help in the decision. Although both surgical and medical treatment in cases of fulminating hæmorrhage has so far yielded disappointing results, in the remaining 50 per cent. of fatal hæmorrhage where repeated bleedings occur and the interval between the first seizure and death varies from a few days to two or three weeks, medical treatment will have been fully tried and failed and there can be no question as to the advisability of surgical procedures being adopted.

At present with the exception of Dieulafoy, who advocates operation during the first bleeding if as much as half a litre of blood is lost, all other surgeons who have written on the subject agree that general means ought to be relied on during and after a first attack, as in from 93 to 95 per cent of cases such treatment succeeds, and until our means of diagnosis as to the size of vessel injured is rendered more reliable we must assent to this rule; but after a second bleeding I have no hesitation in advising operation even during the course of the hæmorrhage if the patient can stand it or as soon after as his condition will permit the operation to be done, for experience tells us that further hæmorrhages are almost certain to occur unless preventive measures be adopted. I saw a case of this kind last year which created a great impression on my mind. I was asked to see a single woman, close on 30 years of age, with a view to operation after a second attack of hæmatemesis, which had, however, ceased when I saw her, and as the patient, though anæmic, was apparently much easier and expressed herself as feeling well operation was deferred, and a third attack which occurred a few days later during my temporary absence from home proved fatal. In another case I operated during the third attack, found the bleeding vessel, and saved the patient. Doubtless the desirability of stopping bleeding from an ulcer of the stomach by surgical means must have occurred to many minds before being put into execution.

To Mikulicz, however, belongs the claim of having been the first to operate, on Feb. 13th, 1887, for hæmorrhage from a gastric ulcer, though Roux of Lausanne was the first to perform a successful operation, and that in a case of hæmorrhage from the coronary artery in which he excised the ulcer and ligatured the artery at both ends. In my Hunterian lectures I drew up a table of all the cases of operations for hæmatemesis I could then find. It included operations for post-operative and vicarious hæmorrhage, cases not associated with ulceration and all ending fatally. Excluding these and correcting Hartmann's series it would give 26 cases of acute hæmatemesis with 14 deaths and 19 cases of chronic hæmatemesis with two deaths; otherwise a mortality of 53 8 per cent. in acute and of 10·5 per cent. in chronic hæmatemesis treated surgically. A more recent table has been drawn up by Dr. Rodman[1] in which he has collected 32 operations for acute gastrorrhagia with 13 deaths, or a mortality of 40·6 per cent., and 31 operations for frequently recurring, or so-called chronic, hæmorrhages with six deaths, or a mortality of 19·3 per cent., and even since that list was drawn up other operations have been performed. This mortality is very high, but it must be remembered that in every case medical treatment had been first tried, and in many of the cases probably over too long a period before operation was performed; for instance, in one of my cases in which I operated successfully during the third seizure the blood seen at the operation was so diluted and thin as to be more like water tinged with blood than blood itself, yet the bleeding was still going on. Moreover, it is to be remembered that gastric surgery is advancing in safety and efficiency by leaps and bounds and will before long I feel sure, be one of the most satisfactory branches of the surgeon's work.

TECHNIQUE OF OPERATION FOR GASTRORRHAGIA.

On account of the fear of exciting fresh hæmorrhage, it is undesirable to wash out the stomach before operating on a bleeding ulcer, and as the patient is usually anæmic and will therefore bear shock badly it is desirable to have him enveloped in cotton-wool or otherwise kept warm on a heated table and to give him a subcutaneous injection of strychnine before operation. If it be unnecessary to infuse saline fluid before the operation an assistant should be ready to perform that duty while the abdominal operation is being proceeded with should it be called for. After the abdomen is opened the stomach may be emptied by pressing the contents into the duodenum, as suggested by M. Terrier. This saves much time, and rapidity is of great importance. The surface of the stomach should then be carefully examined, as very frequently a puckering of the surface or thickening of the coats will be noticed at the site of the ulcer, or a difference in colour may sometimes indicate its site. Should the operator be fortunately able to find these indications much time may be saved, but if no indications of this sort be obtainable, the stomach must be drawn well forward and opened either by a vertical incision, which gives less hæmorrhage, or by an incision in the long axis of the stomach, which affords a much better view of the interior. In order to avoid soiling the peritoneum, thin flat sponges should be placed within the abdomen and it is well to have a perforated sterilised gauze pad covering the stomach, the opening to correspond with the opening in the stomach. The edges of the stomach should then be held open by forceps, one above and below and one at each end.

The interior of the stomach must now be systematically examined; first the anterior and posterior surfaces, then the upper and lower curvatures, and lastly the pyloric and cardiac orifices, all of which can be done by the naked eye or by the aid of an electric cystoscope or a reflected light. If the posterior wall of the stomach cannot be efficiently examined a slit may be made in the omentum and two fingers, or even the whole hand, pushed through it and employed to invaginate the posterior wall. If no ulcer can be found on the wall of the stomach the duodenum should be explored, not only by the finger but by invagination. If no ulcer be found anywhere and the bleeding proves to be capillary or from small undiscoverable ulcers, gastro-enterostomy should be performed, but if an ulcer be discovered and it be possible to excise it, that operation should be done, as it undoubtedly offers the likeliest method of cure. After excision of the ulcer and ligature of the bleeding vessels the edges of the wound should be brought together by sutures, of which one or two layers may be employed. Should the excision involve the peritoneal coat, it would be desirable to apply Lembert's sutures, and if it be on the posterior wall the operation may present some, though not insuperable, difficulty. Should the ulcer be discovered in some region where excision is impracticable—for instance, near the cardiac end—the method adopted by Mikulicz in his first operation in 1887, of applying the cautery, may be employed. This seems to have answered well in several cases, and where death occurred afterwards it was not from a recurrence of the bleeding. In a case of this kind gastro-enterostomy is also advisable by way of setting the stomach at rest. If any superficial points of bleeding be discovered they may be caught up by forceps and ligatured, but this is more easily said than done, as the mucous membrane is very friable, and a ligature if drawn at all tightly tends to cut its way through; moreover, forceps easily tear the mucous membrane and may produce a larger bleeding area. The method of ligaturing *en masse* may be employed if the ulcer is small; it has proved serviceable in several cases, for instance in Case 5, which will be described presently, and it is easy of application when the ulcer can be reached. It has been tested by experiments on animals by Dr. Eisendrath, but it has been shown to endanger perforation if the serous coat be taken up, except when supported by external sutures. Ligature of the main arteries of the stomach was suggested theoretically by Savariaud when no bleeding ulcer could be discovered; it does not, however, commend itself as being safe or likely to be efficient.

Should the bleeding be from an ulcer at the pylorus the operation of pyloroplasty may be performed, the ulcer being excised and the edges of the gap left by the excised ulcer, as well as the edges of the incision being united so that the line of sutures shall be transverse to the axis of the pylorus. I would not, however, advise pyloroplasty when there is active ulceration of the pylorus unless the ulcer can be completely excised, for in three cases of this kind I have had subsequent disappointments owing to contraction in healing. In one case the patient made a good recovery from the operation but subsequently suffered from stenosis, for which a further operation had to be done. In a second case recovery took place and the patient regained his

[1] Philadelphia Medical Journal, June 9th, 1900.

lost weight, but subsequently a tumour of the pylorus developed which was thought to be cancer and for which I had to perform pylorectomy, and in the third case perforation subsequently occurred. I think, therefore, that in cases of ulcer of the pylorus where a clean excision of the ulcer cannot be done it would be better to perform gastro-enterostomy or pylorectomy, whichever at the time may appear to be easier. Wherever the pylorus is adherent, as in my experience it is in so many cases of ulcer, I should certainly prefer gastro-enterostomy; but if the pylorus be extensively ulcerated and free from adhesions pylorectomy can be almost as quickly performed as gastro-enterostomy, seeing that the pylorus is already in the hand. Although the operative treatment of parenchymatous or capillary hæmorrhage by any surgical method would seem to be of doubtful value—for according to a report by Petersen from Czerny's clinic of three cases operated upon for severe parenchymatous hæmorrhage from vicarious menstruation operation entirely failed to relieve, and in two other cases of post-operative parenchymatous hæmorrhage by Reichard the patients both died—yet if such cases, owing to persistence, seem to call for operation, then gastro-enterostomy, by securing complete physiological rest, would seem to offer the best chance of success.

In performing gastro-enterostomy my recent experience has led me to prefer the posterior operation which I have modified by using my decalcified bone bobbin as a hollow splint over which to apply the double continuous suture, uniting the mucous and serous margins of the openings between the viscera, thus securing an immediately patent channel between the stomach and jejunum and a temporary protection to the line of union. I may say that my last 20 gastro-enterostomies by this plan have all recovered without regurgitant vomiting or other untoward symptoms, thus affording a great contrast to what has occurred in the anterior operation, both in my own and in the hands of other surgeons.

The conclusions I would urge concerning the treatment of gastric ulcer are the following:—1. All cases of acute uncomplicated gastric ulcer should be submitted to thorough medical treatment in the shape of long-continued rest and attention to diet, the patients not being allowed to get up or to resume solid food until at least a fortnight after all disappearance of pain. 2. Where the ulceration persists and proves intractable to medical treatment, or where relapses occur, gastro-enterostomy should be performed so as to secure physiological rest and relieve the hyper-acidity of the gastric juice nearly always found in such cases. 3. Perforation demands immediate surgical treatment. 4. The complications of disabling adhesions around the stomach and pylorus, pyloric contraction, and hour-glass contraction due to chronic ulcers leading to pain, dilatation, loss of flesh, and general impairment of health, now often treated as chronic indigestion, should be treated surgically. 5. In recurring, or so-called chronic hæmatemesis from gastric ulcer, surgical treatment is decidedly called for. 6. In acute hæmatemesis, further accuracy in diagnosis as to the size of the bleeding vessels is urgently needed; and the coöperation of the physician and surgeon is advisable in all cases of hæmatemesis, so that if relief be not obtained by medical and general treatment surgical means may be adopted if the bleeding is believed to occur from a large vessel; but seeing that capillary hæmorrhage is capable of relief by medical means alone, medical should always precede surgical treatment.

The following are brief descriptions of all the cases of hæmatemesis on which I have operated.

CASE 1. *Chronic hæmatemesis; ulcer of the pylorus; pylorectomy.*—In 1891 I was asked by a medical friend to see a man, aged 54 years, who for six months had suffered from pain coming on an hour after food, and more recently from vomiting of blood of coffee-ground character in considerable quantities, so that he was not only reduced in flesh and strength but had been rendered profoundly anæmic by the loss of blood. A tumour of the pylorus could be easily felt and the stomach was markedly dilated. As he was rapidly losing ground I operated and found the pylorus thickened and nodular with adhesions to the liver and omentum. After separating the adhesions the pylorus was excised and the open end of the duodenum was fixed to the opening in the stomach, the rest of the stomach aperture being closed by a double layer of sutures. The tumour proved to be inflammatory around an open ulcer which had been the source of the hæmorrhage. The bleeding was not repeated and the patient rapidly gained flesh and returned home within the month.

CASE 2. *Hæmatemesis following on a stab wound of the abdomen; abdominal section.*—On Jan. 27th, 1897, a young mechanic, aged 20 years, was admitted to the Leeds General Infirmary under my care with free vomiting of bright blood following on a stab wound of the abdomen, the wound having been inflicted by a long fine triangular file that had caught in the lathe at which the youth had been turning. On admission he was pale and collapsed, with a pulse of 190, and as there were signs of free fluid in the peritoneal cavity, it was thought that the stomach had been perforated and that the bleeding was from a ruptured gastric artery. On opening the abdomen a large quantity of blood and clot was found free in the abdominal cavity and in the kidney pouches and pelvis, but on examining carefully the stomach no perforation could be found. After some searching the superior mesenteric vein was found bleeding freely, the file having bruised and pushed aside the stomach, pierced the great omentum, and then wounded the vein. The abdomen was washed out with hot water after the vein had been ligatured, and this also arrested the gastrorrhagia, as the patient made a good recovery and had no further hæmatemesis. The shock was relieved by infusion of three pints of normal saline solution into the median basilic vein and by injection of liquor strychniæ. The bleeding was evidently from bruising, and possibly laceration, of the mucous coat of the stomach and not from a large vessel, as it was arrested by the hot lavage.

CASE 3. *Acute hæmatemesis from ulcer of the duodenum eroding the gastro-duodenal artery; anterior gastro-enterostomy with Murphy's button.*—I was asked by my colleague, Dr. T. Churton, to see a man, aged 36 years, who after a year's history of ulcer of the stomach with great loss of flesh and strength was suddenly seized with profuse hæmatemesis, which was followed in 24 hours by a second seizure, when I saw him. He was then extremely weak and very thin and anæmic and looked as if he must die if further hæmorrhage occurred. His pulse at the time of operation was 150. The history clearly pointed to the pylorus as being the seat of bleeding, but the patient was too ill to bear pylorectomy and an anterior gastro-enterostomy was performed by means of a Murphy button, the whole operation only occupying 15 minutes. He bore the shock well and for five days made good progress, but on the sixth day he was suddenly seized with severe abdominal pain, and from that time he lost strength; vomiting set in on the eighth day and he died on the tenth. No further bleeding occurred and at the necropsy a duodenal ulcer opening into the gastro-duodenal artery was found. The cause of death was peritonitis, the result of the leakage when the button began to separate. So far as the hæmorrhage was concerned the gastro-enterostomy had been completely successful, and the vessel, though perforated at one side, was occupied by a firm clot.

CASE 4.—A man, aged 44 years, was sent to me by Dr. P. Macgregor of Huddersfield, on Jan. 2nd, 1900, with the history that he had had pain after food together with other symptoms of gastric ulcer for four years, though his first attack of vomiting blood occurred in May of the previous year. The bleeding was rather profuse, but under medical treatment and rest he recovered and was able to resume his occupation. A week before he was sent to me there had been a recurrence of the hæmorrhage which was repeated three days later. On his arrival at the surgical home he was in a state of collapse with a barely perceptible pulse. There was well-marked dilatation of the stomach with tenderness over the pylorus. The history of the pain occurring one and a half hours after food, together with the site of the tenderness and the presence of a large amount of blood in the motions, left no doubt but that the ulcer was at or near the pylorus. As the bleeding had recurred twice in the week and was probably persisting and passing into the bowel, operation was decided on. This was done on the 4th. As the patient was in such a feeble condition every precaution was taken to guard against shock, and it was decided only to perform gastro-enterostomy as it was quite clear that he could not stand any prolonged search for the bleeding point. A posterior gastro-enterostomy was therefore done, a decalcified bone bobbin being used to make the anastomosis. His temperature and pulse were never above normal and he made an uninterrupted recovery. He was fed by nutrient enemata for the first few days, only taking sips of water by the mouth, but at the end of that time he was allowed to

take milk and soda water, and then gradually to have stronger food. He was up at the end of the third week and returned home within the month. A year later he was in perfect health and had had no recurrence of his stomach symptoms or any further bleeding.

CASE 5.—On July 6th, 1900, I was asked by Dr. G. P. Humphery of Armley to see a female patient, aged 33 years, who had been seized with violent hæmatemesis a week previously, the attack having recurred four days later and again on the day when I saw her. The patient had been anæmic before operation and had had some slight indigestion, but otherwise she did not consider herself ill, and she had been married only three months. On my arrival I found her quite blanched and with a very rapid, feeble pulse, but as the bleeding had resisted ordinary remedies and as she would clearly die if unrelieved, though it seemed a rather desperate procedure, we decided to give her the chance of relief by operation. She was removed by ambulance to a surgical home, and as during the journey the bleeding began again I operated without delay. A pint of saline fluid containing one ounce of brandy was given into the rectum and 10 minims of liquor strychniæ were administered just before the operation, the patient being completely enveloped in cotton-wool. On opening the abdomen there were no indications on the surface of the stomach as to the situation of the bleeding ulcer. I therefore made an incision in the axis of the stomach which enabled me to explore the interior. I counted no less than seven bleeding points. As two of them were bleeding freely I took them up by artery forceps and ligatured the mucous membrane *en masse;* the other points stopped on exposure to air. I then rapidly closed the wound in the stomach and performed posterior gastro-enterostomy, using one of my bone bobbins as a splint over which to make the anastomosis. We had a little anxiety on account of shock for the first 24 hours, but by administering saline fluid by the bowel and injecting it freely into the subcutaneous tissue, together with the administration of several injections of liquor strychniæ, the difficulties were tided over and the patient's further progress towards recovery was uninterrupted. She was able to take solid food in the second week, and when she left at the end of the month she could eat any ordinary food without discomfort. Six months later she had no recurrence of symptoms and was well in every respect.

Five is not a large number of cases to report, but the treatment of hæmatemesis by operation is a comparatively new operation, and only few cases have been reported. Had it not been for the accident of leakage when a Murphy button was beginning to separate there would have been no casualty in the list, and that is an accident which is avoidable by employing sutures around a decalcified bone bobbin, as is now my regular custom. Undoubtedly without operation all the patients would have died. The cases present individual points of interest. In Case 1 a pylorectomy was performed as the pylorus was the site of a tumour that might have been malignant, though could it have been asserted that the enlargement was simply thickening around an ulcer gastro-enterostomy would have answered equally well, as it did in Case 3 and Case 4 by securing physiological rest and freedom from the irritation due to hyper-acidity of the gastric juice which is usually present in ulcer of the stomach. In Case 2 hot lavage acted in the same way as it does when given by high injections into the bowel, only in this case it was necessary to open the abdomen to search for and to ligature the large vessel bleeding into the peritoneum. Case 5 illustrated the feasibility of exploring the stomach even in a patient brought very low by excessive loss of blood, and although the ligature of the chief bleeding points was effected it was deemed advisable to secure rest to the stomach by performing a posterior gastro-enterostomy, especially as it could be done without materially prolonging the operation.

It only remains for me to thank you for giving me such a patient hearing and to hope that the discussion which is to follow may prove of interest to the society and to the profession at large.

NEWPORT WORKMEN'S INFIRMARY FUND.—At a meeting of the committee of the Newport (Mon.) Workmen's Infirmary Fund held on Jan. 29th it was reported that £1317 had been received during 1900 £1000 were transferred to the infirmary, leaving a balance of £266 in hand after sundry payments.

The Baillie Lectures

ON

CONSIDERATIONS TOUCHING THE PATHOLOGY AND RELATIONS OF DIABETES.

Delivered at St. George's Hospital on Dec. 5th and 12th, 1900,

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LECTURE II.[1]

Delivered on Dec. 12th, 1900.

GLYCOGENESIS.

GENTLEMEN,—Some of the mystery which surrounds diabetes will be dissipated when we have come to a common consent about the bearing of the liver upon sugar. When Bernard made his famous research more than 50 years ago a sudden light was thrown upon glycosuria which led to the expectation that all would be soon made clear. But this hope has not been justified. We seem to be within sight of a great discovery without knowing exactly where to seize it. The spirits of the wise sit in the clouds and mock us. The time will come when all the disjointed fragments of the puzzle will be fitted together and those who look back upon the accomplishment may say, How easy, how obvious, and how strangely missed!

The liver is the great, though not the only, seat of the making of glycogen. As to the making of sugar there is more to be said. The liver receives by the portal vein what the veins take up from the alimentary canal, passes it through its own capillary system, with results which are still *sub judice*, and discharges the whole by the hepatic vein through the pulmonary into the general circulation. Certain parts of the food, notably the carbohydrates, are arrested in the liver and converted into glycogen or animal starch. This was discovered by Bernard and is admitted by all. The next step is upon debateable ground. Bernard supposed that the glycogen was converted in the liver into sugar and discharged as such into the blood. Thus the liver, according to Bernard, makes sugar out of glycogen and feeds the blood with it. This view is diametrically opposed by Pavy who considers that the liver, in making glycogen out of the carbohydrates, keeps sugar out of the blood. In Bernard's view the liver is a sugar-making organ, in Pavy's a sugar-arresting organ. Both these physiologists agree in looking upon diabetes as the result of too much sugar being put into the blood; they differ in the respect that according to Bernard too much is put in, according to Pavy too little is kept out. In Dr. Pavy's own words the sugar in diabetes is allowed to pass through which ought to have been arrested and assimilated. I will not presume to decide between these conflicting opinions. Both must be treated with respect. Bernard was the greatest physiological genius of the nineteenth century. Pavy has spent a long life of unremitting labour in a field of inquiry wherein he can scarcely be supposed to have toiled in vain. For the present we must halt between the two opinions, but it cannot be for long.

That the blood in diabetes contains too much sugar is undisputed. Theoretically this may be either because too much gets in or because too little is taken out. In both the views which have as yet been stated too much gets in, but it behoves us to glance at the other possibility. If any sugar reaches the blood in health, which Pavy contends is not the case, it is used up, since none, or practically none, escapes with the urine. Supposing it to reach the blood, to what use is it put? Bernard first thought that it was burnt in the lungs, afterwards that it was consumed in the systemic capillaries—in other words, by the tissues. It is clear that if any sugar enters the blood in health it is disposed of in

[1] Lecture I. was published in THE LANCET of Feb. 2nd, 1901, p. 299.

the body, since none leaves it excepting under disease. It has been supposed by some that the accumulation of diabetes is due to insufficient removal rather than superabundant introduction. In this view the tissues fail to take up their due of sugar, which accordingly remains in the blood. This failure, however, supposing it to occur, must be quite inadequate to account for the enormous amount of sugar which the blood, in cases of severe diabetes, pours into the urine. This may come to over two pounds a day, a quantity which cannot be explained otherwise than by over-production of the article. It is impossible to suppose that the normal appetite of the tissues for sugar, if such there be, could account for so large a consumption of this aliment. We must conclude that diabetes depends on too much sugar being put into the blood rather than on too little being taken out, and the question narrows itself as to whence this is derived. I have already referred to Bernard's view that under diabetes too much sugar, or sugar instead of glycogen, is made in the liver. I must dwell for a moment on Pavy's contention that instead of too much being made too little is kept back. Pavy[2] holds that the carbohydrates of the food are, in health, prevented from reaching the general circulation by three modes of arrest: (1) conversion into fat before they reach the liver, mainly in the villi of the intestine; (2) conversion into proteid by means of superadded nitrogen; and (3) transformation into glycogen in the liver.

The failure of all or of any of these modes of turning the sugar into something else would, in this view, lead to its entrance into the general circulation and its discharge with the urine. In one view the liver has all to do with the diabetic process; in the other view something to do with it. Here I leave the question to the arbitration of the future with only this remark—whatever view physiologists may hereafter agree upon they will have to take into account the connexion of glycosuria with the nervous system as shown experimentally in animals, traumatically in man, and as the result of certain mental states and impressions. We know nothing of the action of the nervous system upon the villi or upon the building up of the carbohydrates into proteid, but we cannot doubt that the function of the liver is regulated by its nerves. All glands are under nervous control, and of two kinds—exciting and inhibitory. It is to be presumed that the sugar-puncture acts especially upon the liver, and that through its nerves, whether in the way of excitement or restraint. As a provisional theory, or hypothesis, which is probable though unproved, we may accept that which connects human diabetes, or at least the commonest form of it, with a morbid influence directed upon the liver from the brain.

It is probable that the glycosuric action in connexion with puncture is of the nature of irritation not of paralysis. For the sugar presents itself while the injury is recent and disappears when the immediate effect has subsided, before there has been time for any structural repair. What nerves are irritated is another question; there are nerves which promote glandular action and others which restrain it. Whether the irritation be of a kind to excite or inhibit may be regarded as uncertain. It is conceivable that the irritation may act by preventing the proper development of glycogen and allowing its elements to pass as sugar without that intermediary. On the other hand, it is possible that the morbid influence may cause the glycogen, after being properly formed, to run into sugar instead of being applied to other uses.

I have alluded to certain states of mind, or, in other words, of brain, as productive of diabetes. Grief, anxiety, and terror are noticeable in this relation. How these act we know not. If we require the satisfaction of a phrase we may say by means of cerebral irritation.

It is apparent, speaking superficially, without speculating on ultimate and hidden causes, that there is more than one kind of diabetes, or rather diabetes of more than one origin. Facts have come to light with regard to the pancreas which our present knowledge does not suffice to explain but which will have to be taken into account in any comprehensive view of diabetes. It has been shown that complete removal of the pancreas in the dog is followed by persistent and fatal glycosuria. If the removal be incomplete no such result follows nor does it follow if a piece of the organ be transplanted to another part of the body. The duct may be tied without any result in glycosuria which does not ensue so long as any portion of the pancreas is in vascular connexion with the system. It would seem that the pancreas, apart from its secretion, does something to the blood which in conditions of health restrains the formation of sugar. Many instances have been brought to light in which disease of the pancreas in the human subject has been attended with diabetes, fibroid and fatty degeneration, cancer, and calculi.

In diabetes there is much room for speculation, hypothesis, and error. Provisionally it may be suggested that the pancreatic origin of this disease is not necessarily inconsistent with its more frequent origin in the brain and the liver. It looks as if the carbohydrates were always tending to run into sugar and needed prevention at every stage. Hepatic glycogen passes rapidly into sugar as a post-mortem change. It is restrained from doing so above measure during life and health, presumably by an influence directed upon the liver by its nerves. Every dead man should be diabetic could he feast up to the moment of departure and secrete urine afterwards. There may be other stages at which the carbohydrates tend to slip into sugar if not prevented; one of these may be in the systemic blood, and the pancreas be the withholding agent. It may be that the saccharine conversion needs to be bridled in two places, the liver holding one rein, the pancreas the other. But I know the stigma which attaches to those who rush in where their betters fear to tread, and will quit the dark paths of physiology, which are not within my beat, for the familiar march of practical medicine where the concrete supersedes the abstract, where experience takes the place of experiment, and where science, often falsely so called, must ever submit to the correction of the wards and the dead-house.

The chief purpose of pathological research is to direct or withhold us in the treatment of disease. In this view the treatment of diabetes gains little from pathology. We must presume that the disorder depends on a lesion which is unknown in its fundamental part though converging evidence assigns it to the nervous system. We have reason to believe that the essential lesion is not to be cured though some of its effects can be obviated. We can treat the symptoms and results but not the disease. The most characteristic of these is glycosuria, and it may be added that it is the one most amenable to therapeutic measures. The discovery of Rollo, an army surgeon whose name suggests other adventures than with sugar and starch, is the basis of the scientific treatment of diabetes; not that this comprises the whole problem but only the first part of it. In early or slight cases the removal, even the partial removal, of sugar and starch from the diet may accomplish the removal of sugar from the urine; but in more advanced or severe conditions the glycosuria will persist notwithstanding that the food be deprived of these carbohydrates with the greatest attainable strictness. It seems that in mild or incipient cases the sugar which finds exit is only that which is introduced into the body as sugar or starch; in the more severe or advanced cases the sugar is formed at the expense of the nitrogenous constituents of the blood. The albumin is broken in two, one fragment being sugar, the other urea. Both make their way out by the kidneys. Thus the albumin, the chief nourisher in life's feast, becomes, so far as the disease seizes it, wholly excremental and feeds the urine instead of the body. "Hydrops ad matulam" is an old and not inappropriate name for the disease. The language sometimes

[2] Dr. Pavy has kindly enabled me to append in his own words an abstract of his views as contrasted with those of Bernard. "The position," writes Dr. Pavy, "may be thus expressed: Under Bernard's view the carbohydrate of the food reaches the general circulation as sugar and is conveyed to the tissues for oxidation. A portion in its transit through the liver is temporarily detained as glycogen to be reconverted into sugar and sent to the tissues as needed. I hold that there is not this transit of sugar through the circulation, from the food to the tissues, in a free form. The sugar in the blood, which is only small in amount compared with what was formerly supposed, I regard as a constitutional ingredient just as exists in all the tissues of the body and unconnected with the application of alimentary carbohydrate. It is not influenced in amount by the nature of the food; it does not perceptibly vary in amount in different parts of the general circulation; and it is present after prolonged fasting even after glycogen has disappeared completely from the liver and tissues. Looking at all the existing circumstances it is not conceivable that this sugar is being drawn upon for direct oxidation purposes, but that it rather serves as a pabulum in connexion with nutrition. The trace of sugar found in healthy urine harmonises with the condition of normal blood. I consider that the carbohydrate of food is disposed of—(1) by conversion into fat, (2) by synthesis into proteid, and (3) by transformation into glycogen, and is thus prevented from reaching the general circulation as sugar. When such is the case the urine remains uninfluenced, whilst if the carbohydrate should not be thus fully disposed of, that which escapes being disposed of will reach the general circulation as sugar and thence escape as waste material with the urine. For the urine to be kept free from sugar the sugar must be kept out of the blood."

employed would seem to convey that in mild cases the sugar is derived from the food, in severe cases from the tissues. It is obvious that in both cases the sugar in the urine is derived immediately from the blood, which is the only source of the renal secretion. In cases of the milder type the carbohydrates only are thus perverted; with the more severe cases the nitrogenous part of the blood is destroyed and excreted. The blood is mainly supplied by the food, probably only to a comparatively small extent by the disintegration of the tissues, and we must suppose that diabetic sugar is chiefly derived from the food, though it is not possible to deny that the waste of the living structures may contribute towards it. It is obvious that no restriction of diet can stop the excretion of sugar so far as this is derived from the albumin, but if only from the carbohydrates it may be put a stop to by their withdrawal. Whether the disease be slight or severe it equally concerns the carbohydrates, notably the sugar and starch; if severe it seizes the nitrogenous constituents of the blood plus the carbohydrates.

It has been supposed that certain toxic matters which are found in the urine in severe diabetes, such as acetone, diacetic acid, oxybutyric acid, and are in some sort a measure of its severity and peril, are derived not so much from the food as from the tissues of the body. At any rate they appear to be to a certain extent controlled by diet, though in severe cases the strictest exclusion of the carbohydrates though it may diminish will not exclude them. In such cases it is clear that these toxic products are derived, as in the sugar, from the disintegration of the nitrogenous products, whether of the food or the frame, probably chiefly of the food.

By diet we can always lessen the diabetic perversion even where we do not abolish it. Diet, putting aside exceptional circumstances, always does good, though not always all the good that is required. It is not necessary that I should inform this audience that the avoidance of sugar and starch is the guiding principle of diabetic diet, nor do I propose to weary you with a list, for such may be found in any text-book relating to the subject, of what the patient should eat, drink, and avoid. The sufferer from diabetes has a large liberty in the way of food. It is true that bread and water would not suit him, but so long as he keeps out of jail and avoids fasting, whether entailed by piety or poverty, he may do well. He may dine with a city company and so long as he does not take bread or potatoes feast like an alderman. The substitutes for ordinary bread present the chief difficulty. Gluten bread is theoretically correct, but some patients cannot get it down; they say it is like chewing india-rubber. But the gluten flour need not be made into bread, and it is often less objected to in other shapes which can be given to it in the domestic kitchen, cakes, buns, and puddings. Bran biscuits often do well and are useful, as they tend to obviate the constipation which is one of the troubles of the disease. Green vegetables—spinach, French beans, and the like—are fully recognised as fit for the diabetic; but I may mention some vegetable products which are not green and yet are of especial use in diabetes: I refer to vegetables containing much cellulose. It is true that cellulose is a carbohydrate, but it does not appear to be easily converted into sugar, and indeed it is doubtful whether in the human body it undergoes any such conversion. One of the troubles of diabetes is constipation; cellulose largely passes off in the fæces and tends to obviate this condition. The more bulky varieties of garden stuff, whether roots or fruits, may be made use of, such as cucumbers, vegetable marrows, tomatoes, and radishes. Apples, if not obviously sweet, may be permitted in small quantity. These articles of diet are not all absolutely free from sugar, but none contain much sugar, and certainly they are often useful, though perhaps not absolutely correct in theory. Anything is better than nothing, and if the diabetic cannot take what he should he had better take what he can.

It is of importance, even of vital importance, not to overdo the restrictions or to be too sudden in their introduction. In mild cases, where a minor degree of deprivation will suffice to remove the sugar from the urine, do not push it further. Milk, which as containing sugar of milk is theoretically inadmissible, is often normally assimilated when cane sugar is not. If milk is found not to increase the sugar in the urine it should be freely given. As to water, let the patient drink as much as his thirst demands. If there be any threatening of diabetic toxæmia, the more he drinks the better, to wash out the cause of offence. That the liberal introduction of water into the blood exerts a purifying action upon it and relieves it, if only for a time, of some of the toxic products of the disease, is evident from the marvellous though temporary emergence from diabetic coma which has been known to follow aqueous injections into the veins. Probably the water acts by increasing the excretions and assisting the exit of the diabetic poison.[3]

With diet as the fundamental part of the treatment of diabetes we may next come to the accessories. Of these opium and its constituents demand the first consideration. That opium, morphia, and codeia lessen the excretion of sugar is certain, a result which is consistent with the hypothetical origin of the disease in nervous irritation. The use of opium in diabetes was introduced, so far as I know, by Pelham Warren, physician to St. George's Hospital and to King George the Fourth. The paper may be found in the Medical Transactions of the College of Physicians for 1812. Dr. Pavy[4] refers to a Dr. McGregor as having placed on record in 1837 two cases of diabetes treated with opium as if the practice had been invented by him or were then a novelty, but I do not observe that Dr. McGregor makes any such claim himself though he does not mention Pelham Warren by whom he was anticipated in this use of opium by exactly a quarter of a century. Not that opium had never before been given in diabetes, though I suppose never before Warren's time was it credited with any special action in this disorder. Aretæus recommends the Theriaca of Mithridates,[5] of which one of the ingredients was opium, as of use in diabetes; but as this celebrated medicine contained 72 drugs it is difficult to know to which to attribute any good which it did, if, indeed it did any. As a modern and working practice I presume that the use of opium in diabetes belongs to Pelham Warren, though whether he has done more good or harm in this respect is an open question. That opium controls glycosuria is certain; that in severe diabetes a remarkable tolerance of opium is often manifest is apparent; but that opium cures diabetes or can be in general beneficially used in its treatment is a question. Opium disturbs the normal functions and often upsets the general health. Diabetes is attended with constipation which opium makes worse; one of the chief dangers of the disease is the special and fatal form of coma which the careless use of opium appears to invite. Of late years I have practically given up opium and codeia in the treatment of diabetes, and my impression is that my patients have lived longer without them than they would have done with them. If it be determined to make trial of one of these drugs I would, at any rate, urge its association with something that will antagonise its constipating effect: a few grains of compound rhubarb pill or a minute quantity of extract of colocynth or of podophyllin with each dose of the opiate and an occasional clearance with a mercurial.

Are we to do nothing, then, for diabetes save in the way of diet? Not quite this, though diet is of all things the most important and neglect is better than over-medication. I have no doubt that good is often done by the nerve tonics, especially strychnia, in favour of which I have nearly abandoned all other remedies of this class. Liquor strychniæ can be associated with tartrate of potash without fear of precipitation, though not with the alkaline carbonates. I have been in the habit, perhaps on insufficient reason, but with some aim at the nervous system and as I have thought with good result, of adding a few grains of phosphate of potash which, though it may serve no other purpose is a laxative. Diabetes is sometimes associated with gout and with excess of uric acid. Alkalies are of use in such cases. I must revert for a moment to another remedy which is called for both in gout and in diabetes, and that is water, soft water for choice—the universal solvent and eliminant, an eliminant that may postpone the coma which it cannot cure. The benefits of water-drinking and of alkaline or saline medication are combined in some of the baths to which diabetics resort, notably Carlsbad, the water of which contains chiefly sulphate of soda. No doubt Carlsbad water sometimes does good, and the air, the exercise, and the diversion may do good too. But before we send people to a foreign country let us make sure that they cannot get what they want at home. Travel and change are often in themselves remedial; but travel, if sometimes a

[3] See Cases of Diabetic Coma treated by the Intravenous Injection of Saline Liquid. W. H. Dickinson: Transactions of the Clinical Society, vol. xxiii.

[4] Pavy on Diabetes, second edition, p. 273.

[5] Paris's Pharmacologia, ninth edition, p. 78.

remedy, is sometimes an aggravation, and change is good when not for the worse; but the ills we know not of may be unwisely preferred to those we have.

Mineral waters contain many ingredients, some possibly good for the disease it is desired to benefit, some, perhaps, the reverse; let us find out what is required and give it without admixture or contamination. The chief remedy conveyed by every spring is the *water*, using the term in its chemical sense; we have plenty of water at home and that of the best. With regard to mineral springs, these are mere geological accidents; there was no thought of us, of the action of our livers or of the state of our urine, when the cracks in the earth's crust began to discharge their rinsings. Here is a spring, let us say, which tastes of brimstone and comes up hot, suggesting a greater proximity to the infernal regions than would generally be thought a recommendation. No beast will touch it. Man is more adventurous or more confiding. No sooner does he become aware that a certain spring yields water of exceptional impurity than the happy thought occurs to him, "Let us drink some." A course of mineral water is spoken of as a "cure," though possibly the patient may find his disease made worse thereby. Many a calculus, instead of being dissolved or expelled as the credulous proprietor was led to expect, has become the seat of fresh deposit and diversified stratification. A person with an incurable malady will go about from one "cure" to another enjoying, if nothing else, the pleasures of hope. Among the constituents of Carlsbad water are, according to Pereira, soda, lime, magnesia, alumina, manganese, iron, and silica in combination with sulphuric, hydrochloric, phosphoric, and fluoric acids. The time will come when we shall know which of these does good in diabetes and give it, or them, in a pure solution instead of the chance medley of a mineral spring. All we should ask of our location would be pure water in which to dissolve the essential salts. We should not be tied to a gushing fissure but might seat ourselves wherever air, scenery, and season indicated. And those who preferred to stay at home would find at home the salutary drink though not the salutary surroundings. But this is looking too far ahead; perhaps by the millennium we may have developed some such system of pure science and become able to deal with abstract properties, but at present we have to take things mixed and to do our best with barbaric methods. In Utopia, where the air and the water are the purest known, are places of easy resort where cunning chemists prepare the exact solutions suited to every ailment which is to be benefited by water. A series of taps dispense to every ailment its appropriate remedy. The gouty, the rheumatic, the rheumatoid, and the diabetic are each supplied with the precise drink which will do for him all that a drink can do. The glutton and the sot drink out of neighbouring channels and both are made ready for fresh excesses; while he who has taken too much out of himself finds his balance duly adjusted as well as he who has put too much in. Inspiriting adjuncts are provided, not omitting the "fiddlers three."

I have taken a retrospective view of our knowledge concerning a very common and very obscure disease, having regard to what we think we know and humbly confessing that what we do not know is assuredly the more important part. If such a sketch as I have attempted comes to the notice of the Baillie Lecturer of 1900 years hence it may appear to him to be inadequate and erroneous, perhaps even to a ludicrous extent. It is probable that minute morbid anatomy will by that time have been carried far beyond anything within the reach of our rude methods and our imperfect instruments and that modes of action within the body which now admit of doubt and dispute may then be so clear as to afford no scope for either. The wise man of the future whose topic is diabetes will know what importance to attach to such evidences of disturbed circulation as have been found in the nervous centres and may possibly be aware of other changes in them as yet unknown. He will know something of the way in which mental impressions fill the blood and the urine with sugar and why a lesser degree of the same contamination is a concomitant, though an infrequent one, of lunacy. The extravagant excretion of phosphate of lime in diabetes will be fully understood and the loss of the patella reflex will present no doubts as to the nature and the cause of the nervous lesion which it indicates. As to the treatment in the future it is unsafe to speculate, but we may with some confidence predict that it is more likely to rest upon improved physiology than upon the empirical use of drugs. As to mineral waters, I suspect that they will be resorted to in the future as in the past and that the chance mixture which nature provides will long be preferred to anything which the most accomplished physician, aided by the most accurate chemist, can design.

Three Lectures

ON

THE SURGERY OF PREGNANCY AND LABOUR COMPLICATED WITH TUMOURS.

Delivered at the Medical Graduates' College and Polyclinic on Jan. 11th, 18th, and 25th, 1901,

BY J. BLAND-SUTTON, F.R.C.S. ENG.,

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LECTURE I.

Delivered on Jan. 11th.

PREGNANCY AND LABOUR COMPLICATED WITH OVARIAN TUMOURS.

GENTLEMEN,—Anything which jeopardises the life of a woman when she is advanced in pregnancy, but more especially when she is enduring the "pain of childbirth," always excites our deepest interest and sympathy quite apart from the fact that two lives are involved. This being so I shall begin this lecture by briefly stating the details of two cases which will well illustrate the grave dangers which beset the life of a mother and of the child when, after being some hours in unavailing travail, it is discovered that her pelvis is occupied by a tumour.

CASE 1.—On Oct. 3rd, 1900, a woman, aged 28 years, had been in labour with her first child for about 20 hours. She was then seen by Dr. A. B. Calder who found delivery obstructed by a large, tense, semi-fluid mass occupying the outlet of the pelvis. He at once recognised the gravity of the case and had the patient conveyed to the Chelsea Hospital for Women in a cab. I happened to be at the hospital when she arrived and quickly satisfied myself that the hollow of the sacrum was filled with a large, tense, cystic mass which completely occupied the true pelvis. We at once arranged for speedy relief The abdomen was carefully washed and made as antiseptic as possible in the circumstances and the patient was etherised; the uterus was exposed by a free incision in the linea alba and an attempt was made to extract the tumour. The head of the fœtus was so thoroughly impacted in the pelvis that I could not even insinuate a finger between the uterus and the pelvic brim; under these conditions I incised the uterus and extracted the fœtus with its placenta and membranes; this enabled me to reach the cyst and to withdraw it from the pelvis. As is always the case in such circumstances, it had a long and slender pedicle which I ligatured with thin silk in the usual manner. The incision in the uterus was closed with two layers of silk sutures, one set including the mucous and part of the muscular wall, the second including the serous layer and subjacent portion of the muscular wall of the uterus. The incision in the linea alba I closed in three layers. The vagina was thoroughly irrigated and the patient, who had lost very little blood, returned to bed in excellent condition. The infant, a vigorous boy, "wauled and cried" as usual on his advent into the atmosphere, and on the second day he took the breast in the ordinary way and throve as usual. The mother convalesced with as little difficulty as after normal labour. I considered it desirable to keep her resting in bed for three weeks to allow the uterine, as well as the abdominal, incision to heal soundly. The tumour was a dermoid with a single cavity filled with the usual pultaceous matter mixed with shed hair and containing one piece of bone. It was somewhat ovoid in shape, its axes measuring ten centimetres by eight centimetres. The consistence of the contents of the dermoid was about

equal to that of soft soap, so that under the pressure of the strong uterine contractions it had become very accurately moulded to the cavity of the true pelvis.

CASE 2.—On July 29th, 1896, a friend of mine, a practitioner with extensive experience in midwifery, asked my advice in regard to a woman, aged 33 years, the mother of two children, in travail with her third child, but delivery was obstructed by a pelvic tumour. I advised him to send the patient into the hospital without delay so that ovariotomy could be carried out. Instead of this he obtained the assistance of another practitioner and they succeeded in pushing up the tumour and extracting the child with forceps. On August 2nd—that is, the third morning after delivery—the patient had severe pain in the abdomen, accompanied by vomiting, an accelerated pulse, and high temperature. This naturally caused alarm; my friend came to me and described the treatment that had been adopted and which I have just described. The patient was admitted into the hospital in an extremely critical condition; the abdomen was greatly distended and tender, the pulse rate was 150 to the minute, the temperature was 100° F., and the patient looked extremely ill and vomited frequently. I gently examined the abdomen but could not distinguish a tumour and I came to the conclusion that it had in all probability been burst when it was pushed out of the pelvis. This conjecture, however, proved to the erroneous. The patient's condition, though clearly desperate, was not entirely hopeless, and it seemed cowardly to abandon the poor woman to her fate, so I performed cœliotomy. On incising the abdominal wall a large quantity of muco-purulent fluid escaped and the intestines were villous with patches of inflammatory lymph. An ovarian tumour of the dimensions of a fœtal head was detected and removed; its pedicle was twisted through one complete revolution. No signs of injury were observable on the uterus or in the pelvis. The exudation was carefully removed and the wound was secured in the usual way. The operation failed to improve matters and the patient died 18 hours later. A very thorough post-mortem examination failed to throw any light on the cause of the peritonitis. The tumour was a semi-solid ovarian adenoma.[1]

These two cases deserve careful consideration, for whilst the issue in each instance is in striking contrast the method which I adopted in the successful case is by many regarded as distinctly unorthodox, inasmuch as it is contrary to authority and tradition, whilst the ancient method adopted in Case 2, which resulted in the death of the child and subsequently involved the life of the mother, has the sanction of some practitioners who make midwifery the principal work of their lives.

The subject is specially interesting to me because when preparing the second edition of my book on "Surgical Diseases of the Ovaries and Fallopian Tubes" I accumulated a quantity of records from a variety of sources and analysed them in regard to this particular point, and although I was able to work out certain principles for my own guidance it is quite clear from a study of some of the "remarks" made on the subject that the Fellows of the Obstetrical Society of London are very uncertain which is the best way of dealing with this serious difficulty.

Let me first show you how uncontrolled nature acts in such an emergency as is set forth in these two cases—that is, when an ovarian tumour occupies the pelvis and offers mechanical impediment to delivery. In such circumstances the fœtus almost invariably dies and the following accidents may happen: (1) rupture of the cyst; (2) rupture of the uterus; (3) rupture of the vagina; and (4) extrusion of the tumour into the rectum. This is a formidable list of dangers and, extraordinary to relate, with the exception of rupture of the uterus women have recovered even under such awful conditions. It will serve my purpose very well briefly to refer to some of the more important of them, as it will enable me to indicate in precise terms the disadvantages of some of the methods of treatment which are still advocated.

Rupture of the uterus.—This, I believe, is a somewhat exceptional accident under these conditions, but the best known case was recorded by Ogier Ward[2] in which a cyst of the right ovary as large as a cocoanut prevented the head of the fœtus from entering the true pelvis. The uterus ruptured and the woman died.

Rupture of the vagina.—This is an unusual accident when it occurs as a result of the efforts of the uterus alone. One of the best-known examples is that recorded by Kerswill. A woman in labour was found to have an obstruction in the pelvis. In the course of the delivery an ovarian cyst of the size of a cocoanut was detached and forced through a rent in the vagina. Five centimetres of the pedicle remained on the tumour. The patient recovered.[3]

Extrusion of the tumour into the rectum.—One case has been observed and recorded in which an ovarian dermoid obstructing labour has been pressed into the rectum and the wall of the bowel has become invaginated and the tumour, invested by the bowel, has been extruded through the anus. In these circumstances the practitioner has incised the mucous membrane and seized the tumour and detached it after ligaturing the pedicle. The patient recovered.[4]

Rupture of the cyst.—This is, I believe, the common way in which nature overcomes the difficulty, and if the cyst be thin-walled and the fluid sterile so far as micro-organisms are concerned the results are not necessarily harmful, but when the tumour has thick walls and contains dermoid material the effects are often very grave.

Brewer recorded a case in which an ovarian cyst obstructed delivery. The cyst burst and its contents escaped through a rent in the vagina; the woman recovered.[5] This observation is of some interest because some accoucheurs recommend in cases where a cyst obstructs the transit of the child that it should be emptied through a vaginal puncture (Herman). It is certain that some patients have survived this unsurgical procedure and that some have died after it. On one occasion a practitioner not only punctured the cyst but stitched the edges of the puncture to the vaginal wall.[6] Attempts to clear an obstruction of this kind by the vaginal route could easily be pushed a step further if the practitioner had a little operative experience and the whole cyst could be removed through an incision in the vagina, a procedure recommended by Dakin.

As delivery by nature's own efforts when a firm ovarian cyst or solid tumour blocks the pelvic outlet can scarcely be described as successful it will be useful to consider the various expedients adopted by accoucheurs to meet these difficulties and the results which have accrued therefrom.

A remarkable case is that reported by Berry. A woman taken in labour with her tenth child was found to have her pelvis obstructed by a tumour. The child was delivered by forceps. The same evening the patient felt something escape from the vagina during a fit of coughing. This Dr. Berry recognised as an ovarian cyst extruded through a rent in the vagina. He ligatured the pedicle and removed the tumour. The woman recovered. This cyst is preserved in the museum of St. Bartholomew's Hospital.[7]

In 1898 a ruptured ovarian dermoid was exhibited at the Obstetrical Society of London which had obstructed labour in a woman, 27 years of age, the mother of one child four years old. Attempts made to deliver with forceps failed; the dead child was then extracted by turning. Next day signs of peritonitis appeared and the patient died on the third day. At the post-mortem examination the burst dermoid was found.[8]

In a case full of interest recorded by Griffith delivery was obstructed by a large solid tumour of the ovary. He performed craniotomy, but then the fœtus could not come through; he then turned the child and even in this way its transit was difficult. The mother died.[9] This is a rare complication and it gave rise to an erroneous diagnosis. Griffith regarded the mass to be an extra-uterine fœtus. The pelvis, in section, is preserved in the museum of the Royal College of Surgeons of England and is represented in Fig. 1.

When a small dermoid obstructs delivery it may be possible to effect delivery by turning, but I think the subjoined case is not a recommendation for this manœuvre.

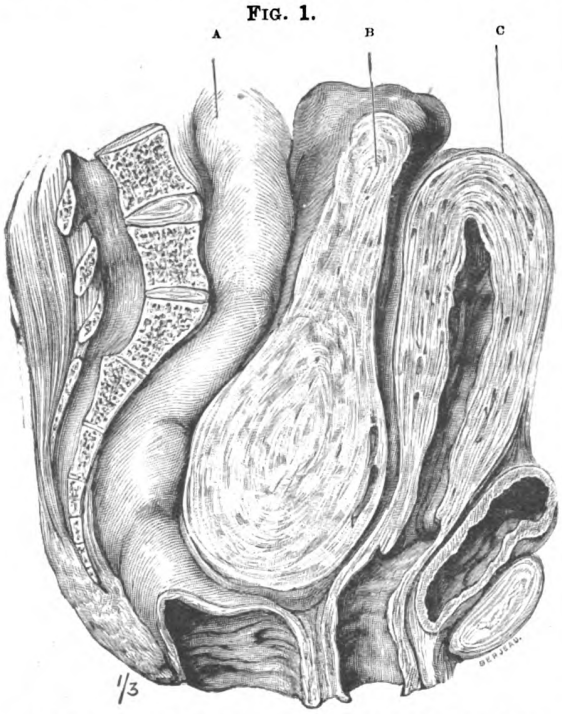
CASE 3.—A young married woman under my care in 1892 made the statement that she had been twice delivered of stillborn children after exceedingly difficult labours. The fœtuses in each case were extracted by turning and her life was despaired of after each confinement. On the second occasion the practitioner detected a tumour in the pelvis. I removed this in the Middlesex Hospital; it was an ovarian

[1] Middlesex Hospital Reports, 1896.
[2] Transactions of the Pathological Society of London, 1853, vol. v., p. 219.
[3] Brit. Med. Jour., 1880, vol. ii., p. 83.
[4] Alexsenko.
[5] Transactions of the Obstetrical Society of London, vol. xx., p. 184.
[6] Fritsch.
[7] Transactions of the Obstetrical Society of London, vol. vii., p. 263.
[8] Ibid., vol. xl., p. 331.
[9] Ibid., vol. xxxiii., p. 140.

dermoid with an average diameter of five centimetres firmly fixed to the pelvic floor by dense adhesions. The patient recovered and re-conceived and had a living child two years after the operation.[10]

The methods of dealing with labour when obstructed by a pelvic tumour which we have just considered may for

FIG. 1.



Saggital section of a pelvis in which delivery was obstructed by a solid tumour of the ovary. (Museum of the Royal College of Surgeons of England.) A, Rectum. B, Tumour of ovary. C, Uterus.

convenience of reference be described as craniotomy, forceps, and version, and they have only been mentioned and illustrated by typical cases in order that they may be thoroughly condemned.

To-day the choice of treatment really lies between two methods. 1. In the early stage to push the tumour out of the pelvis and allow labour to be completed and then at some convenient season to perform ovariotomy. This is often referred to as "reposition." 2. To perform ovariotomy at once and then to accelerate the labour by the use of forceps. If the tumour cannot be extracted then perform Cæsarean section. This method may be conveniently referred to as ovariotomy which may occasionally require Cæsarean section. The two cases which I detailed in opening this lecture illustrated very well some of the chief points of the two rival methods, but it is necessary to enter somewhat into detail concerning re-position because it is advocated by some obstetricians whose experience entitles their opinions to careful consideration. They advocate reposition whenever it is practicable on the ground that it allows labour to be completed, and although the necessity for ovariotomy is not avoided, nevertheless it does allow such an operation to be carried out in a more convenient manner and under conditions which not only safeguard it from sepsis but permit it to be performed by an individual skilled in this class of work.

To these views it may be urged that the surroundings of a woman in labour ought to be such that she runs no risk from sepsis. At the present time no surgeon would think of performing even a trivial operation without antiseptic precautions of some formula or other, and exactly the same precautions should be made for nature's interesting and important operation of childbirth. Further, in all large towns experienced operators are available and, in the case of the poor, well-equipped hospitals are always ready to receive urgent cases of this kind, as well as accidents, into the wards; and it is undeniable that an ovariotomy performed by an operator skilled in pelvic surgery is attended with far less risk to life and health than a normal labour in septic surroundings.

There are two very grave dangers which attend reposition—namely, rupture of the cyst and acute twisting of the pedicle; each of these are conditions which when they occur in non-pregnant women are held as justification for immediate ovariotomy. It is easy to collect half a score of cases in which reposition has been successful, but the unsuccessful cases are not recorded and thus we are deprived of any means of comparison. Be this as it may, I am quite certain from the remarks made at the Obstetrical Society of London in 1897, on the occasion when Dr. R. G. McKerron's painstaking paper on "The Obstruction of Labour by Ovarian Tumours in the Pelvis" was read, that the majority of practitioners will, when face to face with a difficulty of this character, make a determined effort to push the tumour out of the pelvis. This is, however, decidedly in opposition to all the canons of surgery, as I will now endeavour to show. It may perhaps be useful to indicate the position in a decided way and to state that *pregnancy exerts a baneful influence on ovarian tumours; and ovarian tumours are, as a rule, inimical to successful pregnancy.*

As a matter of fact tumours of the uterus as well as those arising in the ovaries are very liable to induce abortion and it is difficult to state which are the more pernicious in this respect, but I will take the opportunity of relating the details of a case which will well illustrate the malign influence of even a small ovarian tumour in pregnancy.

CASE 4.—A woman, 26 years of age, was placed under my care in the Middlesex Hospital in 1900 on account of a small ovarian tumour. The patient had been married 18 months, and in this short time had miscarried on three occasions and was pregnant for the fourth time. After the third abortion a small moveable tumour was detected at the back of the uterus, and when her medical attendant realised that she had again become gravid he urged her to submit to operation. I performed ovariotomy and removed the right ovary which was converted into a cyst as big as a fist, and the pregnancy, which had then advanced to the end of the second month, was not disturbed, and she is now daily expecting her travail.

In studying the literature of ovarian tumours complicating pregnancy, and especially tumours incarcerated by the gravid uterus, one of the most prominent facts is the frequency with which the tumours are dermoids; in many instances also the dermoids are bilateral, and this is a fact to bear in mind. For example, Berry Hart performed ovariotomy on a woman in the beginning of the fifth month of pregnancy and removed a dermoid of the left ovary "enlarged to about the size of a man's brain by recent hæmorrhage resulting from a twisted pedicle. The patient made good progress for a week, but on the ninth day died of cardiac failure." A frozen section was made of the pelvis, and on inspecting the cut surface the right ovary was seen to be incarcerated in the recess of the sacrum (Fig. 2). Bilateral ovarian dermoids co-existing with, or detected soon after, delivery have been observed and recorded by Knowsley Thornton, Bantock, F. Page, Cullingworth, and others, including myself, which have demonstrated that a woman may have one or both ovaries transformed into dermoids and yet they are capable of yielding fertilisable ova.

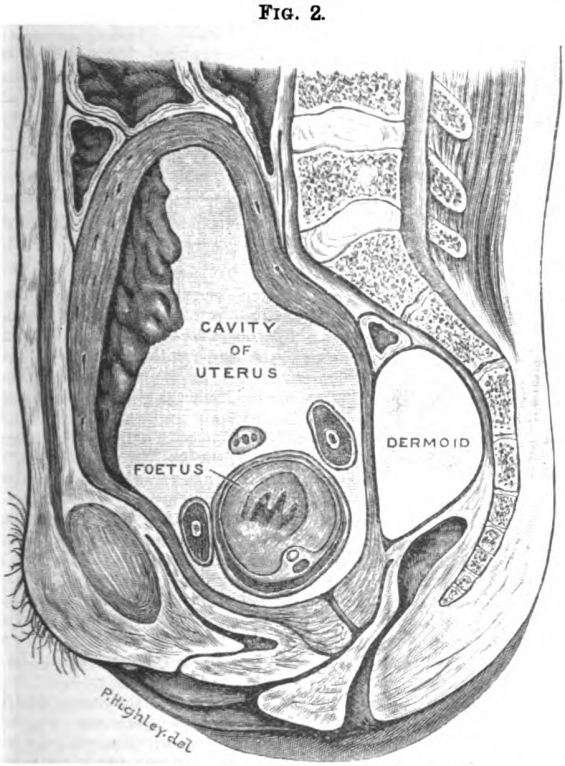
It may not be amiss if I briefly draw your attention to the steps by which the surgical treatment of ovarian tumours complicating pregnancy has been evolved. Although ovariotomy during pregnancy had been successfully performed in 1847 by Burd of Shrewsbury, by W. L. Atlee in 1850, and by Marion Sims, the procedure did not meet with favour until Spencer Wells forced it on the professon in 1877. This surgeon had pointed out its justifiability in 1870; but seven years later he strengthened his argument by reporting nine cases of ovariotomy during pregnancy with one death. The discussion which followed the reading of his paper at the Obstetrical Society of London is well worth perusal as indicating the opinions regarding this grave complication and its treatment held by the leading obstetricians of that period. A very large number of cases have since been recorded which show that it is now the recognised method of treatment in the early stages of pregnancy.

It would be suspected that the risks of ovariotomy during pregnancy would be those of an ordinary ovariotomy *plus*

[10] Medical Press and Circular, 1892, vol. ii., p. 94.

the chance of abortion with its ordinary dangers, but an analysis of a large number of cases demonstrates that when ovariotomy is performed before the fourth month of pregnancy the chances of abortion are very small, whereas the average mortality is less than in ovariotomy performed on non-gravid women. The risks of even double ovariotomy during pregnancy when the operation is undertaken before the fourth month are very small and the chances of disturbing the pregnancy are few. A critical study of a large number of records led me to formulate the results in this

FIG. 2.



Frozen sagittal section of a pelvis at the beginning of the fifth month of pregnancy. A dermoid of the right ovary is incarcerated in the hollow of the sacrum by the gravid uterus. (From Clarence Webster's Researches on the Anatomy of the Female Pelvis.)

way: Before the fourth month of pregnancy single and double ovariotomy is attended with an exceedingly low rate of mortality, and the risk of disturbing the pregnancy is small. The removal of a parovarian cyst during pregnancy is more liable to disturb the uterus than simple or double ovariotomy. After the fourth month the risk is that of an ordinary ovariotomy, but the chance of abortion increases with each month.

Now that we realise the importance of removing ovarian tumours whenever they are detected quite a large number of records have been published in which ovariotomy has been successfully performed in the later stages of pregnancy, and in three instances it has been carried out successfully at the end of the ninth month of pregnancy by Pippingsköld,[11] by myself,[12] and by Morse.[13] In Morse's, as in my patient, the tumour was a dermoid incarcerated in the pelvis by the pregnant uterus. In my case the tumour was detected during the birth of the patient's child, which was stillborn in consequence of the obstruction which it offered to delivery, and no active steps were taken to have the tumour removed until the woman was again well advanced in pregnancy (seven and a half months). This being the condition I thought it judicious to keep her under observation in the hospital until near term, so that in the event of the operation precipitating labour the child would be thoroughly viable. Five years after the operation the mother and child presented themselves in excellent health.

It has now been clearly demonstrated that ovariotomy has been performed with very marked success in each of the nine months of pregnancy and it has now in a fair number of instances been carried out whilst the patient was in labour. In this extreme condition the necessity for ovariotomy may be formulated thus: When an ovarian tumour is discovered during labour and it impedes delivery ovariotomy should be performed. If the tumour offer no obstacle to the passage of the fœtus it should not be interfered with until after the puerperium unless unfavourable symptoms arise.

It may be urged in reply to the above aphorism that it is not always easy to carry out the operation, and in the case with which this lecture opens it was impossible to extract the tumour from the pelvis until after the uterus had been emptied by Cæsarean section. This difficulty also occurred to Dr. Boxall; it is clearly one which will present itself from time to time. I have thought it desirable to add a list of recorded cases in which ovariotomy has been performed upon women actually in labour. The cases have been drawn from purely British sources. For this I hope not to be accused of what is sometimes facetiously called "insularity." I am convinced that the enormous population of this island should furnish material enough to settle the principles of treatment which should govern these terrible cases of obstructed labour.

Ovariotomy for Tumours obstructing Labour at Term.

Operator.	Nature of tumour.	Result.	Reference.
Williams (Sir John)...	Cyst.	Recovery.	Transactions of the Obstetrical Society of London, vol. xxvi., p. 203.
Spencer	Dermoid.	Recovery.	Ibid., vol. xl., p. 14.
Boxall *	Dermoid.	Recovery.	Ibid., vol. xl., p. 25.
Bland-Sutton *... ...	Dermoid.	Recovery.	This lecture, Case 1.

* In these cases Cæsarean section was necessary in order to extract the cyst from the pelvis.

It is not stating the case too positively to assert that "when an ovarian tumour complicates pregnancy the life of the woman is imperilled throughout the whole of the term; the peril increases with each succeeding month of gestation and culminates in a climax with labour (or abortion)." During delivery, however, mischief may be produced which is only appreciable during the puerperium.

Throughout this lecture we have almost exclusively considered those cases where an ovarian tumour is incarcerated in the pelvis and obstructs (as a rule completely) the transit of the child. We have now to deal with a much more insidious, and a far more fatal, complication—namely, where an ovarian tumour complicates labour and delivery is completed without in some cases its presence being even suspected. The two great dangers at this period are (1) rupture of the cyst and (2) axial rotation.

It is natural to infer that when an ovarian cyst with thin walls be subjected to pressure from a uterus during labour it would burst, and it by no means follows that the accident is necessarily lethal, for cases have been accurately observed in which the cyst has burst and the fluid absorbed by the peritoneum has been excreted by the kidneys. All operators of experience in abdominal surgery have found collapsed ovarian cysts in the abdomen and the intestines inundated with the viscid colloid stuff, and after removal of the tumour the patients have recovered. It is also true that even the distribution of the greasy material characteristic of dermoids among the pelvic viscera and adjacent sections of the intestine is not always attended with fatal consequences; an ovarian cyst may be ruptured during delivery and may cause such disturbance that the patient's life is jeopardised, or in many instances destroyed. In other cases the collapsed cyst may slowly refill and may require to be removed many months afterwards.

When pregnancy and labour are complicated with ovarian tumours the latter are very liable to undergo axial rotation and to twist their pedicles. It is quite true that almost every viscus in the abdomen is liable to axial rotation, yet all writers on the subject agree that this accident most commonly arises with ovarian tumours associated with a

[11] American Journal of Obstetrics, vol. xiii., p. 308.
[12] Brit. Med. Jour., 1895, vol. i., p. 461.
[13] Transactions of the Obstetrical Society of London, vol. xxxviii., p. 221.

pregnant uterus. I have studied the question very closely and carefully. The torsion may occur early in the pregnancy or it may be delayed till delivery. The occurrence of acute torsion at the time of delivery (or abortion) is due to the rapid diminution of the uterus and the movement which this organ as it sinks into the pelvis imparts to the tumour. A case of very great interest in relation to this question was reported by Dr. St. John Edwards in THE LANCET of 1861.[14] A woman, 24 years of age, had for at least two years previously an ovarian tumour on the right side which did not attract much attention until she became pregnant in 1860. In October of that year she was delivered of a child who only survived a few days. Immediately after the birth of the child the tumour shifted over to the middle of the abdomen. On August 5th, 1861, this woman was delivered of another child at the seventh month; the infant lived a few hours. After the child was born the tumour was found in the middle line of the abdomen. The patient died three days later. At the post-mortem examination the pedicle of the cyst was found twisted one and a half turns; it contained four litres of blood-stained fluid. The ovary was on the surface of the cyst, which was therefore parovarian in origin. I have often referred to this case, for it illustrates very well the fact that the majority of ovarian cysts, when they rotate axially, turn to the middle line and instead of occupying a lateral position lie in the hypogastrium. I have on nine occasions performed ovariotomy when the tumour has been noticed a few days after labour. The patients state that they notice that the abdomen does not return to its proper size and in some instances that it seems to enlarge again. This enlargement in some of the cases was due to bleeding into the cyst. A marked feature in all the cases, and one which led to some doubt in the diagnosis, was the way in which the tumour occupied the middle line of the abdomen and simulated an enlarged uterus and in all the cases axial rotation had occurred. In some of them the skin of the abdomen exhibited the peculiar yellow pigmentation so often associated with pregnancy, but which very rapidly disappeared after the removal of the tumour. The axial rotation of an ovarian cyst not only menaces the life of the patient immediately on its occurrence, but the longer it is allowed to persist it increases the difficulty, and therefore the risk, of ovariotomy by establishing extensive adhesions between the tumour and the adjacent viscera, especially the intestines.

Another danger which threatens a puerperal woman when she has an ovarian cyst is the liability of the cyst to suppurate. A critical study of a large collection of histories of patients who have had their "labour" complicated with ovarian cysts shows that in the majority of instances the cysts have twisted pedicles and that in a fair proportion of cases suppuration has occurred in the cyst. In many of the cases a ruptured cyst has been found.

It is now a well-attested fact that ovariotomy can be successfully performed even while labour is in progress—that the operation in no way interferes with the contraction of the uterus. Single and even double ovariotomy can be successfully performed in the puerperium without in any way interfering with either the involution of the uterus or lactation. Therefore, it cannot be too strongly urged that *when a puerperal woman known to possess an ovarian tumour exhibits unfavourable symptoms ovariotomy should be resorted to without delay.*

[14] THE LANCET, Oct. 5th, 1861, p. 336.

MORETONHAMPSTEAD HOSPITAL.—The hospital which the Hon. W. F. D. Smith, M.P., has endowed with £2000 and presented to Moretonhampstead, Devonshire, as a memorial to his late father, was opened on Jan. 26th. Owing to the death of the Queen the formal opening by Lady Esther Smith was abandoned.

NEWTON ABBOT BUILDING BY-LAWS.—At Newton Abbot (Devon), on Jan. 29th, a builder was charged with two breaches of the building by-laws of the Newton Abbot Rural Council—viz., that he varied the plans of cottages after they had been approved by the council and that he permitted the houses to be occupied without obtaining the usual "occupation certificate." The magistrates fined him £1 and costs in each case and also a penalty of 1*s.* a day until the by-laws are complied with.

A PLEA FOR THE MORE CAREFUL STUDY OF THE SYMPTOMS OF PERFORATION IN TYPHOID FEVER WITH A VIEW TO EARLY OPERATION.

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THIS plea is addressed to the resident physicians and the house physicians of the general fever hospitals, and to those practitioners who see a large number of cases of enteric fever. From 7 to 14 per cent. of typhoid fever patients die. During the first 10 years of my service at the Johns Hopkins Hospital there were 63 deaths among 829 patients—7·5 per cent., the minimum rate reached in general hospitals. Of the deaths in typhoid fever 50 per cent. are by asthenia—a result of the fever, or of the poison, or of both; 25 per cent. from perforation; from hæmorrhages and other accidents, 25 per cent. Modern methods—hydrotherapy and good nursing—have reduced the death-rate in the asthenic class. The perforation group, as shown by the statistics of the Brisbane General Hospital (Hare), of the Johns Hopkins Hospital, and of other institutions, remains much the same as given in the large statistics of Murchison and of Fitz. Whether with early removal of the patients to hospital there may be a still further reduction in the mortality of the asthenic or toxic group, we cannot say; but we can speak positively of a reduction in the death-rate in what has been the most hopeless of all the complications of the disease—perforation. I shall not take up space by any discussion of the conditions under which this accident occurs. I wish to call attention to the fact that *early diagnosis and early operation may save from 30 to 40 per cent. of the cases.* To Jan. 1st, 1900, there have been 11 cases operated on from my wards with five recoveries, 45·4 per cent. It is often a desperate remedy for a desperate condition. There are three groups of cases: first, those with so much infiltration and necrosis that the gut is not in a fit condition for operation, and the state of the patient may contra-indicate any attempt at resection. This was the condition in a recent case. In a second group the operation is successful, but the patient dies in the due course of the disease from the intensity of the fever or in a relapse. In a third group complete recovery takes place.[1] To incessant watchfulness on the part of my senior assistants and to their constant consultation with the surgical members of the staff I attribute the remarkable percentage of recoveries in our cases.

The classical picture of perforation in typhoid fever is in reality not of perforation but of the consecutive peritonitis, and the vital question is whether we cannot recognise the perforation and hand the patient over to the surgeon within 12 hours of the onset before the peritonitis has become widespread. Unfortunately the symptoms are often obscure, and I know of no more anxious and critical task than that which confronts us in some of these cases. What I am particularly anxious to urge is the careful study of the abdominal symptoms in every case of typhoid fever. Specific instructions should be given to the sister in charge of the ward to notify the house physician at once of any complaint of abdominal pain, of hiccough, of vomiting, of sudden rise in pulse or respiration, of unusual sweating, or of signs of collapse. The house physician should bear in mind that perforation is an accident liable to occur in the severe cases, in those with delirium, with diarrhœa, or with hæmorrhage, and in those with abdominal symptoms, so that he should be on the watch, and his daily notes should be made with a view of gauging the progress of the symptoms. The following schedule may help him in drawing up his clinical memoranda.

1. *The pain.*—(*a*) Its onset, whether simply an aggravation of the slight abdominal pain such as is common with constipation or with diarrhœa, or whether it is a sudden, intense pain, which causes the patient to call out, and which, though relieved by stupes and ordinary measures, recurs in paroxysms and grows worse. (*b*) Its locality, whether in

[1] It is interesting to note the increasing percentage of recoveries. In Dr. Finney's elaborate analysis of 112 cases in the literature the death-rate was only 21. (Johns Hopkins Hospital Reports, vol. viii.)

the hypogastric or in the right iliac regions, or in the region of the gall-bladder; whether it is diffuse or localised; whether it radiates towards the pubes or to the penis. It is to be borne in mind that abdominal pain of a severe character in typhoid fever may be associated with an acute pleurisy, with a distended bladder, with a packed rectum, or it may follow an enema, or it may occur with acute cholecystitis.

2. *The state of the abdomen.*—(*a*) Whether flat, scaphoid, or distended, and whether, if distended, it is uniform, or chiefly in the hypogastric region. (*b*) The respiratory movements, whether seen uniformly, and whether below and above the navel. It is to be borne in mind that perforation may be present with a flat or even with a scaphoid abdomen. (*c*) Palpation. Observe the degree of tension of the abdominal wall, the presence of pain on pressure, the locality of the pain, the extent, the degree of pressure necessary to elicit the pain, and whether it is a pain of increasing severity; the presence or absence of muscle rigidity or spasm, noting particularly its presence or absence in the hypogastric region and in the right iliac fossa. (*d*) Percussion. The character of the note in the front of the abdomen and in the flanks. Auscultatory percussion may be helpful when gas is free in the peritoneum. A flat note in the flanks may be present, due to exudate, within 20 hours of the occurrence of the perforation. (*e*) The liver flatness. Note specifically every third hour after the onset of the symptoms the extent in the middle, nipple, and mid-axillary lines. Remember that obliteration may occur in a flat as well as in a distended abdomen. Complete obliteration in the nipple line may be caused by excessive tympany, but rapid obliteration in a flat, or a not much distended, abdomen is a valuable sign. (*f*) Auscultation. Note the presence or absence of the signs of peristalsis. A friction may be early, within 12 hours of the onset. (*g*) Examination of the rectum—whether there is tenderness or any fulness between the rectum and the bladder. (*h*) The stools—the character, frequency, and the presence of blood or sloughs. (*i*) The urine—whether pain on micturition, frequency, &c. The onset of symptoms with pain about the bladder or in the penis is not infrequent when perforation takes place in the coils of the ileum in close contact with the bladder.

3. *General condition of the patient.*—(*a*) Facies—whether there has been a change in expression; the presence of a risus sardonicus, marked or slight; the onset of pallor or of sweating; and the signs of collapse, as in cold hands, cold feet, and slight dusky suffusion of the face. (*b*) The pulse—whether a sudden change in the rate and force; the very rapid, running, thready pulse may not be present for 24 hours after the onset of perforation. (*c*) The temperature—whether a sudden drop or a sudden rise. (*d*) Respiration—a sudden increase, which is not infrequent; whether shallow and sighing; (*e*) Hiccough—sometimes a symptom of onset, more frequently late, when peritonitis is established. (*f*) Vomiting—whether with the onset of the pain; it is more frequently a late feature, associated with the presence of the diffuse peritonitis.

4. *The blood count.*—The constant leukopenia in typhoid fever must be remembered. In a majority of instances in cases well followed there is a rise in the leucocytes, but this is not constant; they may be stationary. Also note the condition of the red blood corpuscles and the hæmoglobin. A decided drop may suggest hæmorrhage.

Sudden pain, increasing in intensity, and recurring in paroxysms, is perhaps the most constant symptom of perforation. With an increase of the pulse rate, distension of the abdomen, increasing pain on pressure, and a rise in the leucocytes, the diagnosis is rendered probable. A surgical colleague should be called early, so as to share the responsibility of the case. In a doubtful case the patient should be given the benefit of the doubt and operation should be urged. It is surprising how well a patient, even in a desperate state, may stand it. A general anæsthetic may not be needed. In many cases cocaine has been used, with the help, sometimes, of a whiff of chloroform. One of our cases recovered after three operations in two weeks, two for perforations and one in which a perforation was suspected.

From a surgical standpoint the whole question is reviewed at length by Keen in his "Surgical Complications of Typhoid Fever" and by Dr. Finney and Dr. Cushing in the recently issued Series III. of "Studies in Typhoid Fever," in Johns Hopkins Hospital Reports, vol. viii.

Medicine has become a medico-chirurgical art, and to practise successfully we physicians must know the work of the masters in surgery. In the diagnosis of disorders of the abdomen we are their pupils. In cases likely to become surgical the early association with a surgical colleague is both a duty and a pleasure.

Baltimore, U.S.A.

OBSERVATIONS BASED ON THE PROBABLE MODE OF FORMATION OF URINARY STONE, RELATIVE TO ITS RECURRENCE AND PREVENTION.

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IN an article which appeared in THE LANCET[1] entitled "A Further Contribution to the Surgery of Stone in the Bladder" I endeavoured to illustrate how progressive this work had been during the latter period of the past century and how intimately this was associated with the general adoption of the method of operating which Bigelow originated in 1878 and which has since been known by the name of "litholapaxy." I then purposely left for further consideration the only feature connected with this class of operations which seemed to require amendment or improvement. I refer to the liability to recurrence, which is admittedly larger after crushing as compared with other methods for removing stone from the bladder, though the mortality of the former is considerably less. In the paper referred to there were 101 cases of stone operated upon by litholapaxy alone, in addition to other methods. Of this number there were six deaths, whilst in 23 cases there was recurrence in some degree. The average age of these 23 persons was a fraction under 63 years. Several of the recurrences only amounted to the formation of some phosphatic gravel mixed with tenacious mucus, which was readily removed by the washbottle and aspirator. 17 of these persons had considerable enlargement of the prostate, 12 had pouched bladders, and the same number were more or less dependent upon their catheters at the time of operation. In two cases it seemed probable that recurrence was due to fresh descents of stones from the kidney and their retention within the bladder by the large prostate. In one of the fatal instances recurrence was traceable to a pouched bladder complicated with neglected urethral stricture and chronic suppurative nephritis. Hence it may be inferred that though a stone is successfully removed by operation this does not necessarily imply that the original cause for its production has thus coincidently ceased to exist.

From these statements it seems clear that the class of cases where the tendency to recurrence is greatest and most difficult to deal with, subsequently to the primary operation, is that in which, before stone formed, the bladder was more or less functionally and structurally spoilt by the obstruction it had been submitted to by enlargement of the prostate. It is hardly necessary to enumerate atony or loss of muscular power to expel urine, pouching, trabeculation, and cystitis, as being amongst these commoner effects.

The liabilities in its application to this class of cases seem in some degree to discredit the crushing operation in the eyes of the profession and public. Mr. Cadge in 1886 referred to it in the following terms: "This seems a heavy indictment to bring against lithotrity, but I am afraid there is no gainsaying it, and if so, it would be wrong to pass it over or make light of it. Many of these relapses might be prevented if the patients would observe directions and persevere with treatment."[2] I shall endeavour to show in detail, later, how we may succeed in giving effect to the latter statement.

On the other hand, in otherwise healthy persons without these prostatic and other defects the liability to recurrence of calculus in the bladder after operation is slight, as was also shown in the previous paper, and may usually be accounted for by the unexpected descent of a fresh nucleus from the kidney in the form of a small urate or oxalate

[1] THE LANCET, Nov. 12th, 1898, p. 1250.
[2] Hunterian Lectures, Royal College of Surgeons of England.

stone. This is a cause for recurrence which applies equally to lithotomy as well as to lithotrity, however performed.

The information we now mostly require relative to the removal of primary stone from the bladder under the conditions first mentioned of more or less permanent catheter-dependence and prostatic obstruction is not so much as to how quickly the operation can be effected, or how speedily convalescence follows, but as to what happens within the 12 months or thereabouts immediately succeeding it and concurrent with the abnormal states of the parts referred to.

The object of my paper is relative to the former class of cases, from which the greater proportion of stone recurrences after operation are drawn, and to show what has been done recently to diminish this tendency in them, and upon what principle or lines the latter may now be successfully attempted. Thus may we hope to lessen this liability and so to increase proportionately the efficiency of treatment. For it seems to be a more reasonable proposal to endeavour to extend the scope of an operation attended with so much to recommend it and so small a mortality than to substitute a more serious proceeding. Though lithotomy may be necessary for special reasons connected with the size or hardness of a stone or for other considerations, I can hardly see how its mortality, apart from other drawbacks, is likely to be diminished in the future, having regard to the advanced age and enfeebled powers of the persons upon whom it is usually practised. A repeated litholapaxy or a substituted lithotomy are in no sense comparable in elderly or feeble people. I purpose, therefore, to deal with the class of cases noticed as being most prone to recurrence. I will arrange my remarks under three headings: (1) the local treatment of the bladder following litholapaxy; (2) preventive treatment based upon the mode in which it is assumed that urinary calculi are formed; and (3) some illustrative cases.

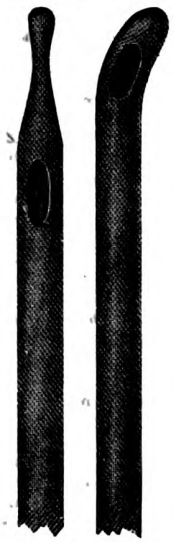
I.—THE LOCAL TREATMENT OF THE BLADDER FOLLOWING LITHOLAPAXY.

For some time past I have acted on the rule of regarding all cases operated upon for stone as "suspicious" until a sufficient interval has elapsed to free them from this imputation. This, as I have urged, is the more necessary in cases where the normal functions of the bladder are impaired by prostatic obstruction. Here personal supervision should be carried on for a period after the individuals have passed from the hands of the operating surgeon into those of the usual medical adviser. Such observation should have reference to the fact that there is a time in the history of all stones forming in the bladder, as well as in others where the nuclei descend from the kidneys in the shape of small calculi, when they would have escaped through an ordinary adult catheter as used for normal dimensions. Hence when the condition of the urine after an operation remains

FIG. 1.

abnormal, or unexpectedly becomes so, as indicated by appearance, smell, or microscopical examination, the bladder should be carefully attended to until such states are either explained or removed. Tentatively even under these circumstances, or for moving and withdrawing minute concretions or calculi, which would soon develop into larger stones, and before they have furnished full evidence of their presence, the bladder should be washed out as for exploration. Direct evidence of the necessity for this is often furnished by the withdrawal of a number of small phosphatic concretions or other crystalline bodies which on examination with a magnifying glass may be seen arranging themselves so as eventually to form distinct conglomerations of calculous material. In the accompanying illustration (Fig. 1), which is copied from Sir Everard Home's Lectures (vol. vi.), minute crystals of uric acid may be seen held together by wavy shreds of mucus in course of consolidation by the process described by Rainey, and which will be again referred to later, of molecular coalescence. These are frequently met with and may be readily recognised. If not removed they are the sure forerunners of stone. To effect their removal a suitable syringe and catheter are required. I have tried many kinds of the former and other apparatus used for washing out the bladder, but the best is a metal syringe made to fit various sizes of catheters. This should work easily, without jerking and with sufficient power for the purpose. The syringes I refer to are not liable to get out of order and can be readily rendered aseptic and kept so. The best catheters are the larger-sized, smooth-bored, silk web ones, with an ample bevelled eye (Fig. 2). The larger the instrument the better, so long as it will enter the bladder without causing pain or too much tension. It is convenient

FIG. 2.



to have the end somewhat funnel-shaped, so as readily and accurately to fit the conical nozzle of the syringe. For this purpose, until the patient is used to the passing of the catheter, the urethra may be rendered less sensitive by the application of a 5 per cent. solution of cocaine with a Guyon syringe. For injecting, warm water—preferably soft water—answers the purpose very well. If the urine is offensive boric acid, sanitas, or a solution of permanganate of potash may be added. Whatever is used should be used freely. From two to four pints at one séance, or even more, may be injected in instalments once or twice a day, the object being to dislodge any concretions that pouches or sacs may contain and to obtain a perfectly clear return fluid. Hence the object should be to sluice the bladder rather than to wash it in the ordinary acceptation of the term. I have often found it answer to fill the bladder fairly full and then to cause the patient to lie or roll on his stomach. By this and such like devices concretions may often be got rid of in considerable quantities. In some cases, when the bladder is sacculated and to make doubly sure, it is well to wash out occasionally with the usual evacuator catheter and aspirator as used for removing débris after litholapaxy, which will also be found a test or sound as to the presence of any calculous concretion that may be unable to escape through the eye of an ordinary flexible catheter. By attention such as is here indicated the bladder becomes gradually less liable to form these concretions, as I shall show when I refer later to some illustrative cases.

Where the mucous membrane remains relaxed and spongy, as evidenced by an excess of mucus in the urine, which is often met with in bladders that have held stones for considerable periods, it is well, after the usual sluicing has been finished, to conclude the process by injecting, two or three times a week, a couple of ounces of a solution of silver nitrate (one grain to 12 ounces). This may be increased in strength provided it causes no pain. It is the best astringent for this purpose, but its utility is often marred by being used too strong. This quantity of the solution should be left in the bladder after it has been emptied of the water or lotion previously used. By this means, as illustrated in the previous article,[3] the process of molecular coalescence may be interfered with. It is not possible to indicate precisely how long the local measures described must be continued or how often repeated. The absence or presence of the symptoms referred to in individual cases should determine these points. I will therefore pass on to the second portion of my subject, which may be utilised concurrently with what has been described.

II.—PREVENTIVE TREATMENT HAVING REGARD TO THE PROBABLE MODE IN WHICH URINARY CALCULI ARE FORMED.

It is stated, and no doubt with some truth, that the causation of stone is connected with processes of physiological chemistry as yet imperfectly understood. This may be so, but it must be a matter of common observation, considering the complex nature of stone-formation as it occurs in the human body, that advantage is not generally taken on more definite lines to abort the process and to render it inoperative. For it would seem that the more complex and precise are the conditions for a constructive act of this nature, the less likely is it to happen casually, whilst the more open is it to attack from the direction I have ventured to indicate. We may, for instance, be only imperfectly acquainted with all the changes connected with some delicate experiment, but none the less do we recognise how its failure may be effected.

It may be remembered that in 1851 Rainey [4] of St. Thomas's Hospital demonstrated a mode of making calculi artificially by what he described as molecular coalescence. The more recent works of the late Dr. Vandyke Carter [5] and Dr. W. M. Ord [6] tend to confirm and extend these views. It will not be necessary to refer to Rainey's experiments at length. From their study and repetition the following conclusions may be drawn in relation to the special object of this communication:—(1) that for the production of calculi artificially by molecular coalescence precision in regard to all details connected with it is required; (2) that success is dependent upon the sequence or concurrence of several factors or fixed conditions; and (3) that molecular coalescence as described by Rainey explains the formation of calculi in the human urinary apparatus.

1. Apart from any theory of stone-formation it could hardly be supposed that there are two or more ways of concreting the constituting elements of a calculus any more than there are two ways of forming a gumma, an atheroma, or other pathological product. This consideration probably largely underlies our modern views of therapeutics. The difficulty in procuring this precision in the conditions necessary for the formation of stone and their concurrence doubtless explains the comparative rarity of the disorder relative to the population as well as various apparent anomalies connected with its geographical distribution. The following passage from Rainey indicates what has to be provided for in the laboratory. Less exaction than this could hardly be expected in the bladder or within an organised body.

> The process of artificial stone-making consists in introducing into a two-ounce phial, about three inches in height, with a mouth about one inch and a quarter in width, half an ounce, by measure, of a solution of gum arabic saturated with carbonate of potash. The specific gravity of the compound solution should be 1·4088, when one ounce will weigh 672 grains. This solution must be perfectly clear; all the carbonate of lime which had been formed by the decomposition of the malate of lime contained in the gum and also all the triple phosphate set free by the alkali must have been allowed completely to subside.

If a fixed medium is required for the formation of stone, and precision in regard, for instance, to specific gravity, to such circumstances as chemical reaction, temperature, rest, and movement, and possibly to other physical, chemical, or bacteriological details, it must be obvious how comparatively rarely these conditions can casually concur in the human body and how open one or other may be to disturbance. Such elaboration necessarily opens a field for reflection in the minds of those who have to regard this combination of events from a pathological point of view.

2. I do not think that it is sufficiently recognised that in the multitude of factors or conditions necessary for the formation of stone there is both wisdom and safety. Illustration is given of this by the following consideration. Assuming that eight or 10 grains of so insoluble a deposit as uric acid is daily excreted it would appear that there is not an individual in fair health who is incapable of forming a stone in a reasonable time provided that the other circumstances for concretion are favourable. If, for instance, a man in the habit of excreting 10 grains of uric acid a day were only to void half this with his urine and concrete the remainder it is obvious that he might form a stone of this material alone, weighing not less than half an ounce, in something like 48 days.

It is hardly necessary to search for causes of excess in the excretion of uric acid when the natural amount, placed under favourable conditions, is capable of forming a stone of this weight in so short a time. If the production of stone were dependent upon a single link rather than upon a chain of them it is probable that these disorders would be far more common and general than they actually are. It would seem that hitherto we have almost exclusively paid attention to searching for causes of stone arising out of excesses of their characteristic ingredients rather than in studying other contributory conditions of the urine which are capable of bringing this about by the consolidation of that which is natural in the excretion. Extremes of uric acid, for instance, do not appear alone to influence the formation of this variety of stone. Its excess in the urine has not been shown to increase this liability in certain districts. The East Indian on his diet of milk and cheese, pulse, lentils, wheat, rice, and the like, as Mr. Freyer [7] pointed out, would appear not to suffer from excess of uric acid but from the power he possessed of converting all that a strictly non-nitrogenous diet can supply into stone.

The earliest stage of gravel and stone-formation as it may occur within the kidney or other portion of the urinary apparatus is well indicated in the following extract from a report on the urine of a person who from time to time suffered in this way: "A large number [of cells] yet remain unaccounted for, and these are believed to be derived from the superficial layer of the mucosa of the renal pelvis. Crystals of free uric acid are also present both singly and collected into microscopic masses. These facts taken together represent a conjunction of circumstances which, with the occurrence of hæmorrhage after exercise, seems to leave little room for doubt as to the correctness of diagnosis [calculus]." It is not unreasonable to suppose that the initial step of stone-making which is here demonstrated might without much difficulty be disturbed.

3. So far as the applicability of Rainey's views to the formation of human urinary calculi is concerned I will only quote the following passage from the late Dr. Vandyke Carter's work in support of it, as I am not aware that this has ever been denied.

> Regarding the probabilities of the case, it seems to me that the necessary conditions for the operation of molecular coalescence may at times well occur in the living human subject. Thus, an excess of mucus, perhaps altered in character, would furnish a colloid medium with which uric acid, the urates or oxalates, could combine in the manner described.[8]

On the assumption that Rainey's process explains the formation of stone as observed in man it would appear that molecular coalescence is capable of being disturbed or aborted by interference with the conditions indicated under the foregoing conclusions (1 and 2). This act differs essentially from what has already been attempted by dissolving stones after they have once formed. It is, however, not improbable that some remedies which have been in vogue for the latter purpose—for instance, those containing alkalies—owe their claims to this distinction by seeming to

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[3] THE LANCET, Nov. 12th, 1898, p. 1250.

[4] Precise Directions for Making Artificial Calculi. Transactions of the Royal Microscopical Society, vol. vi. On the Mode of Formation of Shells of Animals, of Bone, and of several other Structures, by a Process of Molecular Coalescence, demonstrable in certain Artificially formed Products (Churchill, London, 1858).

[5] The Microscopic Structure and Formation of Urinary Calculi (Churchill, London, 1873).

[6] On the Influence of Colloids upon Crystalline Form and Cohesion, with Observations on the Structure and Mode of Formation of Urinary and other Calculi (Stanford, London, 1879); also Transactions of the Royal Medical and Chirurgical Society, March 9th, 1875.

[7] Transactions of the Medical Society of London, vol. xx., p. 78.

[8] Op. cit., p. 39.

prevent further formations on the grounds which I am advocating without in any material way diminishing the size of that which had concreted prior to their use. Preventing construction and effecting dissolution represent two different processes.

There are some interesting points bearing on this subject connected with drinking-water as used for ordinary purposes as well as medicinally. No one, I think, can doubt the efficacy of such spas as Contrexéville, Wildungen, Vichy, and others that might be mentioned, relative to calculous affections. During a stay which I made at the first-mentioned place two years ago I was much struck with what others have also noticed. In some instances the volume of water taken in conjunction with the exercise no doubt favoured the expulsion of small calculi by the mechanical act of flushing the part containing them. In others, though it did not appear to diminish the amount of uric acid voided, it seemed to prevent it collecting into small masses of crystals—that is to say, the latter showed a tendency under the influence of the waters to isolate rather than to aggregate. This was a matter of common observation with some of the habitués of the place. It seemed likely that in this way the process of stone-forming might be interfered with in its initial stage. Shortly before I had been struck with Mr. Cadge's[9] observations on the absence of milk as a food for children in the eastern counties of England relative to the prevalence of stone. I then made some observations on the effects of hard water used for drinking purposes under these circumstances, and though they were somewhat crude some results were obtained which appeared to be significant. Various samples of urine obtained from persons using such water were found to contain increased amounts of mucus, which were most marked in children. This test has since proved useful in assisting to determine the suitability of some hard waters for drinking purposes. Where the amount of mucus thus deposited is excessive it may be taken as tending to indicate that the water in question is not desirable, especially in the case of persons liable to gravel and urinary deposits. In connexion with this it is interesting to note that a change in the water-supply of a district—for instance, the substitution of some distant reservoir for local wells—has been found to alter substantially the liability of the inhabitants so supplied to stone and gravel.

These considerations suggest that an increased quantity of urinary mucus may provide a colloid for molecular coalescence and to this extent furnishes a necessary factor for concretion. Nor are such influences as I have mentioned confined to the use of certain waters, for they will be found similarly associated with various articles both of food and medicine. For instance, I have known persons who had been in the habit of passing small urate and oxalate calculi, attended with more or less pain and other symptoms, who apparently ceased to do so after taking from time to time short courses of such drugs as turpentine, sandal, copaiba, and others that might be mentioned—in fact, from the use of almost anything that has a distinctive and special action on the urinary excretion. I do not wish to be understood as expressing a belief that such drugs could dissolve a stone, whether small or large, when once formed or wherever situated, but in numerous instances their use appears to have been followed by a cessation of these discharges without necessarily interfering with the natural or excessive elimination of uric acid in this excretion. The presence of certain constituents of these drugs is judged as merely interfering in some way with the concretion of the latter into stone. Thus, as stated, may be explained the action of certain remedies, patented and otherwise, which have gained, properly or undeservedly, more or less notoriety in preventing the formation of stone and gravel. Some of these remedies which have come under my notice appeared to contain an ingredient which is admittedly capable of exercising some influence on the urine and may thus have been the means of disturbing a formative process in which this excretion was primarily implicated. Various alkaline salts formed the basis of some of them. A preparation called "Dutch drops" has for many years been a popular one.[10] It is stated to consist of "oil of turpentine, tincture of guaiacum, spirit of nitric ether, with oil of amber and cloves," the first ingredient being most likely the potent one in preventing crystalline concretion by molecular coalescence occurring as already suggested. Similarly the glycerine treatment[11] of renal concretions of uric acid may be explained.

An uncleanly condition of the urine, particularly of residual urine, where the individual is more or less dependent on the use of a catheter, is often a contributory cause of ammoniacal decomposition and the recurrence of stone after operation. I say a contributory cause of calculus, as some seem to doubt that a phosphatic stone can be formed without the presence of a nucleus upon which concretion can take place. Though this is frequently the case, it is not of universal application. Phosphatic calculi not rarely form in this way in the bladder, as in cases of advanced urethral stricture and sequential bladder changes, without any discoverable nuclei other than the concretion of the crystals of triple phosphate which the microscope readily discovers in abundance. The process of molecular coalescence is sufficient to explain this. Much may be done under these circumstances to prevent urinary decomposition by the use of the catheter and syringe as already referred to. Within the last few years improved means for sterilising the urine have also been largely and successfully employed. Effect is given to this on the same principle as milk, butter, and some food products liable to change under atmospheric and other influences are rendered more stable and less likely to undergo decomposition by containing certain proportions of boric acid or other innocuous antiseptics.

Some valuable drugs have been introduced for sterilising urine during its flow from the kidneys downwards and its storage in the bladder. Sandal wood, cubebs, and the like, doubtless owe some of their medicinal properties to their effects as bactericides, but they are nauseous and uncertain in their action. Some years ago I drew attention to an easily soluble and digestible salt of boric acid which often answers admirably and is much used by itself or in combination for this purpose. It is prescribed in teaspoonful doses in a tumbler of water, and may be taken frequently under the name of the borocitrate of magnesia. Many people use it with as much freedom as they do common salt with their food, as beyond sterilising the urine imperceptibly it appears to have no other action. Salicylate of sodium, benzoate of sodium, benzoate of ammonium, hyposulphite of sodium, are also useful sterilisers, which may be prescribed separately or in combination. Lastly, I would mention amongst this group a more recent introduction, under the name of urotropine, which is a valuable addition to it, and has in some instances a remarkable power of clearing urine and keeping it so. It is stated that its action is due to liberating formalin when mixed with the urine. By such means as these it is possible in some degree to wash out and to disinfect the pelvis of the kidney and the ureter, which in cases of chronic prostatic obstruction is often required, as much as, or even more than, the bladder. Thus a contributory cause of stone may be averted.

Of the effects of a solution of silver nitrate in preventing molecular coalescence and the formation of stone no more striking evidence can be afforded than those instances referred to in my previous paper.[12] In those cases by the injection of a weak solution of this salt foreign bodies introduced into the bladder were prevented from becoming coated with phosphates. This has been utilised in practice in connexion with accidents arising from catheters where delay in removing broken portions from the bladder was unavoidable.

III.—Illustrative Cases and Remarks.

I shall endeavour to illustrate some of the foregoing remarks by cases in which recurrence of stone in the bladder after operation was successfully treated, mainly by local attention and partly by instances where other influences were brought to bear upon formations and reformations not necessarily vesical in their nature nor requiring operation. Amongst the latter are included cases of renal gravel and stone, which may be said to form the largest proportion of urinary calculous affections. This will entail dealing with this aspect of the subject in two sections—viz.: (1) illustrations where the treatment was for the most part local; and (2) those where other influences were employed in aborting the stone-forming process.

1. Of the 23 cases of recurrence of stone referred to in my previous paper as having occurred after operation in elderly men, 12 patients are known to have had no further

[9] The Etiology of Stone in the Bladder, British Medical Association, Norwich, 1874.

[10] Pharmacologia, fifth edition, 1822, by Dr. J. A. Paris, F.R.S.

[11] Medical Chronicle, January, 1900; and Brit. Med. Jour. (Abstract 137), 1900.

[12] THE LANCET, Nov. 12th, 1898, p. 1250.

symptoms of recurrence for periods extending over from two to seven years. These persons were for the most part treated by local measures alone, as described in the earlier part of this paper, and as far as can be ascertained they have ceased to concrete stone. It has not been possible to follow up all the remaining cases, and but little reliable information can be ascertained about them. I am disposed to think that several of the patients have had no further recurrence, otherwise I should have heard of it. A few are hospital patients who cannot be traced. However, the 12 out of the 23 who are known to have remained well is a fair proportion for basing these remarks upon.

CASE 1.—The patient was a man, aged 79 years, whom I saw in 1890. He had a remarkable family history of stone, his grandfather, father, paternal uncle, and himself all having suffered in this way. A large prostate rendered the operation not an easy one. He had five recurrences, which were all treated by litholapaxy. The last occasion was in June, 1893, after which the process of washing out the bladder daily as previously described was commenced. Afterwards I sent him to take the waters at Harrogate, where he remained under the care of Dr. G. Oliver. Writing to me some months after this course he stated: "The urine is clear, acid, and free from deposit, and I am able to go about without my catheter in my pocket, a thing I never did for years past." He died at the end of 1898, without further recurrence, at the age of 87 years, having led an active life to within a few months of his death. My belief is that the local treatment and the sulphur waters effected the twofold objects desired in the manner suggested. The original calculus crushed was a triple phosphate weighing 53 grains, and those that recurred were of the same nature. The later operations rarely detained the patient to the house for more than a few days. In this case the urine was so continually alkaline and ammoniacal that I finally tried the artificial induction of the lactic fermentation, apparently, as in other instances, with success in preventing the precipitation of the mixed phosphates. This was first suggested by the late Sir William Roberts,[13] the object being to bring about and maintain an acid reaction of the urine by overpowering the ammoniacal tendency until the bladder, so to speak, had time to return to a more normal condition.

CASE 2.—In this case a man, aged 60 years, was seen by me in 1890 with Mr. F. Grant. A phosphatic calculus weighing two drachms was removed by litholapaxy in March of that year. During that year and the subsequent year he suffered from several recurrences which required removal by the lithotrite and washbottle. This entailed his giving up an active professional life. In 1891 he commenced the systematic method of washing out described and has had no further return since. Writing to me in 1899 he says: "I still, however, go on with the washing out, as I should not feel safe without it, and it is no trouble." He has resumed his work as usual. As in the previous case, the patient told me that he had been frequently advised to submit to a lithotomy and bladder drainage. He remains quite well.

CASE 3.—In the following case, though no recurrence of the stone took place, it will be seen how this was probably averted. It was that of a man, aged 67 years, whom I saw in 1893 and from whom I removed a stone by litholapaxy weighing one drachm. There was some prostatic enlargement. By regularly washing out the bladder in the way described from time to time with a solution of boric acid, masses of shreddy mucus containing triple phosphate crystals were frequently removed. Under the use of silver nitrate solution these eventually disappeared. In 1898, in spite of attention of this kind, considerable difficulty was experienced by him in using his catheter by reason of further enlargement of the prostate, cystitis, and repeated attacks of epididymitis. Again his urine became largely charged with triple phosphates, and muco-crystal strings and concretion appeared imminent. In 1899 double vasectomy was performed. This permitted a more thorough irrigation of the bladder with the large-eyed catheter and syringe, and the urine speedily recovered its normal condition, and the patient was again able to resume an active outdoor life. In getting rid of the phosphates and the excess of mucus, in addition to the local means mentioned, the sterilisation of the urine for stated periods of a week or ten days, from time to time, greatly assisted in effecting this and securing an acid reaction of the urine. Thus the almost certain recurrence of stone was averted. The steriliser used consisted of urotropine and benzoate of ammonium, five grains of the former and 15 of the latter drug in an ounce of chloroform water, taken thrice daily after food.

It may be observed that where at the time of operation and subsequently, as the consequence of prostatic enlargement, patients are more or less dependent upon the catheter, the local treatment by washing out with suitable instruments for preventing re-formation of stone entails little or no additional inconvenience. Where prostatic complications of this kind do not exist, and there is no such dependence on artificial aid for withdrawing the urine, either at the time of, or subsequently to, the litholapaxy, the precautionary methods adopted are of the kind employed in the following case.

CASE 4.—A man, aged 64 years, was operated upon by litholapaxy in January, 1897, when an oxalate-phosphate stone was removed weighing nearly two drachms. He was under observation for 10 days. In October, 1899, nearly three years afterwards, I again saw him with symptoms of stone, when about the same quantity of urate calculus was removed by litholapaxy, the patient remaining under observation for seven days. It seemed probable, from the entirely different character of the débris removed, that the latter stone was formed on the nucleus of a fresh descent from the kidney. There was no distinct symptom of renal colic, though those of vesical stone had been in existence for the previous two or three months. In the past year he has been tested once a month with the large eyed catheter and syringe as described. For the next 12 months the test will only be applied every eight weeks, unless occasion arise to indicate its more frequent use. He takes, in addition to this, five minims of oil of turpentine every night for the first 10 days of each month, and some urotropine and benzoate of ammonium in a draught on the following morning. The latter expedient is with the view of aborting any tendency to stone-formation taking place in the kidneys, where the nucleus of the vesical stones that were crushed came from. His prostate is somewhat enlarged and would probably trap any fresh descent from the kidney in the shape of a small urate or an oxalate calculus. For these reasons the double precaution has been now taken for the past year, and he is, as far as it can be judged, free from stone. Having regard to the past it will be desirable to continue these precautions in a modified degree for a year or so longer. Otherwise he is entirely independent of the catheter.

The cases which serve as the basis for these remarks were for the most part seen and dealt with in connexion with a record embracing my operations for stone during 1890–97. Since the last-mentioned date the views and practices here expressed and illustrated have had fuller effect given to them than in the previous series. The results, so far as they have gone during the three years ending with 1900, have tended to support their expression, as recurrences after operation have been less frequent, whilst the after-treatment of litholapaxy has been placed upon a more satisfactory basis. I have waited until a sufficient time has elapsed to speak with some assurance on these points.

I admit that it is difficult, if not well-nigh impossible in some instances, to give full effect to the mechanical details which are here described. Failures, therefore, must still follow and be expected, and it is these, however rarely they occur, that will make us turn occasionally to the old controversy—Would not a lithotomy have been better in the first instance? Possibly it might have been, but yet there remains something to weigh even against this. Individuality on both sides must receive some consideration in doubtful cases. The broader lines which govern the selection of lithotomy or lithotrity are in the majority of instances sufficiently obvious and applicable.

2. Passing to the second group of cases, which, for the most part, include voidable calculi and gravel voluntarily expelled by the act of micturition, formed and recurring independently of operations, I will offer a few illustrations as to how it seems probable that their construction may be interfered with. Reference has already been made to what has been observed at Contrexéville and elsewhere as tending to support this view, as well as to some indications following the use of different kinds of drinking water which appear to be significant. This brings us more directly in touch with the administration of drugs for the purpose under consideration.

The formation and recurrence of stone and gravel, terms which are only used as broadly indicating extremes of

[13] A Case of Lactic Fermentation in the Bladder, with Suggestions for the Use of the Lactic Fermentation as a Counter-septic Agent in Cases of Ammoniacal Decomposition of the Urine, THE LANCET, Feb. 25th, 1893, p. 405.

concretion so far as size is concerned, are met with in (1) urines that are more or less foul or that show evidence of decomposition; and (2) urines that are apparently normal.

1. The signs of decomposition to which importance should be attached are twofold: (1) the presence in the urine of flocculent masses of mucus containing crystalline material which may be seen by the microscope or by the naked eye, or may even be recognisable by the touch; and (2) an abundance of triple phosphate crystals in the urine as determined by microscopical examination of the excretion These suffice to indicate a liability to the formation of vesical stone which should not be neglected, more particularly in the case of persons who have already suffered from calculus or have undergone operation for it.

Apart from the employment of local measures, which were considered in an earlier part of this paper, modern therapeutics have added to our resources some important medicines which have already been referred to as sterilisers. Some of these may even be used with advantage as articles of diet, of which the borocitrate of magnesia is an example. Many instances might be quoted illustrating their power of removing those signs of urinary deterioration to which allusion is here made. It is not necessary to refer at greater length to them as they have already been named. By their internal administration in numerous instances the urine may be prevented from undergoing that kind of decomposition which enables certain products of the latter, by molecular coalescence, to form phosphatic stones of considerable size in a short time. I will pass on to say a few illustrative words relative to the second condition.

2. Urines that are apparently sound though excreted by individuals who are liable to suffer, not infrequently or lightly, from attacks of renal colic and stone, and are also exposed to some risk arising from the detention and increment of the latter in the bladder. These are the calculi which are usually of renal origin, and are best open to attack in the earliest stage of their formation. My attention was called some years ago to some cases of this kind due to the descent of small calculi from the kidney downwards, when, after the paroxysm of pain was over, the patients were treated by various drugs which were supposed, with some reason, to be chiefly eliminated through this system.

CASE 5.—The first instance was that of a man who had been in the habit of passing uric acid calculi for several years before I knew him. Eight years ago I crushed and evacuated a small calculus for him which had failed to escape from his bladder. It was only a small stone and confined him in the house for three or four days. Prior to this he must have passed from time to time over 100 calculi of the same kind, though rather smaller, which I now have. I have seen him only once since, about four years ago, when he was in excellent health. With the exception of three or four somewhat similar calculi which were passed within a few weeks after the operation referred to eight years ago, he told me that he had seen no more. Further, he informed me that he attributed this not to any change in diet, but to his taking, on the advice of a friend, five minims of oil of turpentine night and morning for the first week of every month. When I saw him four years ago he told me that he had not changed his residence or his habits since the operation four years previously, but I think that he has done so since. I was struck at the time by this statement, but was disposed to regard it merely as a coincidence which could not be accepted without something more approaching a verification of the conclusion which the man had arrived at. However, I am disposed to think that there is something in it. If the conditions necessary for the formation of a stone in the kidney, or for that matter elsewhere, are fixed and unalterable, why should not the inference be correct? There is nothing irrational in the belief that this temporary addition to the man's diet, unpalatable as it might be to some, spoilt the process of stone-formation as another might favour it. Without pursuing this reasoning further I made use of the information thus given to me.

Trials have been made during the last three years with such drugs as sandal-wood oil, copaiba, cubebs, and turpentine, much on the same lines as those detailed in the case narrated. The cases in which these drugs were employed in this way were those of persons suffering from the passage of oxalate and urate concretions, commencing their use about the time when the paroxysms of pain connected with the expulsion of these bodies were over. Care was taken to regulate the doses so as not to interfere with the digestion of the patient. A course of a week or 10 days every month was the period usually advised. The results were very satisfactory in many of the cases, the use of the drug selected apparently resulting in the cessation of further formation of calculous concretions. Sandal oil and oil of turpentine were the drugs which were found best adapted for this purpose. The following case, which occurred about the time I commenced these investigations, interested me as showing the way in which calculi could be influenced artificially.

CASE 6.—The patient was an adult male upon whom I operated by litholapaxy three years ago. He had a phosphatic stone in the bladder of about the size of a small pigeon's egg, the result of damage done to the bladder by a chronic urethral stricture. He was operated upon at St. Peter's Hospital under gas and ether administered by Mr. W. Braine. On washing the fragments of stone out of the bladder after crushing it was noticed that they were all of a deep blue colour. I was at a loss to explain this at the moment, and so were others who were present in the operating theatre. It turned out on further inquiry that for three weeks previously the patient had been taking for his bladder symptoms a medicine containing methylene blue. He made a good recovery.[14]

In an interesting paper relating to stone formation Dr. Lindley Scott[15] has recently shown how oxalate of lime may be artificially resolved into other combinations and so be excluded in this form from the urine. Thus the formation of this kind of stone may be rendered inoperative.

It is hardly necessary to say in connexion with the tendency to the formation of urinary gravel and stone that morbid conditions of the excretion as indicated by an excess of normal constituents, or by the introduction of elements which are foreign to the urine, should as far as possible be dealt with on general principles which are sufficiently recognised and provided for. Excesses of urates and uric acid, for instance, as observed in the gouty, and the introduction into the urine of oxalates, cystin, and the like, are indications which will not be allowed to pass without special notice and attention. My contentions, however, are for the most part based upon proportions which may be normal.

I will briefly refer to two points connected with the processes of removing stone from the bladder which have a bearing upon the subject of recurrence.

In the first place every care should be taken, especially in the case of crushing operations, to remove all fragments of stone from the bladder. It should be remembered that the bladder of a man obstructed by an enlarged prostate in front of it, not uncommonly more closely resembles the section of a coarse bath sponge than the inside of a tea-cup. Thus the difficulties of clearing the former are considerably increased as compared with the latter. But the successful accomplishment of this is not often unattainable and should be first demonstrated to be so before crushing is put aside on this ground.

In the second place, care should be exercised, whether lithotomy or lithotrity is selected, to avoid introducing rough scar-tissue into the bladder. It is just as liable to cause stone concretion as any other foreign body. I illustrated this in the Surgical Section at the meeting of the British Medical Association in 1900. One reason for the success and comparative rarity of stone recurrence noted in earlier days by lithotomists who practised median and lateral lithotomy

[14] It would be interesting to know, particularly in regard to further developments, if any observations have been made as to whether the colour of a urinary calculus, apart from the nature of its chemical composition, exercised an influence on the shadow cast by the x rays. For instance, if a black oxalate stone gave a more pronounced outline than a similar one of a lighter colour, such information would be of value. It occurred to me that if depth of colour intensified the shadow thus produced it was possible to bring this about artificially. In the case I have recorded I found that a white phosphatic stone was deeply stained blue by the patient having previously been treated by a course of methylene blue (tetramethylthionine chloride) for cystitis. I have seen other vesical calculi stained a deep indigo colour in this way. I have wondered whether different degrees of intensity observed in radiographs of oxalate of lime calculi in the kidney were explainable on this principle. If so, a practical point in aiding their diagnosis in this way is suggested. I venture to raise this question, as feeling the great importance of endeavouring to discover calculi in bladders distorted by enlarged prostates without the use of a sound, and for calculi in the urine passages which are inaccessible to the touch. A stone in the bladder when detected by the sound under these circumstances should be at the same time removed. This is not always convenient. A stone detected by radiography permits of a delay without detriment, or reflection upon the process employed.

[15] Brit. Med. Jour., Oct. 13th, 1900.

correctly was that they introduced no scar-tissue afterwards within the area of the bladder. When I was engaged in teaching pathology and surgery I had several opportunities of demonstrating what would seem to support this statement. I have more than once scraped off phosphatic concretions from the rough uneven inner scar of a suprapubic cystotomy.

In preparing this paper, the subject suggested itself from a critical examination of my own work, which was not unconfirmed by that of others who also possessed ample means of obtaining information. It appeared to me that the liability to recurrence after lithotrity, or litholapaxy as it is now called, was larger than it should be and might be reduced. And further, that the whole subject of stone-formation and recurrence, relative to prevention and treatment, was capable of being reconsidered and dealt with on more precise and definite lines. This, I think, will be admitted to be the case, and that in attempting to do so we may fairly hope where surgical interference proves necessary to extend the limits of the crushing operation rather than to curtail them.

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ON A CASE OF MYASTHENIA GRAVIS, PSEUDO-PARALYTICA; DEATH; NECROPSY; REMARKS.

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UNTIL Dr. Buzzard published his important clinical lecture on this curious and formidable disease[1] it was probably hardly known by name in this country. More recently, in the Summer Number of *Brain* for 1900, Dr. Harry Campbell and Dr. Edwin Bramwell have supplied a critical digest of the 60 or 70 cases hitherto recorded. Of these 11 only have been described by English observers, mostly under different synonyms. Yet the complaint may be less rare in England than it would seem to be. Dr. Buzzard mentions his impression that in addition to the four cases which form the subject of his lecture he has "seen with his eyes though failed to recognise the significance of not a few other examples of the disease." A similar impression may be shared by some of his readers with regard to their own experience. Most diseases have gone through a phase in which they are known though nameless. They are not recognised as entities until a comprehensive title has been invented for them, and this has been the case with myasthenia gravis. For a full bibliography of the subject reference may be made to the excellent monograph by Dr. Campbell and Dr. Bramwell. The typical symptoms and course of the disease are well illustrated in the following case (shown before the Clinical Society of London, February, 1900).

The patient a woman, aged 23 years, single, a waitress, was admitted to the Hospital for Epilepsy and Paralysis, Regent's Park, on Jan. 26th, 1900. She complained of general weakness, but in particular of difficulty of speech and deglutition. Her family history was said to be good. A paternal aunt was epileptic. (A sister shortly after this patient's death had a bad attack of chorea gravidarum from which she recovered.) As to her personal history she was always considered healthy until the present illness. She had been a waitress at various restaurants for the last four or five years and had been accustomed to work as many as 12 hours daily. With regard to her present illness, in December, 1899, she complained of always feeling tired, and towards the end of the day she found that she could not speak distinctly owing to spasm or (?) loss of control over her lower jaw. She used to make light of it, saying, "My jaw is refusing duty." Perhaps this symptom was akin to the jaw clonus noted in Buzzard's first case. In July, 1899, the difficulty of speech increased and was more frequent, and deglutition was also affected. She sometimes choked whilst trying to swallow solids and liquids returned through her nose. She also noticed that she could not fully close her eyes. Her trouble in articulation and deglutition gradually became more serious and also the general sense of fatigue. The fingers of the right hand often "dropped" so that she could not write or sew. All the symptoms were worse after exertion or if "put out" or "upset" in any way. There was no history of sore-throat. She remained at work until Jan. 16th, 1900, when she first attended hospital. Her condition then was somewhat alarming. She could hardly walk without assistance and her speech was quite unintelligible; her mother had to interpret all she said. When she tried to swallow water it came back at once through the nose. She could not shut her eyes. She was sent home with instructions to remain in bed until she could be admitted to hospital. On admission a week later her condition was considerably improved.

On admission she was found to be a slightly-built, delicate-looking girl, pale but not markedly anæmic. She had paresis of the orbicularis oculi and oris, of the tongue, soft palate, and probably of the pharynx. She could frown and elevate her eyebrows, but could not fully close her eyes. In the attempt to do so the eyeballs were turned up, exposing about half an inch of conjunctiva in the right eye and somewhat less in the left. She could offer no resistance to passive elevation of the upper eyelids. There was no ptosis. Even after prolonged up-looking the eyes remained fully open. Ocular movements were perfect; there was no nystagmus. The pupils were equal; their reaction was normal. The optic discs showed some pallor of the nasal half. There was no restriction of fields of vision. The mouth was weak-looking, half open, and the labial fissure was widened. At times the upper lip was elevated and the naso-labial fold was accentuated, giving her a disagreeable and scornful expression. But her aspect generally was melancholy, although she was not really so. She could not purse her lips up or blow out a candle unless she first held her nose. She could not whistle; but a year before, she said, she could do so "like a boy." She could not blow up her cheeks at all unless the anterior nares were first closed, and even then air readily escaped through the mouth owing to weakness of the orbicularis oris. The other muscles of expression were not paretic. There were no tremors and no wasting of the face. The tongue was protruded straight and was not obviously wasted. It was slightly tremulous after prolonged protrusion, but the tremors were not fibrillary. She could execute all other movements with it but could not curl it longitudinally. The associated action between the orbicularis oris and transverse lingual muscle was lost. The soft palate hung level and moved on phonation and respiration, but not to a normal extent. After speaking or reading aloud for a time the palatal movement was lessened. Speech was weak, indistinct, and markedly nasal. After talking or reading aloud for a couple of minutes she was almost unintelligible. The speech resembled that of persons with a cleft palate; air was heard to escape through the nostrils with each word. It was rendered still more indistinct by the difficulty in sounding labial explosives *b*, *p*, and the gutturals *k*, *g*. The vocal cords acted normally. No signs of fatigue after phonation were detected. Cough was forcible. Deglutition was rendered difficult by loss of prehensile power in the lips. She could not suck a spoon clean. Food tended to collect on the right side of the cheek, but not on the left, where she had lost her lower teeth. She had also difficulty in controlling the movements of a bolus of food with her tongue; she swallowed it slowly and with obvious effort, whilst liquids, as mentioned before, were often regurgitated through the nose. There was no apparent weakness of the masseters or pterygoids or elevators of hyoids. The dysphagia and dysphonia varied greatly. On first waking she could talk and eat fairly well; but towards the end of the day, or if tired, her difficulties increased. With regard to muscular power, the hand grasp (recorded by dynamometer) was as follows:—R. = 30; L. = 40. There was the same result after four trials. She could resist passive movements of the elbow, wrist, and shoulder and of the ankle, knee, and hip with a fair amount of force; but after a short time her resistance became intermittent. Actual loss of muscular power was not apparent except after exertion. After a night's rest she sat down, rose, turned, walked, and moved generally without obvious effort. None of the muscles were atrophied. As to the reflexes, the soft palate and pharynx moved on stimulation, but the reflex actions were perhaps diminished as she was very tolerant of laryngoscopic examination. Tendon and superficial reflexes were normal. The knee-jerks were not lessened after repeatedly tapping the

[1] Brit. Med. Jour., March 3rd, 1900.

patellar tendon. There were no tremors nor ataxy. The muscular sense was accurate. Sensation was everywhere normal. The thoracic and abdominal organs seemed healthy. Nothing abnormal was noticed in the pulse and respiration. She did not complain of breathlessness after exertion, but only of feeling generally tired. The sphincters acted normally. The bowels and menstruation were regular. The urine contained neither albumin nor sugar and was normal in quantity and appearance. Its toxicity had not been tested. With regard to electrical reactions, there was slight diminution to faradaism. There was no reaction of degeneration. As to myasthenic reactions, the right biceps was exhausted and ceased to react to faradaism in about one minute, contact being broken from 60 to 75 times per minute. The left biceps was exhausted in about one and a half minutes. Response to the current however, was restored in from 15 to 20 seconds if the application were stopped as soon as exhaustion occurred. If continued after exhaustion the period of inaction was increased. In the face the orbicularis oculi and oris were exhausted much more easily than the other facial muscles. The myasthenic reaction was far less readily produced in the muscles of the lower extremities than elsewhere.

Progress.—At the end of three months' observation the general condition had greatly improved. There was now no actual inability to swallow nor regurgitation. Speech only became indistinct after reading aloud for several minutes. The right eye could be almost closed, and resistance to passive elevation of the eyelids was more apparent than it had been. The mouth looked smaller and less flabby. She felt stronger and had gained three and a half pounds in weight. Treatment had been by rest and the administration of liquor strychniæ.

Subsequent history.—She left the hospital at the beginning of May, 1900, and went to Tunbridge Wells, where she remained until a severe relapse occurred on June 15th. Her mother believed that the relapse was due to mental trouble. An engagement to marry had been broken off and her *fiancé* had gone to the war in South Africa. When seen on June 19th her condition was much worse than it had ever been. She could not swallow water even in sips. Her speech was quite unintelligible and the palatal movements were more sluggish than before. Her mouth was full of glairy mucus and saliva which she could neither swallow nor eject. Her neck muscles were weakened, so that her head fell backward if she inclined it beyond the centre of gravity, unless she supported it with her hands. She was very depressed and tearful. On July 3rd the weakness of the neck muscles had passed off. On the previous day she had choked whilst trying to swallow a small piece of bread-and-butter. She could neither get it up nor down, but her mother succeeded in dislodging it with her finger. On the whole she seemed rather better. She was not seen alive at hospital again, but Dr. Edmund Holland of Regent's Park has kindly given particulars of the conclusion of the case.

On July 10th she started for a short walk, but soon returned, complained of great fatigue, and finally took to her bed. On the night of the 11th Dr. Holland was called to see her and found her suffering from a bad attack of dyspnœa. She was fighting hard for breath and he thought that she was dying. The attack, however, passed off in about an hour, after which she slept quietly. The next morning she was breathing easily, but she could not sit up in bed without assistance. She had only taken about a pint of liquid nourishment in 24 hours for several days, and deglutition was getting more and more difficult, so he ordered her to be fed by nutrient enemata only. On July 14th general weakness was much more marked. After talking a little her voice became reduced to a whisper. On the 15th the diaphragm was apparently paralysed, as she could not cough to clear her throat of mucus without pressing her hands on the lower ribs and epigastrium. She died quietly about 3 A.M. on the 16th. Consciousness was maintained until an hour before death, which was probably due to respiratory failure and gradual exhaustion.

Necropsy.—A post-mortem examination was made 30 hours after death. The body was slight in build but not emaciated. Rigor mortis was well marked. All the internal organs seemed healthy and also the brain and spinal cord.

Microscopical examination.—Dr. H. Campbell Thomson reports as follows: "The cord, medulla, and portions of cortex were hardened in formalin (5 per cent.), cut with a freezing microtome, and stained with carbol-thionin. The cells of the hypoglossal and glosso-pharyngeal nuclei for the most part appeared normal; in some, the chromatophile granules were not differentiated, and formed a homogeneous staining which, however, was not darker than normal. There was no loss of chromatophile bodies noticed in any of the cells. Cells from the spinal cord at the level of the third cervical roots showed similar changes. No other changes were detected either in the cells or in the other tissues of the cord. Examination of the cortex and of the nerve trunks gave negative results." Dr. Thomson considers the changes described as merely due to slight variations in staining and that the results of examination as a whole are negative. Thus the most modern methods of investigation only confirm the accuracy of Sir Samuel Wilks's description of the first case on record in this country, as one of "bulbar paralysis without anatomical changes."[2]

The motor-nerve endings in muscles were not examined in this case because portions of muscles removed for that purpose were unfortunately lost. Yet I venture to think that examination of them would probably have been also negative, for the variation in symptoms shows that the motor end plates or terminals in muscles, the most delicate portions of the neurons, cannot be permanently disorganised. This is implied by the descriptive term "pseudo-paralytica," which forms the sub-title of the disease. Myasthenia gravis is, in fact, a condition of toxæmia. The toxin, whatever it be, appears to have a selective and narcotic action on the motor neurons as a whole, and when the neurons attacked are vital, death is the result, in accordance with the virulence and intensity of the poison at work. Of the nature and origin of the toxin causing myasthenia, little or nothing is known. It is probably endogenous rather than exogenous, because the disease does not occur in epidemics or attack members of the same family simultaneously. It cannot be traced to any definite antecedent complaint. The supposed exciting causes have been so many and so various, yet so often altogether absent, that we cannot attribute to them any important part in the causation of the disease beyond that of weakening the patient and rendering him susceptible.

Origin of toxin in muscles.—The fatigue phenomenon suggests that the muscles are rendered inert by the products of their own activity. But Dr. Bramwell showed that this is not so by an ingenious experiment. He found that massage of an exhausted muscle (biceps) did not diminish the period of rest required before it resumed activity. Had the poison been muscle-bred, massage would have dispersed it. The absence of digestive disturbance is against a gastro-intestinal origin. Examination of the urine for poisons having a curara-like action gave a negative result in one of Buzzard's cases.

Origin in ductless glands.—The extreme muscular prostration which attends Addison's disease has suggested that the suprarenal bodies may also be affected in myasthenia gravis. The uselessness of suprarenal extract as a remedy does not disprove that this may be the case. The extract is probably a complex body and the active principle required may not yet have been isolated.

Possible splenic origin.—Dr. Sidney Martin[3] showed that the spleen is the chief repository of the poison of diphtheritic paralysis and that it is from the proteids of the spleen that the specific poisonous products are mainly formed. In Landry's disease the spleen is most commonly found enlarged and there is a strong resemblance between the symptoms of Landry's disease and diphtheritic paralysis and those of myasthenia gravis. Possibly, therefore, the spleen plays an important rôle in all these affections and is the chief factory whence the poisons are delivered into the circulation. But such theories are at present purely conjectural.

Diagnosis.—The diagnosis of so typical a case as the above presents no difficulty. The clinical details of myasthenia gravis are:—1. Bulbar paralysis, usually slight but at times extreme, affecting the lips, tongue, soft palate, pharynx, and larynx. 2. Weakness of the upper facial muscles, especially of the extrinsic ocular group, causing ptosis, ophthalmoplegia, or inability to close the eyes. The mid-facial muscles—e.g., zygomatic—seem commonly to escape. Of the vital bulbar centres the respiratory is more frequently affected than the cardiac. In a few cases palpitation and syncopal attacks have been observed

[2] Guy's Hospital Reports, 1877.

[3] Goulstonian Lectures, THE LANCET, March 26th (p. 677) and April 2nd (p. 735) and 9th (p. 787), 1892.

apart from, or associated with, dyspnœa. Severe or fatal attacks of dyspnœa may be due to falling back of the tongue, to abductor paralysis of the vocal cords, to paralysis of the intercostals or diaphragm, or to actual obstruction from food passing into the larynx or becoming impacted in the pharynx. 3. Weakness and readily induced fatigue of skeletal and trunk muscles. 4. Presence of so-called myasthenic reaction (the reaction of muscles to faradaism normal at first, but speedily exhausted). 5. Absence of muscular wasting and of fibrillary tremor, with a few doubtful exceptions. 6. Absence of sensory affection, of mental disturbance, and of incompetence of sphincters. 7. The deep tendon reflexes are usually normal, but rarely exaggerated; in a few cases they have been exhausted by repetition. 8. Remissions and exacerbations of the symptoms, both bulbar and general, are characteristic features. The pareses may disappear entirely after rest, but return on exertion. The ocular pareses alone are apt to be persistent. Strümpell supposes this to be due to the ocular muscles being in a constant state of activity. Perhaps the ocular muscles are more permanently disabled because their neurons are few in number compared with those of other muscles, and therefore fail more readily. The same muscles are apt to fail, without apparent affection of others, in syphilis, in early general paralysis of the insane, and in incipient tabes.

The mode of onset is usually gradual, rarely it is sudden, and accompanied by slight headache, pains in the neck and back, giddiness, and photophobia. In some cases the limbs are first affected, but ocular or bulbar symptoms commonly lead the way. The onset may be dated from some preceding illness in a certain number of cases, but not in all. There appear to be no limits as to the age at which the disease may occur. The oldest patient in Campbell and Bramwell's collection was 55 years of age, the youngest was two and a half years. The average age for men was 35 years and for women 24 years. Both sexes are about equally liable to the affection.

Prognosis.—Of 60 cases, several of which, however, are doubtful and many incomplete, 24 have proved fatal; two more fatal cases have been recorded by Hall[4] and Paul.[5] The average duration of the disease in fatal cases was one and a half years. In one it lasted 14 days and in another 15 years. Complete recovery is possible. One patient was in good health four years after all symptoms had disappeared. Goldflam regarded the disease as "a curable form of bulbar paralysis." But the method of cure is still to seek.

Differential diagnosis.—The symptoms of hysteria only superficially resemble those of myasthenia gravis. Weakness, lassitude, and readily induced fatigue are common enough in hysteria and neurasthenia, but the presence of the myasthenic reaction in myasthenia gravis (exhaustibility of reaction to faradaism) affords a distinction. In myasthenia gravis, moreover, sensation is almost invariably unaffected. As regards the ocular symptoms, hysterical ptosis due to spasm of the orbicularis should not be mistaken for myasthenic ptosis due to paresis of the levator palpebræ. True nystagmus does not occur in hysteria, nor do true ophthalmoplegia and inability to close the eyes, all of which symptoms are common in myasthenia gravis. The dysphagia of hysteria is characterised by prodigious though unavailing attempts to swallow. There are incoördination and over-action of the muscles of deglutition, and the effort fails at the critical moment, so that the bolus of food is regurgitated back into the month. As Dr. StClair Thomson expresses it, "The patient complains that 'she cannot get the food out of her mouth,' or that 'it goes down but comes up before it is half swallowed,' or that 'when she goes to swallow, a ball rises in her throat to meet it.'"[6] In hysteria liquids are usually swallowed with ease. The difficulty is with both solids and semi-solids. In myasthenia gravis there is no overaction or incoördination, but obvious weakness of all or most of the muscles concerned in deglutition. The soft palate is particularly apt to suffer, so that fluids slowly trickle through the nose as well as from the weakly closed mouth when an attempt is made to swallow them. Semi-solids are more easily assimilated than either liquids or solids. In both hysteria and myasthenia gravis liquids or solids may go "the wrong way." But in hysteria the attempt to dislodge them is forcible and the cough is explosive; fluids may be violently expelled through the nares, but this is not due to weakness of the soft palate as in the case of myasthenia gravis. In myasthenia gravis one is at once struck by the weakness of the cough and the ineffectiveness of the struggles to obtain relief, when this distressing and dangerous accident occurs. Hysterical dysphagia is pure'y histrionic.

The speech defects which occur in both hysteria and myasthenia gravis are not alike in character. Hysterical aphonia in which the voice is reduced to a whisper but articulation remains perfect, and hysterical mutism in which the patient looks at one with tear-laden eyes and makes pathetic *moues* or inarticulate sounds cannot easily be confounded with the dysphasia of myasthenia gravis. In the latter disease the voice may become inaudible owing to paresis of the adductor vocal cords and of other respiratory muscles, but weakness of the lips and tongue renders articulation also imperfect or even unintelligible. In hysteria speech may be indistinct from stammering and stuttering due to spasm and incoördination of the tongue and other muscles concerned, but in myasthenia gravis stammering and stuttering are absent. The voice in myasthenia gravis has, moreover, a marked nasal twang which is never met with in hysteria, for in that disease paralysis of the soft palate does not occur.

Hysterical dyspnœa has also to be distinguished from myasthenic. In hysterical dyspnœa respiration is usually quick, shallow, and forcible. There may be incoördination between the action of the intercostals and diaphragm, or sometimes over action or perverted action of the diaphragm and abdominal muscles. This condition may be taken for paralysis of the diaphragm unless the movements are timed, when it will be found that the deep epigastric recession is synchronous with expiration and not with inspiration. Continuous churning and bubbling sounds produced in the stomach, and at short intervals loud trumpeting noises suggestive of a cough, a hiccough, and an eructation combined in one, are associated with hysterical diaphragmatic dyspnœa. Cyanosis is absent and there is no real distress. The dyspnœa ceases during sleep and for the time if the patient's attention can be distracted from her woes.

In myasthenic dyspnœa the distress and the patient's futile efforts to relieve it are only too plain. Sudden attacks of dyspnœa in which the patient falls to the ground and is in imminent danger of asphyxiation are ascribed by Strümpell to falling back of the tongue, for he found that they were relieved by traction on that organ. Another explanation of the relief thus afforded may be that traction on the tongue excited the respiratory centre in the manner described by Lister in cases of chloroform asphyxia. Abductor paralysis of the vocal cords associated with respiratory stridor is also one cause of myasthenic dyspnœa. This is said also to occur in hysteria, but the event must be so rare as to suggest a doubt as to the diagnosis. Myasthenic dyspnœa may depend on paralysis of the intercostals or of the diaphragm and abdominal muscles. The motionless chest in the one case and the epigastric recession occurring with inspiration in the other are in striking contrast with the signs of over-action and perverted action of the intercostals and diaphragm noticed in hysterical dyspnœa. The coarse bubbling râles due to accumulation of mucus in the throat and air passages and the weak, hoarse cough in myasthenia gravis can hardly be mistaken for the gastric borborygmi and churning noises and for the weird admixture of sounds produced per os by hysterical subjects.

Finally, in making a diagnosis between hysteria and myasthenia one is helped by the presence or absence of sensory affections and by the myasthenic reaction. It is true that myasthenic patients may also be hysterical, but as a rule this does not seem to be the case. Yet, unfortunately, at least one case of fatal myasthenia gravis has been diagnosed as hysteria.

From ordinary bulbar paralysis.—Myasthenia gravis is distinguished from ordinary bulbar paralysis by the involvement of the upper as well as the lower half of the face, by the affection of the limbs and trunk, by the myasthenic reaction, and by the variations in the severity of the symptoms. In pseudo-bulbar paralysis the limbs may be affected, but their condition is one of diplegia rather than flaccid paralysis, they are rigid, and show the ordinary signs of descending sclerosis. In bilateral facial paralysis the tongue and also the ocular muscles, with the exception of the orbicularis, are unaffected. The nerves give the

[4] Brain, No. 90, vol. xxiii.
[5] Boston Medical and Surgical Journal, Dec. 20th, 1900.
[6] "Functional Dysphagia," THE LANCET, Dec. 3rd, 1898, p. 1463.

electrical reaction of degeneration which is absent in myasthenia gravis. The facial type of myopathy somewhat resembles the appearance in myasthenia gravis. But myopathy is progressive or stationary and not remittent, the tongue, pharynx, and larynx, and, almost invariably, the ocular muscles with the exception of the orbiculares escape. In superior nuclear palsy (polio-encephalitis) the ocular and bulbar muscles may be paralysed. But here, again, we do not meet with the remissions of symptoms which characterise myasthenia gravis. Also superior nuclear palsy is frequently associated with syphilis, tabes, or general paralysis of the insane, but this association has not been found in myasthenia gravis.

From diphtheritic paralysis.—Myasthenia gravis is perhaps more likely to be mistaken for diphtheritic paralysis than for any other disease. A nasal voice, regurgitation of fluids through the nose when swallowing is attempted, are well-known symptoms of paralysis of the soft palate, and they occur almost without exception in cases of diphtheritic paralysis. In this disease, moreover, paralysis of the extrinsic and intrinsic ocular muscles, of the pharynx and glottis, and of the intercostals and diaphragm are extremely common. General muscular prostration, easily induced fatigue, are observed in diphtheritic paralysis and in myasthenia gravis alike. In both diseases we see sudden onsets of dangerous cardio-pulmonary crises, which may subside, but which often prove fatal. In myasthenia gravis, however, respiratory failure is most common and in diphtheritic paralysis cardiac failure. A most important point of distinction is that the knee-jerks in diphtheritic paralysis are, as a standing rule, absent, although for a brief period they may be exaggerated. In myasthenia gravis they are usually active. In a few cases they have been sluggish and in some they have been exhaustible on repetition. In no case have they been reported entirely absent. The myasthenic reaction is absent in diphtheritic paralysis, but faradaic excitability is diminished, and in some cases the ordinary reactions of degeneration are present. The history of a previous sore-throat is, of course, all important. Yet many cases diagnosed as diphtheritic paralysis have no such history, and possibly some of them may have actually been cases of myasthenia gravis. The following is probably an example.

A boy, aged 11 years, was an in-patient at the Hospital for Epilepsy and Paralysis at Regent's Park Hospital from April 14th till Oct. 8th, 1893, under the care of Dr. A. Hughes Bennett. In the latter's absence I frequently had charge of the case, and regarded it as one of diphtheritic paralysis without evidence of preceding diphtheria. But Dr. Bennett's more cautious diagnosis was "dysphasia and nervous debility." The boy was discharged "much improved." In April 1894, however, he was re-admitted to hospital by Dr. W. Aldren Turner who noted "general feeble action of facial muscles, paresis of both orbiculares and frontales muscles, pupils dilated, no cycloplegia, cannot whistle or pout lips; tongue not protruded as much as it should be; nasal voice, but palate acts normally, weakness of upper and lower limbs general, especially of trapezii and deltoids, knee-jerks elicited with difficulty; feeble action of facial muscles to faradaism." On April 25th attacks of dyspnœa commenced and continued at intervals until the patient died in one of them on May 24th, 1894. Dr. Turner made a post-mortem examination and found the cerebro-spinal system absolutely healthy in appearance. At the time neither he nor I were acquainted with myasthenia gravis and could only regard the symptoms as due to an extremely unusual form of diphtheritic paralysis; unusual in its long duration (more than a year) and in the occurrence of a fatal relapse after a period of remission lasting several months.

The average duration of myasthenia gravis (in fatal cases) is one and a half years, but diphtheritic paralysis rarely lasts beyond a few weeks, during which the symptoms are fairly constant and (with the exception of the dangerous respiratory and cardiac crises which come and go) gradually subside. The difficulty in making the diagnosis in early cases of myasthenia gravis is obvious; but when symptoms of supposed diphtheritic paralysis have lasted unusually long and relapses have occurred after apparent recovery the disease is probably myasthenia gravis and not diphtheritic paralysis. Sensory affections, such as numbness, tingling, and partial anæsthesia, may be of value in the case of adults as evidence of diphtheritic paralysis. These symptoms are usually absent in myasthenia gravis, but in a case recorded by Guastoni and Lombi[7] subjective sensations of heat occurred with formication.

From Landry's paralysis.—Landry's paralysis usually runs a more rapid course than myasthenia gravis. It seldom lasts more than a few days; the symptoms are steadily progressive and not remittent. Electrical reactions are said to be normal, myotatic irritability and superficial reflexes disappear, and sensibility is impaired.

From multiple neuritis.—The history of alcoholic, arsenical, and other toxæmic influences, also the presence of pain, hyperæsthesia or anæsthesia, tenderness in the course of nerves, local œdema, and glossiness or pigmentation of the skin, rapid wasting of the muscles, loss of tendon reflexes, absence of myasthenic reaction, distinguish multiple neuritis from myasthenia gravis.

From post-influenzal neuroses.—Some of the cases of myasthenia gravis in which the onset has been sudden and associated with fever, headache, photophobia, and general pains suggest an influenzal origin. Moreover, in the early nineties, when influenza was a far more virulent affection than at the present day, sequelæ in the shape of various forms of ophthalmoplegia, of paralysis of the soft palate, pharynx, and larynx, of various cranial nerves, and cardio-pulmonary seizures were not infrequent. The complete muscular prostration and general neurasthenia following influenza also resemble the conditions in myasthenia gravis. But apart from psychical and hysterical affections the post-influenzal paralyses in general are attributable to multiple neuritis or to definite myelitis affecting various segments of the cord, whilst in the case of myasthenia gravis the symptoms cannot be referred to such lesions.

Treatment.—The symptoms of the disease are always rendered worse by bodily exercise and mental excitement. Hence, complete rest for mind and body should be the aim of treatment. The patients are from the very first in imminent danger of death, and their relatives should be warned of this, otherwise the deceptive lulls in the symptoms may encourage fatal indiscretions. Medical attendants should remember that frequent physical examinations may have disastrous results. Meals should be small, easily assimilated, and given at short intervals. The use of the stomach tube is dangerous, and should deglutition become impossible rectal feeding is the only course to pursue. Stimulant methods of treatment by cold douching and faradaism are absolutely contra-indicated. Massage and galvanism have proved useless. None of the drugs hitherto employed appear really to influence the course of the disease. Strychnia has been used without benefit by Strümpell and Dr. Buzzard—my own patient improved under strychnia at first, but subsequently relapsed whilst still taking it. Thyroid and suprarenal extract have proved also ineffectual. Tonics, such as arsenic and iron, have no specific action. Perhaps a more extended trial of suprarenal extract might be worth making. Its probably complex nature and variation in its constituents according to the condition of the glands at the time the extract is made may account for its failure hitherto as a remedy. Other organic extracts, such as cerebrin, myelin, didymin, and ovarian substance may also conceivably be of service in a toxæmia which produces no visible changes in any part of the nervous system. Failing these medicaments, one can only hope that the toxin of myasthenia gravis may be traced to its source, isolated, and its antidote found in our chemical and physiological laboratories. For morbid anatomy has thrown no light on the nature of the disease.

Upper Berke'ey-street, W.

PTOMAINE POISONING OR PERFORATION?

BY E. KEMPSON BROWN, M.R.C.S. ENG., L.R.C.P. LOND.

ON Nov. 19th, 1900, I was called to see a woman who was said to have become suddenly unconscious. She was an albino, 27 years of age, of nervous temperament, and generally enjoyed good health. I found her lying on her back with her legs extended; her face was pale, her skin was hot to the touch, and her pulse was almost imperceptible. Her eyes were closed. When spoken to she made no reply, but opened her eyes, which were then seen to be expressionless

[7] Il Policlinico, Sept. 1st, 1900.

and vacant; her pupils were dilated and her eyeballs moved irregularly. Her respirations were loud and 20 per minute; her temperature in the axilla was 103° F. There were twitchings of the muscles of her neck and face, her abdomen was slightly tympanitic, and signs of pain were elicited on pressure. Physical examination of the lungs, heart, and liver showed nothing abnormal. After the lapse of an hour the patient was more conscious; her pulse was 140 at the wrist, of very low tension and irregular, and her temperature in the axilla was 105°. Subsequently she had rigors, her temperature fell progressively and was 99° five hours before death. Her extremities became cold, the surface of her body became clammy, and she had hallucinations with general nervous prostration. Diarrhœa and vomiting were frequent, the stools being offensive and dark-coloured. In three days she passed about a pint of dark-coloured urine containing phosphates and mucus but no albumin. A papular erythematous rash developed on the backs of her hands and wrists and a few spots on her abdomen and knees on Nov. 21st. Death occurred early on the morning of Nov. 22nd, about 86 hours from the onset of the first symptoms.

I ascertained the following facts from her friends. She had been poorly the previous week from the effects of menstruation and cold. On Nov. 17th she felt well and ate two beef sausages. Three other persons had also partaken of sausages the same night. Two of them suffered from diarrhœa and vomiting. The third ate very little and was not affected; she gave the rest of her sausage to her dog, which was violently sick 12 hours afterwards. The deceased was seized with severe pain in her abdomen and vomiting 12 hours after eating the two sausages; diarrhœa set in about 20 hours afterwards. At the post-mortem examination the abdominal cavity was found to contain about a pint of turbid fluid. There was exudation of lymph and there were recent adhesions between the omentum and intestines. The parietal peritoneum was smooth and there were no signs of inflammation. The peritoneum over the small intestines appeared to be intensely inflamed, especially in the region of the ileum; the upper part of the small intestine was markedly distended. The spleen and the posterior surface of the stomach were bathed in curdy lymph. The mucous membrane of the stomach was acutely inflamed over the cardiac portion of the greater and lesser curvature with numerous ecchymoses, and the external surface in these regions was likewise inflamed. In the upper part of the duodenum the mucous membrane showed petechiæ in the submucous tissue; the duodenum was dilated. The inner surface of the rest of the intestine was pale with a few pin-point nodules at the lower six inches of the ileum. The lumen of the appendix was occluded; there were no adhesions externally and no signs of recent inflammation in this region. In connexion with the left ovary there was a multilocular tumour of the size of a hen's egg containing clear fluid; there were no signs of inflammation around it. The right ovary showed commencing cystic formation. The Fallopian tubes and uterus were healthy; the bladder was normal; the kidneys, liver, spleen, and lungs were congested; the heart was normal; the brain was anæmic.

Remarks.—The points of interest about this case, I think, are the following: (1) the sudden occurrence of the semi-unconscious state; (2) the high temperature; (3) the absence of marked muscular weakness; and (4) the very intense inflammation in the peritoneum covering the intestine without any apparent inflammation inside from which the toxic irritant presumably extended. The peritonitis might conceivably have commenced over the cardiac portion of the stomach and so have progressively extended and become more general.

Andover, Hants.

A CASE OF CEREBELLAR HÆMORRHAGE PRESENTING WELL-MARKED EARLY CERVICAL OPISTHOTONOS AND KERNIG'S SIGN.

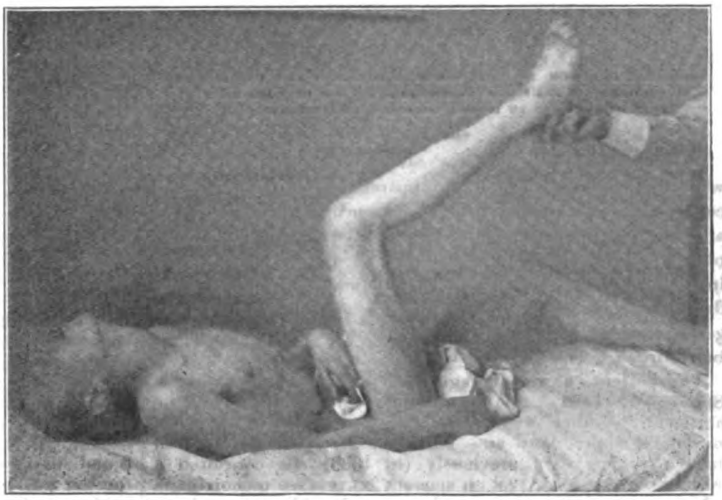
By WILLIAM THYNE, M.A., M.D. Edin.

A man, aged 20 years, with an epileptic history, was in his usual health on Christmas Day, 1900. After partaking of several hearty meals he was seized with vomiting, which continued through the night. About six hours after the onset it was noticed that the head was retracted (see Fig. 1) and the patient complained of severe frontal headache. There were no loss of consciousness, no motor paralysis, and no convulsions or twitchings, and the organic reflexes were unimpaired. The tendon reflexes were increased. Kernig's

Fig. 1.

Showing retraction of head.

Fig. 2.



Showing Kernig's sign.

sign was well-marked, as shown in Fig. 2. There was no ocular deviation. The condition of the optic discs could not be made out owing to the presence of traumatic cataract in the right eye and old keratitis in the left. The temperature was normal or subnormal except on the evening of Dec. 30th, when it was 102·6° F. The pulse varied from 60 to 160, but was regular in force and rhythm. There was no cardiac disease. On the 30th lumbar puncture was performed but gave a negative result. The patient remained in this condition, except for increasing weakness, till Jan. 4th, 1901, when he lost power in both legs, the right being the first affected. Consciousness remained unimpaired till death took place on Jan. 5th, 1901.

On the same day a partial post-mortem examination was made by Dr. R G. Riddell. The dura mater was thick but healthy. There was a serous effusion in the subarachnoid space which was very marked posteriorly. Over the right occipital lobe there was a thin layer of coagulated blood extending down to the cerebellum. The lateral ventricles contained about four drachms of clear serous fluid. The fourth ventricle was filled with blood-clot. There was a small hæmorrhage in the left lateral lobe of the cerebellum. There was no hæmorrhage over the base and no evidence of meningitis. The serous fluid from the subarachnoid space contained no organisms.

The sequence of events probably was as follows. A hæmorrhage occurring in the left lateral lobe of the cerebellum found its way into the fourth ventricle and thence through the foramen of Magendie to the subarachnoid space, the position of the hæmorrhage over the occipital lobe being probably determined by gravity. The case is interesting from the fact that well-marked cervical opisthotonos and Kernig's sign were due to cerebellar hæmorrhage, meningitis, with which they are usually associated, being absent.

Mr. S. G. Shattock very kindly examined sections of the cerebral lesion and found the arterioles free from any chronic disease in sections passing right through the seat of the hæmorrhage.

High Barnet.

A CASE OF PELVIC SARCOMA WITH CHYLOUS ASCITES; ABDOMINAL SECTION AND DRAINAGE; PATIENT WELL FOUR AND A HALF YEARS AFTER OPERATION.[1]

BY ARNOLD W. W. LEA, M.D., B.S. LOND., F.R.C.S. ENG.,

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DURING recent years many cases have been reported in which abdominal tumours, apparently malignant, have ceased to grow and have sometimes entirely disappeared as a result of simple abdominal exploration. Our knowledge of the factors concerned in bringing about this result is very imperfect. In some instances inflammatory masses have doubtless been taken for new growths, but this cannot be the general explanation and it is well that all such cases should be recorded. The notes of this case are as follows.

The patient, a woman, aged 58 years, was first seen in September, 1896. She complained of swelling of the abdomen together with "bearing-down" pain. She had never been pregnant and she had always enjoyed good health. Ten years previously (in 1886) she consulted a well-known gynæcologist on account of profuse menorrhagia which was considered to be due to a fibroid tumour of the uterus. Three years later she herself could plainly feel a lump low down in the right side of the abdomen, but the menopause had come on and the swelling caused her no trouble. Early in 1896 she observed a rapid increase in the size of the abdomen and she also had pains in the pelvis associated with irritability of the bladder and pressure symptoms. She had also recently lost flesh considerably, though she was still well nourished and looked fairly healthy. Examination of the abdomen revealed marked distension below the umbilicus, especially prominent on the right side. A thrill was readily obtained and the distended part of the abdomen was dull, while the flanks were resonant. The physical signs were those of a large thin-walled ovarian cyst. By careful palpation firm masses could be recognised apparently within the cyst. A large elastic tumour was felt in the right inguinal region and another rounded mass in the right hypochondrium. On examination per vaginam the uterus was found to lie very low, the cervix reaching the vulval orifice. Douglas's pouch was bulged downwards. The uterus was small and pushed to the left side; the sound passed two and a quarter inches. The right side of the pelvis was filled up by a firm irregularly shaped mass occupying the broad ligament and continuous with the mass in the inguinal region. The body of the uterus could not be clearly defined as separate from the tumour. The left side of the pelvis appeared to be free.

Operation was performed on Sept. 25th, 1896, when the abdomen was opened in the usual way and the parietal peritoneum, which was somewhat thickened, was incised. This was followed immediately by the evacuation of a large quantity of chylous fluid, at first sight resembling pus. Seven pints of this fluid were collected. It had evidently been encysted between peritoneal adhesions. On introducing the hand a firm solid mass was recognised filling up the right side of the pelvis and iliac fossa. This was covered by peritoneum and had developed between the layers of the right broad ligament. The uterus was pushed away to the left and was quite small. The appendages were normal. The rectum was not pressed upon and the left side of the pelvis was free from growth. The mass on the right side extended upwards, with numerous irregularities and several large projecting masses, as high as the right hypochondrium. The tumours were deep red in colour and numerous large vessels ran over their surface. A pedunculated mass, of the size of an orange, projected towards the left side of the abdomen above the level of the pelvic brim. The cæcum and colon were displaced and lay external to the tumour and posteriorly. The small intestines were pushed upwards by the pressure of the ascitic fluid, and were matted together by numerous adhesions. The mesentery was apparently considerably shortened. The liver was normal in size and to the touch. The tumour was evidently beyond removal. An incision into the peritoneal capsule showed this to be firmly adherent to the surface and it was impossible to strip it off to any extent. The abdomen was flushed out with saline solution and an indiarubber tube was inserted.

The patient progressed very favourably. The discharge through the tube was very scanty. There was no rise of temperature. The tube was removed on the sixth day. The wound healed well. There was no accumulation of fluid, though the masses of the tumour were now plainly felt. The patient left the Nursing Home in three weeks feeling very well. Microscopic examination of the fluid revealed a granular basis of emulsified fat with a few leucocytes and red blood corpuscles. Since this time, nearly four and a half years ago, the patient has remained in good health and I have seen her at intervals. At the present time she is 63 years of age and feels well. The abdomen is lax and resonant all over. On palpation, however, small masses can be plainly felt in the right iliac region and also in the right hypochondrium. The uterus is small and atrophied. The mass in the right broad ligament is still present but is much smaller.

Such are the facts of this case and I have thought it of sufficient interest to record it in some detail. The primary tumour appears to have been a fibro-myoma of the right broad ligament. The history of a swelling in that region for ten years associated with menorrhagia, but without any evidence of implication of the uterus, shows that the condition cannot have been malignant from the first.

Fibro-myoma developing in the connective tissue of the broad ligament is rare, but many cases have been recorded. In 1885 Mr. Bland-Sutton collected details of 11 cases, some of which had attained a large size. Mr. Alban Doran recently removed one weighing 44 lb. The growths have always occurred in women over 35 years of age and are often bilateral. They often also grow with extreme rapidity. In some cases

[1] A paper read before a meeting of the Clinical Society of Manchester on Jan. 15th, 1901.

at least this has been due to infection from the bowel, as in two cases recorded by Mr. Bland-Sutton. In this instance the physical signs and appearances were those of a malignant tumour. Many examples of the origin of sarcomatous growths from uterine fibroids have been recorded (W. Williams, Doran, Langenhans, Leopold, &c.), although this is undoubtedly rare. Microscopically, the malignant growth is usually a spindle-celled sarcoma or shows embryonic spindle cells of connective tissue or myomatous origin. Cases of primary sarcoma occurring in the broad ligament are also recorded. I am not aware that as yet any case of broad ligament myoma becoming sarcomatous has been described, but judging from analogy with uterine tumours there is a possibility of this occurring occasionally.

The development of chylous ascites in this case is also an unusual feature. Chylous ascites is in itself very rare. In a recent paper by Dr. Halliday Croom[2] he was only able to collect 63 recorded cases, but no doubt many more have occurred. Under this heading some cases have been placed in which the fluid was not chyle but milky-looking fluid in the peritoneal cavity due to the presence of cellular elements of a malignant growth. In true chylous ascites there is obstruction to the lymphatic circulation. This is rarely due to obstruction of the thoracic duct; more commonly it is the result of contraction of the smaller lacteals close to the mesenteric attachment of the bowel. This may be brought about by the development of small nodules of malignant growth in the mesentery. In other cases it may be the result of cicatricial contraction of the mesentery, as in some forms of chronic adhesive peritonitis due to tubercle or secondary to chronic irritation of the peritoneum. Very rarely in England filaria is found as a cause of chylous ascites. It is of interest to note that in two cases at least[3] tumours of the broad ligament have been met with associated with chylous ascites. In one case recorded by Dr. J. Fenwick double papillomatous cysts of the broad ligament were found accompanied by numerous secondary growths in the abdomen and marked shrinking of the mesentery with adhesions between the parietal and visceral layers of the peritoneum. In a case recorded by Dr. F. J. Smith,[4] although tumours were present in the broad ligaments the physical signs were rather those of very chronic adhesive peritonitis, due primarily to irritation of a carcinoma in the region of the gall-bladder.

The influence of the operation in this case is a question of great interest. No satisfactory explanation has yet been given of the fact that atrophic changes undoubtedly occur in certain tumour formations as a result of abdominal section. Mr. F. Treves in recording some cases of this nature considered that the explanation may be found in questions of intra-abdominal pressure, a subject on which little is known at present. It has been observed that in most of these cases the tumours have been of connective tissue origin, to be classed therefore as sarcomata. These tumours, composed of embryonic connective tissue, have apparently in many instances a somewhat low vitality, and the slight inflammatory changes set up as the result of operation are sufficient to check active growth or even to cause their absorption. These tumours are comparable to the infective granulomata such as tubercle, which, especially in the abdomen, is well known to atrophy and even to disappear after abdominal section with or without drainage. In this present case, since four and a half years have elapsed since the operation without any increase in growth, it is obvious that the operation in some way inhibited the further development. The chylous ascites was probably attributable to a chronic adhesive peritonitis resulting from the irritation of the tumour and producing by shrinkage and adhesions obstruction of the lacteals. This process was also inhibited and now, at any rate, there is no lacteal obstruction; this is probably due to the development of fresh lymphatic channels. The growths in the abdomen have not disappeared. They are still present though causing no symptoms, and it is, of course, possible that at some future time renewed activity may commence in them.

Manchester.

[2] Transactions of the Obstetrical Society of Edinburgh, March, 1900.
[3] Fenwick: Brit. Med. Jour., vol. ii., 1891, p. 598.
[4] Transactions of the Pathological Society of London, 1891.

UNIVERSITY COLLEGE, CARDIFF.—By his will the late Professor Alfred Hughes has bequeathed several interesting specimens, models, and diagrams to University College, Cardiff.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON THE RESULTS OBTAINED BY THE ANTI-TYPHOID INOCULATIONS IN THE 15TH HUSSARS, MEERUT, INDIA.

BY A. E. WRIGHT, M.D. DUB.,
PROFESSOR OF PATHOLOGY, ARMY MEDICAL SCHOOL, NETLEY.

THROUGH the kindness of Lieutenant-General Sir George Luck, commanding the Bengal army, I am permitted to publish the following officially compiled statistical statement dealing with the effects of anti-typhoid inoculations in the case of the 15th Hussars:—

From Oct. 22nd, 1899, to Oct. 22nd, 1900.

—	Strength.	Number inoculated in England.	Admissions to hospital for enteric fever.	Deaths from enteric fever.	Number not inoculated.	Admissions to hospital for enteric fever.	Deaths from enteric fever.
Officers	22	19	0	0	3	0	0
N.C.O. and men	481	317	2	1	164	11	6
Women	36	24	0	0	12	0	0
	539	360	2	1	179	11	6

It would thus appear that the incidence of enteric fever in the inoculated was represented by 0·55 per cent. and the mortality by 0·27 per cent., while the incidence in the uninoculated was 6·14 per cent. and the death-rate 3·35 per cent.

Netley.

A NOTE ON AUSTRALIAN BITTER BARK (ALSTONIA CONSTRICTA) IN INFLUENZA.

BY J. GORDON SHARP, M.D. EDIN.

ONE of the drugs of the new Addendum to the Pharmacopœia is *Alstonia constricta* F. v. M., known as bitter bark, fever bark, or Australian bitter bark. It belongs to the same order as strophanthus—namely, *apocynaceæ* or the dog-bane order, and is a native of Queensland and New South Wales. It contains, perhaps, four alkaloids, one of which alone possesses any importance from the clinician's point of view, and it is known as alstonine. My specimen of alstonine is a dark brown amorphous body costing 3*s.* 9*d.* a gramme (15½ grains). For the present, then, alstonine is only known in the laboratory and it must become much cheaper before it comes within the domain of practical therapeutics. Both bark and alkaloid are intensely bitter and the former has been employed by foreign brewers to add bitterness to their ales. In the Australian colonies a decoction is said to be employed and is called by the name "bitters." Preparations of the bark have been employed as a general tonic and in certain stages of typhoid fever. The drug appears to act on the skin and kidneys as well as on the nervous system. The peculiar property of this bark appears to be that it resembles both quinine and strychnine. Physiologically it does not act on frogs like strychnine, but, like quinine, the alkaloid alstonine paralyses and finally kills amœba, paramœcium, and vorticella, but it is weaker than quinine.

The drug has been brought to notice by Dr. Joseph Bancroft of Brisbane, by Dr. Bixby of Detroit, U.S.A., and more recently in the *Pharmaceutical Journal* of July 8th, 1899, by Mr. J. H. Maiden, Government botanist at Sydney, New South Wales. *Alstonia constricta* must be distinguished from *Alstonia scholaris* R. Br., known as dita bark, or devil

bark, and belonging to the same order, and a native of India, of the Malay Archipelago, and of tropical Australia.

For over 18 months I have employed a tincture of the bark as a general tonic and more particularly in influenza. I start with it as soon as the feverish stage is over and give from five to 10 minims in chloroform water four times a day, preferably some little time before meals. Acting as it appears to do on the skin and kidneys it can be administered with safety even before convalescence has set in, seeing that it helps in the elimination of the poison. I can confidently recommend its use as a valuable agent in the treatment of influenza. Like every other drug it does not act in every case, but generally speaking one finds it useful. The Addendum dose of the tincture is from a half drachm to one fluid drachm. This is too much for a start, and I prefer to start with 10 minims or even in many cases with five minims, and, as I have said, chloroform water is the best vehicle.

Leeds.

DIPHTHERIA ANTITOXIN USED SUCCESSFULLY BY THE MOUTH.

BY W. CAMPBELL M'DONNELL, M.R.C.S. ENG., L.R.C.P. LOND.

IT being thought that the antitoxin of diphtheria must for successful exhibition be hypodermically injected the following may be useful.

A girl, aged 14 years, having both tonsils covered with a soft white pellicle and with no symptoms but a sore-throat, very slight enlargement of the related lymph glands, and a temperature of 38·2° C., at 11 A.M. on Nov. 12th, 1900, was given 1500 units of antitoxin by the mouth on the second day of the illness. The antitoxin had been issued by Burroughs and Wellcome in the dry state and was 20 months old. One patch yielded the diphtheria bacillus, as was certified by the medical officer of health. Within 20 hours of giving the antitoxin the right tonsil was quite clear. No application was made nor was any gargle used to the throat. On the third day there was no pellicle to be seen and at 11.30 A.M. the temperature was 35·8° C. On the fourth morning the temperature was 37° C. On the tonsil which was at first the most affected was seen a slight recurrence of pellicle. For this another 1500 units of the dissolved dry antitoxin were given by the mouth. She recovered uneventfully and as quickly as possible.

In an earlier case, where the struggling on attempting to hypodermically inject the antitoxin of diphtheria made that method impracticable, the antitoxin was rectally injected. The benefit was equal to that in the case described above. In this case, however, diphtheria was not bacteriologically proved, but clinically it was certain.

Stoke Newington, N.

A TUMOUR SIMULATING EPITHELIOMA WHICH APPEARED TO FOLLOW THE STING OF AN INSECT.

BY EDWARD J. WOOLLEY, M.B., B.C. CANTAB.

THE following case is of interest chiefly on account of the appearance of an uncommon causation, the tumour itself presenting no characteristics to differentiate it from epitheliomata from commoner causes and in more usual positions.

The patient was a labourer, 54 years of age. He was thin almost to emaciation, but said that he had always been so and that he had noticed no loss of flesh in the last few months. In July, 1900, he was stung, or bitten, on the external surface of the forearm by an insect which he described as "a green fly." A swelling of the size of a common nut appeared at the site of the sting and the patient rubbed it and attached no importance to it, thinking that it would go down. This, however, was not the case. Six weeks after the injury there was considerable itching in and about the swelling. The patient poulticed it and bathed it frequently with hot water. He noticed at this time that the swelling was getting larger. He continued his poultices and bathings until Dec. 14th, when he came to me. The tumour was then circular in shape and of about one inch in diameter, being raised above the surface of the surrounding healthy skin not more than one-sixteenth of an inch. The centre of the growth was hollowed out slightly and had the appearance of a dry ulcer. There was some hardness, but not the hardness to be expected in a malignant growth; and there was no pain. The glands in the axilla and the supra-condylar gland were not enlarged. The skin in which the growth was situated was freely moveable on the subcutaneous tissues. Although the history and the appearance of the growth were not strictly those of epithelioma, they seemed sufficiently so to call for its excision and on Dec. 20th I removed it, under ether, by an elliptical incision. I found the growth to be confined exclusively to the skin, and the tissues under it to be quite healthy and not at all adherent to the tumour. A microscopical examination showed the tumour to be a squamous-celled epithelioma with well-developed cell-nests—a typical epithelioma of the skin. I should add that no members of the patient's family on the male or female side have suffered from cancer.

Kingston-on-Thames.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

LONDON HOSPITAL.

A CASE OF HYDATID CYST OF THE LIVER RUPTURING INTO THE TRANSVERSE COLON.

(Under the care of Dr. F. J. SMITH.)

EVACUATION of the contents of a hydatid cyst of the liver into the bowel is not a common occurrence; more frequently the cyst makes an opening into the general peritoneal cavity, or through the diaphragm into the pleural cavity, or into the bronchial tubes of an adherent lung. When, however, the intestinal route is chosen by the hydatid, suppuration generally occurs in the cyst, and recovery is often complete and permanent. For the notes of the case we are indebted to Dr. H. N. Clarke.

A man, aged 32 years, was on April 2nd, 1900, admitted into the London Hospital with jaundice. He stated that he had been quite well until November, 1899, when he had an attack of "biliousness" and "constipation." Ten days later he had severe pain across the lower part of the chest; the pain was sufficient "to double him up" but did not make him vomit; the next day he became jaundiced. These signs all cleared up in about a week. Since then he had had five attacks, all the same in character—viz., pain first and then jaundice. He described his stools as being "like white putty" during the attacks. His family history was good; there was no history of syphilis or gonorrhœa. He had always been a temperate man.

The patient was admitted to hospital during his sixth attack of jaundice; he was deeply jaundiced and was much wasted, but he did not know how much weight he had lost. On examination the heart was found to be normal; there was a good deal of general bronchitis, and there was some fulness of the upper part of the abdomen. The liver was enlarged and the edge could be felt about two and a half inches below the costal margin; the organ was tender and a rounded smooth lump three inches across could be felt in the epigastrium, rather more to the left than to the right of the middle line; there was no œdema of the abdominal wall. On palpation the lump gave the sensation of deep fluctuation. The stools were white and clay-like. The urine contained a trace of albumin; the specific gravity was 1040 and bile was present.

Three days after admission—viz., April 5th—the patient had a rigor; the next day he was seen by Mr. Mansell Moullin who advised an exploratory laparotomy. It was decided that this should be done as soon as the bronchitis had cleared up sufficiently to allow the administration of a general anæsthetic. On the morning of April 7th the lump in the epigastrium was observed to be much smaller, and

later in the day some large pieces of white translucent membrane were passed in one of the stools, which had been carefully sifted since the patient's admission. No hooklets or scolices were found. The temperature ranged from 102° to 98° F. From this point the patient made an uninterrupted recovery; the swelling in the epigastrium entirely disappeared, though the edge of the liver could still be felt when the patient left the hospital. The jaundice gradually faded away, the appetite improved, and the patient rapidly put on weight again, being discharged as cured on May 8th.

Remarks by Dr. CLARKE.—Though no hooklets or scolices were found, it nevertheless seems most probable that this was a case of hydatid of the liver which suppurated. The transverse colon probably then became fixed to the under surface of the liver by adhesions and the pus was thus able to make its way out of the abscess cavity into the gut.

Remarks by Dr. SMITH.—This case is an excellent illustration of the occasional expulsion of a hydatid by nature's own means. We had fully made up our minds that surgery afforded the patient the best chance and were only waiting a favourable opportunity for operation when the rupture took place. There could be no room for doubt as to the nature of the membrane passed per rectum, as it was totally unlike any other possible membrane, though it is somewhat unfortunate that no hooklets were found. I can personally only call to mind one other case in which a hydatid has been naturally evacuated with such a happy result; that was in a boy who without any symptoms worth mentioning or physical signs either coughed up from the lung the whole of a hydatid cyst in large fragments. I showed the patient and the membrane at a meeting of the local branch of the British Medical Association in 1899. I cannot add anything of value to Dr. Clarke's account of the present case.

QUEEN'S HOSPITAL, BIRMINGHAM.

A CASE OF RUPTURE OF THE THORACIC AORTA.

(Under the care of Dr. O. J. KAUFFMANN.)

THE very interesting case recorded below is remarkable in that rupture of the aorta apparently occurred without any local disease and without any special strain. It must be remembered, however, that rupture of the aorta is often a slow process. A small fissure may appear in the internal layer of the wall as the result of some sudden increase of pressure, but the tearing of the other coats may proceed gradually and no violent symptoms may be produced until the outer coat gives way. As to the wall of the aorta in this case a microscopic examination would be needed to render it certain that no morbid change was present. Rupture of the aorta may occur in young adults, as in a case recorded by Dr. J. Lumsden,[1] where a young woman, 23 years of age, died from rupture of the aorta after lifting down a box from a shelf, and apparently, from the description, there was only a slight change in the endothelium and in the subendothelial tissue. Occasionally the aorta has been perforated by an exostosis from a rib, as in a case recorded by Mr. E. A. Lightburne,[2] where a boy, 12 years old, died from this cause with extensive hæmorrhage into the left pleural cavity. For the notes of the case we are indebted to Dr. A. Stanley Barnes, late house physician.

A groom, aged 19 years, was admitted into the Queen's Hospital, Birmingham, under the care of Dr. Kauffmann, on Oct. 11th, 1900. No history could then be obtained, as he was almost unconscious and quite unable to answer questions. The history obtained next day was as follows. He always was a "delicate" lad, but had never suffered from any illness sufficiently severe to keep him in bed. For a month before admission he had complained of an aching and sometimes shooting pain in the lower part of the chest behind (about the level of the eighth dorsal vertebra); this pain was worse on exertion, but was not accompanied by cough nor was it increased on deep inspiration. He consulted a medical man about it on Sept. 20th and was given a bottle of medicine, no physical examination being made. The pain was better on the next day and did not trouble him again for a fortnight, when on its recurrence the treatment was repeated, but this time without benefit. Despite his vague pain he kept at his work until Oct. 11th. On this day, at about 2.30 P.M., soon after his dinner, he felt very bad, the pain having suddenly become much worse. He ceased work at once and started for home, catching an omnibus a few yards away; he did not have to run for the omnibus nor had he undergone any other strain that day. Five minutes later the guard noticed that he looked very bad and called a medical man who found him in a collapsed and pulseless condition. He administered three minims of liquor strychniæ hypodermically and sent him at once to the hospital in charge of the police. Neither from the patient nor his parents could any history of an injury to the chest, either remote or recent, be obtained. He had had no cough and had never complained of indigestion. There was nothing in the family history to suggest either syphilis or tubercle; the lad himself denied exposure to syphilitic infection, and the father (with whom he lived) strongly supported his statement.

On admission the patient was a lightly-built lad with very little subcutaneous fat and looking somewhat wasted. He was very pale, the lips having a faint bluish tinge and the conjunctivæ being anæmic. He was partly conscious but could not answer questions and tossed about moaning restlessly on the couch. The pulse was rapid and very small. The abdomen was rigid but not distended nor was there any dulness in the flanks; there was considerable tenderness in the left hypochondriac region; no viscera could be palpated. The chest was slightly deformed, the sternum being too prominent. It was at once noticed that the left side of the chest hardly moved with respiration and that the palpable apex-beat of the heart was in the third interspace in the right vertical nipple line. The left axilla was dull up to the level of the fifth rib, and above this a low-pitched tympanitic percussion note was obtained, reaching as far to the right as the middle line and upwards almost to the clavicle. Behind, the lower part of the left chest was dull as high as the seventh rib, and above this the dulness shaded off gradually to a normal note at the apex. Over the very dull area no breath sounds could be heard and vocal fremitus was absent, in the hyper-resonant area faint breathing with prolonged expiration was heard, and in the partly dull area diminished rather harsh vesicular breathing was heard. Over the right lung no alteration of percussion note was observed and breath sounds though harsh were vesicular. The "anvil-sound" was well heard over the third and fourth left spaces in front. There were no heart murmurs. The pulse was 120, the respirations were 28, and the temperature was 98·2°F.

Morphia was given subcutaneously and the patient was put to bed. He slowly improved and by the next morning was able to give his part of the history recorded above, the rest of it being supplied by his mother and father. On Oct. 12th (the day after admission) he was still very weak and pale, but quite conscious and less restless. The abdomen was rigid and slightly retracted with inspiration, the recti abdominis hardening with expiration; a tympanitic note was obtained all over the abdomen. There was a little tenderness in the left hypochondrium but none elsewhere. The physical signs in the chest remained the same except that the hyper-resonant area extended to the right edge of the sternum and was now of a higher pitch than before.

As the patient was evidently suffering greatly from the increased pressure in the left side of the chest it was decided to attempt to remove some of the air and blood. A trocar and cannula were thrust through the fifth space in the left anterior axillary line—i.e., at about the upper limit of the dulness. The trocar was withdrawn and a water manometer about 10 inches high was attached to the cannula. On releasing the clamp between the cannula and the manometer the water was at once forced up to the top of the manometer tube and then overflowed. A mercury manometer was therefore substituted and indicated at once a positive pressure of 35 millimetres of mercury with expiration. About two ounces of air and a quantity estimated at from 10 to 12 drachms of dark fluid blood were then withdrawn and the intra-thoracic pressure fell considerably; as, however, the tubes became repeatedly blocked by clots of blood the cannula was removed and the wound was closed. For the same reason the final reading of the manometer, just before withdrawing the cannula, was untrustworthy. An examination of the chest immediately after the tapping showed that the hyper-resonant note was now much less high pitched and did not quite reach to the right edge of the sternum.

On Oct. 14th there was slight fever (the temperature being 99·6°) but the general condition was much improved. For the first time a heart murmur appeared, a soft whiff at the

[1] Brit. Med. Jour., Jan. 7th, 1899, p. 21.
[2] THE LANCET, Jan. 11th, 1896, p. 99.

first left cartilage close to the sternum, accompanying the first sound; and a similar one immediately succeeding the first sound in the third right space at the point of maximum heart pulsation. The rigidity and tenderness of the abdomen had almost disappeared; there was more dulness in the left side of the chest, the whole axilla being dull, but the expansion was less diminished. On the 16th the patient was much better and the tympanitic note did not transgress the middle line. The upper part of the left chest as far as the third rib gave a loud tympanitic note, thence to the fifth rib a shallow tubular note, and below that was absolute dulness. The heart remained as before, but slight epigastric pulsation—probably representing the true apex beat—was now felt. At 9.20 A.M. on the 18th, whilst apparently doing well, he cried out suddenly with pain in the left side of his chest and became blanched and covered with a cold sweat. Dr. Stanley Barnes saw him within three minutes and at once gave morphia, but he rapidly sank, dying within 20 minutes of the onset of the acute symptoms. During this time the dulness in the left side rose much higher and the discolouration around the puncture wound was noticed by the nurse to be markedly increased immediately after death.

During the whole week that the patient was in hospital he neither vomited nor expectorated anything and only occasionally did he cough—a short, harsh, dry cough. The urine once only showed a trace of albumin—i.e., the day after admission; its specific gravity was normal and no casts or blood cells were found.

Necropsy.—At the post-mortem examination, which was made on Oct. 19th, the body was found to be thin, wasted, and very pale. There was considerable subcutaneous hæmorrhage around the puncture of the 12th, extending dorsalwards from it. On opening the chest the heart was seen to lie completely on the right side, the apex being one and a quarter inches to the right and the extreme border three and a half inches away from the middle line. The left lung came to the front in the subclavicular region; below this the front was occupied by fresh gelatinous blood-clot; between four and five pints of this were removed and then the source of it was discovered in the angle between the left lung and aorta, about the level of the eighth rib. There was a large false aneurysm consisting of fibrinous blood-clot, with red gelatinous clot internal to it, lying along the inner surface of the left lung and extending upwards nearly to the apex. It arose from an oblique tear across the descending part of the aorta; the rent had evidently existed several days, since it showed signs of inflammation and repair, slight but distinct. The lower part of the false aneurysm had broken through some lung tissue; elsewhere the blood was limited by condensed fibrinous clot and some thickened pleura which limited it in every direction except below, where the hæmo-pneumothorax had occurred. There was no sign of tubercle in the lungs or vertebræ, nor were any of the latter eroded. The aorta showed no sign of endarteritis either here or elsewhere. It appeared rather wide, its circumference measuring eight centimetres near the transverse part of the arch and six centimetres near the diaphragm; its walls were healthy but rather thinner than usual. The tear extended obliquely round nearly three-quarters of the circumference of the vessel. The heart was healthy. In the left kidney were some recent yellow infarcts. The tension in the left pleural cavity was such that the left side of the diaphragm was convex downwards towards the abdomen.

Remarks by Dr. BARNES.—I have thought this case worth reporting in full on account of its extreme rarity. I have never seen or heard of another case of rupture of the healthy aorta apart from injury or sudden strain. In this case the lad and his parents were certain that no kick or other kind of injury had been received. No disease could be found in the aorta post mortem, and syphilis in the case was put out of court as far as is ever possible by a history. A second point of interest is that he should have survived for a week after an extensive rupture of such a large artery; presumably a clot had formed at the site of the laceration and for the time being prevented further hæmorrhage, but after the arterial system had regained its tone a slight movement or temporary increase in the blood-pressure would be enough to wash away the feeble barrier and allow fresh hæmorrhage to occur.

Evidently one reason why the plug in the lacerated aorta remained in its place so long was that the difference between the pressures in the aorta on the one hand and in the pleura on the other was much diminished by the great increase in intra-thoracic pressure occasioned by the sudden large hæmorrhage, as well as by the great lowering of arterial blood-pressure which also accompanies a large hæmorrhage. The pressure recorded in the chest 20 hours after the hæmorrhage occurred was 35 millimetres of mercury during expiration (about 19 inches of water), which is, I believe, almost the greatest intra-pleural pressure on record. It is interesting to note that no heart murmur developed at the time of the dislocation of the heart but could only be heard after three days had elapsed; this fact is in keeping with many other observations of a similar nature made at the Queen's Hospital and elsewhere.

The preliminary diagnosis of hæmo-pneumothorax was easy and was confirmed by the aspiration of Oct. 12th, but the ultimate diagnosis—the cause of the condition—could not be definitely made. The diagnosis which found most favour was that of ruptured aneurysm of the aorta, but tuberculous, malignant, or other erosion of a large vessel in the lung or pleura was also thought to be a possible cause. Perforating gastric ulcer (adherent to and bursting through the diaphragm) was at first sight simulated, the tenderness and rigidity of the left hypochondriac region being very marked; but the lack of any history suggestive of gastric ulcer, the prominent signs of large internal hæmorrhage, and the nature of the fluid aspirated seemed together sufficient to negative this diagnosis. With regard to aneurysm our chief difficulties were the absolute denial of syphilis, the youth and good arterial condition of the patient, and the presence of pneumothorax; the last-named sign was explained post mortem by the extensive ploughing up of lung tissue by the escaped blood. The main arguments against pulmonary disease were: (1) the rapidity of the hæmorrhage, showing that there must have been a large erosion of a large vessel; and (2) the lack of any sign or history of lung trouble, there having been no hæmoptysis even after the pneumothorax had occurred. I need hardly add that the diagnosis of ruptured healthy aorta was not considered. The ruptured portion of the aorta is now preserved in the Pathological Museum of the University of Birmingham.

I have to thank Dr. Kauffmann for permission to publish this case and for much valuable help in the preparation of these notes.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

An Address from the Society to King Edward VII.

A SPECIAL general meeting of this society was held on Feb. 5th, Dr. F. W. PAVY, the President, being in the chair.

The PRESIDENT explained that the meeting was convened to consider the presentation of an address to the new sovereign by the society that was instituted now close on a century ago for the cultivation and promotion of medicine, surgery, and allied branches of knowledge, and received in approval of its laudable design from King William IV. a Royal Charter of incorporation in which the King declared himself, and his successors if they should think fit, the patron of the society. On the late beloved Queen's accession to the throne she followed in the footsteps of her predecessors and became the patron and by her special sympathy helped the achievements of medical art. The society had met to give outward expression to what was inwardly felt by all in an address of condolence, associated with an expression of hope that His Majesty would, in accordance with the terms of the Charter, graciously think fit to declare himself the patron of the society.

Mr. PEARCE GOULD, as secretary, then read the text of the address, the members all standing.

The PRESIDENT then called on Lord Lister to move the adoption of the address.

Lord LISTER felt it to be a great but an inexpressibly melancholy honour to propose the adoption of the address. In common with all the vast empire, and indeed with the whole world, they lamented the loss of a Sovereign pre-eminent in wisdom and in virtue, whose long reign was one constant, consistent effort to promote the good of her people and of all mankind. How signal had been the success with which that effort was crowned was evidenced by the

tributes to her greatness and goodness that had been pouring in from all quarters at home and abroad. It was fit that the only Royal medical society of the metropolis should give expression to their sense of grief at her death. The medical profession, whose object was to prevent or relieve the physical ills of mankind, appealed always to Her Majesty's warm and sympathetic heart, and if it were suitable to speak of loyalty of a Sovereign to subjects they might say that the medical profession never had a more loyal mind than it had in Queen Victoria. Those of her medical officers who had been privileged to attend upon Her Majesty would speak with one voice to that effect if they had been all alive to that day. Nothing could more strongly illustrate her complete confidence in her medical advisers than her submission to chloroform at a time when its use in midwifery was by no means generally recognised and when in influential quarters it was strongly opposed. Lord Lister believed that he happened to be the only person who ever exercised upon her sacred body the divine art of surgery. The occasion was a most critical and anxious one, but nothing could exceed her kindness and consideration, while she treated him with queenly dignity. Thus, the medical profession felt, perhaps, more than others the greatness of the loss they had sustained. There was, however, another side to the address. In the night of their deep sorrow they could see a most auspicious dawn. The King in his first Council meeting promised in words characterised equally by dignity and pathos that he would tread in the footsteps of his beloved mother, and that promise he had repeated in his message to his entire empire. Various kindly acts which he had been doing in the last fortnight indicated that the King had inherited the grace and tact of the departed Sovereign and it was known from his past life that he honoured and loved the medical profession—witness all that he had done for Guy's Hospital and witness the "Prince of Wales's Fund" in the prosperity of which he was known to take the keenest interest. Whilst, therefore, all condoled with him in his grievous sorrow they gladly congratulated him on his accession to his ancestral throne, confident indeed that he would be found walking in the footsteps of his mother, who as they believed had gone to her reward.

Dr. SYDNEY RINGER (in the absence of Sir WILLIAM CHURCH) seconded the motion for the adoption of the address.

The motion was carried unanimously.

PATHOLOGICAL SOCIETY OF LONDON.

Relative Agglutination Phenomena seen after Immunisation against the Typhoid Bacillus and its near Allies.—Agglutination of Plague Bacilli.—Formation of Urobilin from Bilirubin.—New Pathogenic Member of the Blastomycetes.—Bacillary Forms of Streptococci.

A MEETING of this society was held on Feb. 5th, Mr. W. WATSON CHEYNE, the President, being in the chair.

Dr. F. W. ANDREWES and Dr. H. A. SCHÖLBERG made a preliminary communication as to their Experiments on the Relative Agglutination Phenomena seen after Immunisation against the Typhoid Bacillus and its near Allies. Dr. Andrewes pointed out the importance of the quantitative factor in all observations on the power of agglutination; the degree of dilution in which the serum exhibited a clumping action had an important bearing in diagnosis. There were also theoretical points which might be elucidated by attention to the quantitative factor. It was desirable to learn the origin of the bacterial product which evoked the power of agglutination and the relationship between the powers of a given serum to clump the different members of the colon group of bacilli. Experimental immunisation against different members of the group offered the best chance of solving such problems. The questions attacked were: (1) Was the bacterial product which evoked the agglutinative reaction resident in the soluble toxins which could be filtered off from the bacterial culture or in the bacterial protoplasm itself? and (2) Was the reaction evoked by a product common to the different members of the colon group or by a product peculiar to each species? Klein and others had shown that there were intra-cellular poisons common to various species of bacteria; it was also clear that each produced its own specific toxins. In the experiments carried out (almost entirely by Dr. Schölberg) the aim was as accurate a quantitative estimation of the agglutinative powers as could be attained, and the results were exhibited graphically on plotted charts. The standard which was adopted was the upper limit of dilution which gave an approximately complete reaction within a time limit of one hour in living emulsions of bacilli prepared from recent gelatin cultures. The results of the experiments so far as they had yet been completed were as follows: (1) the bacterial product which evoked the agglutinative power resided in the bacterial protoplasm rather than the soluble toxin; (2) a share in the result was borne by a protoplasmic poison common to the bodies of allied bacterial species (for example, an animal immunised against the bacillus typhosus furnished a serum which would in lesser degree clump bacillus coli communis and Gärtner's bacillus); (3) in addition to this some specific intra-cellular substance was present which excited a higher degree of agglutinative power upon the particular species employed in the immunisation; and (4) the rabbit was found to be a more suitable animal than the guinea-pig for the development of the agglutinative power. Dr. Schölberg described in fuller detail the methods which he had employed in carrying out the experiments and the precautions which he had taken to avoid errors in the results. The toxin for the animal experiments was prepared in the usual way from broth cultures three months old and cultivations were made from it before inoculation to prove that the fluid was sterile, which was always the case. The bacterial injections were made from bacteria grown on dry agar entirely free from expression water. A suspension of a variable amount of an agar culture was made in sterile saline solution and heated to 70° C. for 15 minutes. Cultivations made from the bacteria injected were sterile. Broth cultures were not used in making the emulsions for agglutination tests, as these were unreliable. Gelatin cultures from 48 hours to 120 hours old were uniformly used for the preparation of the emulsions, which was done with sterile normal saline solution. The charts shown showed that the first agglutination occurred on the fifth or sixth day after inoculation with Professor Wright's sterilised typhoid broth cultures, bacillus coli and Gärtner appearing a day later as the typhoid maximum agglutination rose. The coli and Gärtner curves ran together, but independently of the typhoid agglutination curve. Inoculations in animals with pure typhoid toxin gave an average maximum dilution agglutinating power of 1 in 40 for typhoid, and coli and Gärtner were uniformly negative at that index—on one occasion only, when the typhoid index was 1 in 100, did coli and Gärtner agglutinate, and then only at a dilution of 1 in 10. Using the bacteria only in the case of typhoid the first agglutination appeared in the rabbit on the fifth day after inoculation, and bacillus coli and Gärtner on the sixth day. A maximum dilution of 1 in 500 for typhoid was represented by 1 in 50 for bacillus coli and Gärtner on the ninth day. Using guinea-pigs the reactions were not so high and showed that for the Gärtner bacillus when inoculated the reaction for typhoid and bacillus coli was uniformly negative, while the maximum agglutination for the Gärtner reached as high as 1 in 130.—Dr. HORTON-SMITH, Dr. WILLIAM BULLOCH, Dr. W. C. C. PAKES, Mr. S. G. SHATTOCK, and others joined in the discussion, and Dr. ANDREWES and Dr. SCHÖLBERG replied.

Dr. E. KLEIN made a communication on the Agglutination of Plague Bacilli. The difficulty of obtaining plague bacilli in emulsion was dealt on. Saline solution was the only medium with which he had succeeded. He had found that ordinary bouillon caused agglutination. Serum of rats that had been treated with Haffkine's serum and also that of rats that had been inoculated with plague bacilli and had recovered also agglutinated.—Mr. SHATTOCK observed that salt solution when added to blood prevented the corpuscles from forming rouleaux.

Dr. ARCHIBALD GARROD and Dr. J. H. DRYSDALE in a preliminary communication on the formation of Urobilin from Bilirubin showed that the process was far more obscure than was now generally taught.

Dr. KLEIN described a New Pathogenic Member of the Blastomycetes which he had isolated from milk. When injected into guinea-pigs subcutaneously it caused gelatinous tumours and glandular swellings. When injected intraperitoneally nodules in the liver, lung, pancreas, ovary or testes, and intestine followed. All the lesions contained vast numbers of the micro-organism and in the tissues some of the latter assumed hypha-like forms which were absent in the cultures. These blastomycetes stained readily and so differed from those described by Fullerton. They grew

better on alkaline than on acid media and in that differed from those described by Sanfelice, Roncali, and Plimmer.

Dr. M. H. GORDON drew attention to a Morphological Feature exhibited by Several Streptococci isolated from the Normal Throat to form here and there an individual that in shape resembled a bacillus more closely than a coccus. It was stated that in some cases these bacillary individuals were apt to bear a morphological resemblance to forms of the diphtheria bacillus, for which they might conceivably be mistaken unless due care was exercised. It was remarked that the significance of the phenomenon could only be properly understood by making systematic comparative observations in the course of which the other biological characters of these organisms were also taken into account. Lantern slides were shown of streptococci exhibiting bacillary forms.

Dr. ANDREWES and Dr. W. J. HORNE demonstrated the Collodion Method applied to Paraffin Sections for Class Purposes.

OPHTHALMOLOGICAL SOCIETY.

So-called Paresis of Divergence.—Eclipse Blindness.—Bullet Injury of the Occipital Lobes, with Loss of the Lower Half of Each Visual Field.

AN ordinary meeting of this society was held on Jan. 31st, Mr. G. ANDERSON CRITCHETT, the President, being in the chair.

Dr. G. A. BERRY read a paper on So-called Paresis of Divergence. He cited cases and showed diagrams in support of his theory that the cause was really overaction of convergence rather than paresis of divergence. In cases where there was doubt whether strabismus fixus was present or not the diagnosis was much facilitated by taking hold of the eye with a pair of fixation forceps and forcibly rotating the globe outwards. If this could be done it was clearly not a case of strabismus fixus, while if it were impossible then it proved that it was a true case. He also read notes on some rare forms of non-paretic, non-concomitant squint in which, through faulty innervation, muscles not usually associated worked together, such as the internal rectus of an eye with the superior rectus of the other.

Dr. RAYNER D. BATTEN reported a case of Eclipse Blindness with Thrombosis of a Retinal Artery and Hæmorrhage into the Vitreous. The patient was a woman, aged 28 years, who watched the eclipse on May 28th, 1900, without any other protection than that offered by screwing up the eyes and looking between her fingers held close together. Immediately afterwards she noticed that things looked black and the next morning she found that she could only see "portions of things." She was first seen on June 6th and was found to have lost the lower half of the field of vision in the left eye. The vision was $\frac{6}{18}$. Above the optic disc a white patch was seen, possibly an absorbing hæmorrhage, while the hazy and œdematous retina obscured the view of the disc and retinal vessels. The œdema increased until June 20th and then rapidly cleared, ultimately leaving a patch of choroido-retinitis above the disc. One of the upper retinal arteries was occluded and the others were reduced in size. The vitreous opacities cleared and the macula was unaffected. The vision improved to $\frac{6}{12}$ in the injured eye. In the right it was $\frac{6}{6}$. The patient was in good health and no other cause could be found for the injury except exposure to direct sunlight.—Mr. J. B. LAWFORD had observed three cases of eclipse blindness, but there were no ophthalmoscopic changes. In all, however, the scotoma had persisted with some deterioration of vision.—Mr. TREACHER COLLINS related two cases. In one the margins of the discs became very white and there was a central scotoma. In the other the vision improved, but the fields were greatly contracted for white and those for colours were very much smaller.—Mr. W. H. H. JESSOP had published three cases. In all the vision improved, though there was a slight permanent scotoma.—Mr. T. J. BOKENHAM gave details of two cases, in one of which there were retinal hæmorrhages. The vision improved from $\frac{5}{60}$ to $\frac{6}{12}$, but there was a marked central scotoma.—Dr. G. A. BERRY thought the scotomata were usually permanent in the worst cases. The general public was not sufficiently aware that blue glasses were worse than useless when looking at the sun and at bright lights. It was the blue and violet rays which did all the damage. In Russia red or yellow glasses were employed.—Dr. JOHNSON TAYLOR, considering the marked way in which Dr. Batten's case differed from eclipse blindness, asked if there was at any time keratitis punctata, as he thought the whole condition might be due to irido-cyclitis.—Dr. BATTEN, in reply, stated that no keratitis had been seen and he could find no cause for this condition other than that given.

The PRESIDENT described a case of Bullet Injury of the Occipital Lobes with Loss of the Lower Half of each Visual Field. The patient, a captain in the British army, was struck by a bullet (probably Lee-Metford) while turning to address his men on the left. The pain was likened to that caused by a blow from a racquet-ball. He lost his sight at once but did not become unconscious for half an hour. He remained comatose for eight days and on recovering consciousness was still blind, but a week later was able to distinguish the flash of a lighted match. He was trephined on the day following the injury, he believed at both the point of entry and exit of the bullet. The trephine aperture at the site of entry, marked by a distinct depression, was situated two and a quarter inches above Reid's base line on the right side in a vertical line above the posterior border of the mastoid process and one and a half inches below and slightly behind the parietal eminence, four inches from the external occipital protuberance. The aperture of exit was half an inch to the left of the middle line, two inches above the protuberance, and one inch below the lambda. When examined the pupils were active directly and consensually, the fundi were normal, and the vision in each eye was $\frac{6}{6}$ and Jaeger 1. The patient had been prevented from entering the navy by colour-blindness. The lower half of each visual field was lost almost completely, the line of limitation being irregular. This feature was the chief point of interest as it afforded evidence of interference with the cortical visual centres. The bullet must have traversed the skull horizontally from before backwards and from right to left, and brain substance had been recognised at the time of injury. The course of the bullet must have been through the anterior part of the right middle occipital convolution, injuring also the right and left cuneus. The sudden impact probably caused temporary paralysis of the visual centres from concussion. That there was a considerable extravasation of blood was proved by the rapid onset of unconsciousness, and this or the actual injury caused by the bullet may account for the persistent failure of the lower half of the visual fields, though on the latter supposition it is difficult to explain the exact symmetry of the visual loss. In a recent number of THE LANCET[1] Mr. Page had published a case of injury to the right occipital region attended with homonymous hemianopsia on the left side, complete at first, but subsequently recovering. No optic neuritis could be detected in either of these cases.—Mr. FISHER gave details of two cases of similar character to that cited, the lower half of the fields being lost—altitudinal hemianopsia.

The following cases and card specimens were shown:—

Mr. W. H. H. JESSOP: (1) A case of Tuberculosis of the Conjunctiva; and (2) a case of Probable Distension of the Frontal Sinus in a girl, aged 10 years.

Dr. W. A. STIRLING: A specimen of Primary Sarcoma of the Orbit.

Mr. W. LANG: New Growth on Ocular Conjunctiva, probably a papilloma.

Mr. J. B. LAWFORD: Concussion Injury of the Eyeball with a "hole" at the macula.

Mr. W. T. LISTER: Spreading Opacity of the Cornea following herpes ophthalmica.

Dr. W. C. ROCKLIFFE: Sections of a Conjunctival Growth. The nature of this being doubtful it was proposed to refer it to a committee.

KIDDERMINSTER MEDICAL SOCIETY.—A meeting of this society was held on Jan. 18th, Mr. J. Lionel Stretton, the President, being in the chair.—The President referred to the death of the late Queen and proposed a resolution of condolence.—The President read notes of three cases of Resection of the Intestine. In the first case the patient was a man, aged 64 years, who had been ruptured for many years, the rupture being always down and no truss being worn. Six months previously he had an attack of obstruction which was relieved. The present attack commenced seven days before admission to hospital; the patient refused to submit to operation at an earlier period. Under ether the sac was opened up and two strictures were found, one at the neck and

[1] THE LANCET, Jan. 19th, 1901, p. 156.

the other about the centre, the latter being so sharp and tight that it had reduced the calibre of the bowel to the size of a tobacco-pipe stem, and had so thinned the walls that fæcal matter was already escaping. The strictured portion of the bowel was removed and the ends were approximated with Murphy's button; the sac and testicle were removed. The man was discharged within a month well; the button was not found but soon after he left the hospital a hard motion was passed which was not examined. The hernia had not been down since. In the second case the patient was a female, aged 65 years, who had suffered from umbilical hernia for many years, no support being worn. She was very fat and her capillary circulation was bad. Strangulation took place 24 hours before admission to hospital. Ether having been administered an incision liberated several coils of stinking gangrenous intestine. 38 inches of the small intestine were excised and the ends were approximated with Murphy's button. The operation lasted about one and a half hours. She suffered considerably from shock and died six hours later in spite of saline transfusion and hypodermic injections of strychnine, &c. Nothing unexpected was discovered at the necropsy; the intestine was quite secure and the peritoneum was healthy. In the third case the patient was a female, aged 44 years, who had suffered from umbilical hernia for many years, but refused to wear a truss, as she was always able to return the hernia until six months ago, since which time a small portion had been irreducible. She was stout and plethoric with bad capillary circulation. Strangulation had existed for six days. Under ether, an incision disclosed a mass of adherent omentum and a coil of gangrenous intestine which had given way in three or four places and allowed free escape of fæcal matter. About eight inches of small intestine were removed and the ends were approximated with Murphy's button and returned into the abdomen. The operation lasted about one and a half hours. Death took place about 54 hours afterwards. At the necropsy the Murphy's button was found to be securely fixed and had not allowed any oozing; there were no signs of peritonitis.—Dr. Evans read notes of a case of Cancrum Oris. The patient was a male child, aged four years, who had had measles five weeks previously. The left cheek was considerably swelled, discoloured, and hard, and there was a slough of the size of a shilling inside the cheek opposite the last molars. There was much salivation, the breath was very offensive, and the pulse was weak and rapid. Under chloroform the sloughing area was well cauterised with Paquelin's cautery and afterwards swabbed out with fuming nitric acid; this treatment was repeated ten days later and again in four days, and again after the lapse of seven weeks. The child was now showing signs of improvement.—Dr. E. A. Naylor read notes of a case in which the President had removed a portion of the lower jaw for malignant disease.—The President read a very amusing paper on the Humours of the Profession and the meeting terminated.

Reviews and Notices of Books.

Bacteriology in Medicine and Surgery: a Practical Manual for Physicians, Health Officers, and Students. By WILLIAM HALLOCK PARK, M.D., Associate Professor of Bacteriology and Hygiene, University and Bellevue Hospital Medical College, and Assistant Director of the Research Bacteriological Laboratories of the Department of Health, City of New York. Assisted by A. R. GUERARD, M.D., Assistant Bacteriologist, Department of Health, City of New York. London: Henry Kimpton. 1900. Pp. xi.–693. Price 15*s*.

THE student of bacteriology has before him at the present day a considerable number of text-books, all more or less on the same lines, moderate in price and not too voluminous for his needs. Future editions will demonstrate which of these works are to survive in the struggle for existence. So many of them are of merit that the struggle must be a keen one, but amongst those which should be able to hold their own we are inclined to place the present volume. Professor Park's name is familiar in America, and some of his work is well known in this country. His wide experience in the practical applications of bacteriology, gained in the Research Laboratories of the Health Department of New York, has combined with his teaching experience and his wide knowledge of scientific literature to render his book one of exceptional usefulness. If the city of London had the wisdom and foresight to endow well-equipped research laboratories in science on the same scale as the city of New York has done a valuable impetus would be given to the scientific study of medicine and public health.

There is little in the scope and arrangement of the book that is novel or demanding of special comment. It is simply an ordinary text-book and it stands or falls just in so far as it fulfils ordinary requirements; we venture to think that it fulfils these very adequately. Like all text-books it is essentially a compilation, amplified as well as verified by the experience of the writer. So far as it is a compilation it strikes us as essentially an American and a German one—that is to say, we do not find references to the English or the French schools of bacteriology quite so numerous as they perhaps deserve. To take a single instance, we find in the chapter on Small-pox no reference whatever to the observations of Klein and of Copeman on the spore-bearing bacillus which they have demonstrated in the vesicles of variola and vaccinia, and no detail at all as to the successful production by Simpson, Klein, and others of typical vaccinia by the passage of variolous lymph through a series of calves. It is nevertheless true that the admirable acquaintance with German literature possessed by the writer renders his book so full and complete on the majority of subjects that few faults of omission can be ascribed to it. The experience of the author likewise stands him in very good stead, as is well shown in the chapter on Diphtheria, which appears to us as excellent a presentment of the subject in its most modern aspects as we have ever read. Nevertheless, we must dispute the statement that no authentic cases of the transmission of diphtheria from animals to man are on record. Mr. W. H. Power's observations on milk diphtheria go far to incriminate the cow in certain cases, and Dr. Bruce Low has brought forward facts to show that cats may transmit the virus to human beings.

The chapter on Tuberculosis is also one which appears to us of special excellence and great practical value, though more detail might have been given as to the methods employed by Koch in the manufacture of his new form of tuberculin. The section on the bacteriological examination of water is disappointing, and the statement that we can only examine at one time a few cubic centimetres of water by bacteriological methods is quite erroneous since the introduction of the method of concentrating the bacteria from a litre or more of water into a small compass by the use of a Pasteur filter. No mention is made of Parietti's method or its modifications in examining water for typhoid or colon bacilli. In the account of flagellum staining the only method described in detail is a modification of Löffler's somewhat cumbrous original one. Van Ermengem's infinitely better method, though mentioned, is not described, nor are any of the short and easy methods of recent introduction, such as Pitfield's or Muir's, even alluded to. A moderate number of misprints are present; in particular we would call attention to the substitution of "symmetrically" for "hermetically" on p. 23. There are two good coloured plates and 87 figures, mostly reproductions of microphotographs. These are not so good as might have been expected; the figures of flagella in typhoid bacilli are exceptionally poor.

If we have called attention to certain points in which we conceive Professor Park's book might be improved we have done so from a sense of duty and with the full knowledge that it is an easy thing to pick holes in another man's work. It is a much more pleasant task to congratulate the writer on

the general excellence of his achievement, which we can do in all sincerity. It may safely be recommended to all whom it may concern as an unusually full and complete guide to the medical aspects of bacteriology, and it owes a good deal of its value to its eminently practical character.

A Manual of Medicine. Edited by W. H. ALLCHIN, M.D., F.R.C.P. Lond., F.R.S. Edin., Senior Physician and Lecturer in Clinical Medicine, Westminster Hospital; Examiner in Medicine in the University of London and to the Medical Department of the Royal Navy. Vol. II. General Diseases—continued. London: Macmillan and Co., Limited. 1900. Pp. 380. Price 7*s.* 6*d.*

THE second volume of this manual contains a large number of papers on varied subjects: for example, diseases caused by parasites and by poisons introduced into the body, primary perversions of general nutrition, and diseases of the blood.

The section on Diseases caused by Parasites is under the joint names of Dr. T. W. Shore and Mr. James Cantlie and contains good descriptions of all the chief forms of parasites that infect man, especial attention being given to the Cestoda and Hæmatoda. Under "Diseases Determined by Poisons Introduced into the Body as Such," we find articles by Dr. W. H. Allchin and Dr. G. V. Poore on Food Poisoning, Alcoholism, Morphinism, Cocainism, the Metallic Poisons (phosphorus, arsenic, mercury, and lead), Various Gases, Sewer Gas, and Serpent's Venom. These articles are of varying merit, some being very good, whilst others, notably that on alcoholism and morphinism, are not up to the standard of the work in general. Some of the contributions, too, on "Autogenetic Poisons" show signs of hurried preparation. Dr. Allchin's remarks on "Retrogressive Changes—Necrobiosis" are very interesting and would give a student a comprehensive idea as to the nature of atrophy and of fatty and lardaceous degeneration, while we particularly note the sub-section on "Senility" as containing much useful information. Dr. W. S. Lazarus-Barlow is responsible for the section on "Inflammation and its Sequels." This is by no means an easy subject to write upon, but the author has succeeded in presenting his readers with a capital summary of our present knowledge of inflammation, its signs, causes, varieties, and sequels. Professor J. Rose Bradford writes an excellent series of articles on the General Physiology and Pathology of Ductless Glands, on Cretinism and Myxœdema, Exophthalmic Goitre, and Addison's Disease.

The section on Diabetes Mellitus is by Dr. Bertrand Dawson. In speaking of the pathology of the disease he draws attention to the fact, which has only comparatively recently been fully recognised, that in patients afflicted with diabetes mellitus the power of sugar destruction is less than in health. This should have an important bearing on treatment. Dr. Dawson's remarks on treatment show sound judgment and the most modern views. He points out that the removal or retention of carbohydrates in a diabetic diet is a matter of moment and attended with disadvantages as well as advantages. The disadvantages are the difficulty of maintaining nutritive equilibrium and the ill-effect on appetite and spirits of the patients of the withdrawal of some of the most cherished articles of food, especially bread. A large number of diabetics can take some carbohydrates greatly to their advantage, and the amount must be accurately ascertained by frequent examinations of the urine. Dr. Dawson likewise contributes the article on Rheumatoid Arthritis and gives a clear and comprehensive account of this condition. We are glad that he has only given one synonym—viz., arthritis deformans—and discards the terms "osteo-arthritis" and "rheumatic gout," the last named especially being open to numerous objections.

A sound disquisition on Gout is from the pen of Dr. A. P. Luff, whose observations on treatment are particularly worthy of note, for many useful hints will be found in them, not only in reference to the treatment of the disease as it usually manifests itself, but also as regards the management of the irregular forms. Dr. Louis Jenner contributes an interesting account of the Blood under Normal Conditions and the Methods of Examining it Clinically. This subject is just now commanding a good deal of attention and Dr. Jenner's comments will be read with much interest.

One of the best sections in the book is that on Diseases of the Blood, by Dr. Sidney Coupland. From the time when Dr. Coupland delivered the Goulstonian Lectures on Anæmia in 1881 he has been a recognised authority on the variations of blood in disease, so that his contribution has the value of being the outcome of many years of personal observation. The anæmic group of blood diseases and the hæmorrhagic group are fully described, their pathology, clinical character, and treatment being considered at length. Under the first-named group Dr. Coupland places chlorosis, pernicious anæmia, leukæmia, splenic anæmia, and Hodgkin's disease; and under the second hæmophilia, purpura, scorbutus, and paroxysmal hæmoglobinuria. So much has recently been added to our knowledge on the pathological conditions of the blood that a summary of the investigations of various authorities is most welcome, and when to such a summary there is added a large clinical experience we obtain a really valuable monograph.

Other contributors to this volume are Dr. Bertram Abrahams, who writes on Myalgia and Myositis Ossificans; Dr. J. A. Coutts, whose article on Rickets is full of useful knowledge; and Mr. Raymond Johnson, who is the author of several good sections, for example, the articles on Acromegaly, Hypertrophic Pulmonary Osteo-arthropathy, and Osteomalacia.

This volume contains an account of many morbid conditions which are but very briefly touched upon in most text-books, and the efforts of the editor and his contributors will, we hope be duly appreciated by the medical profession.

The Histology of the Blood, Normal and Pathological. By P. EHRLICH and A. LAZARUS. Edited and translated by W. MYERS, M.A., M.B., B.Sc.Camb., with a Preface by Professor G. SINS WOODHEAD. Cambridge University Press. 1900. Pp. xiii.-216. Price 5*s.*

THERE is probably no scientific subject to which Professor Ehrlich has devoted his serious attention without making brilliant contributions to our knowledge. Modern hæmatology is under a deeper obligation to him than to any other worker in the field, for his classical researches upon the varieties of leucocyte present in the blood, based upon the methods of differential staining which he devised, form the foundation upon which all subsequent progress has rested. This book is a translation of the first part of "Die Anæmie: Nothnagel's Spezielle Pathologie und Therapie, vol. viii.," and the late Dr. Walter Myers has carried it out under the personal supervision of Professor Ehrlich and has included in it certain valuable alterations and additions.

Dr. Myers is the brilliant young physician who recently lost his life at Para whilst making investigations for the Liverpool School of Tropical Medicine into the etiology of yellow fever. The service that he has rendered to English readers by this translation is a very great one. The work has been recognised in its German dress as one of standard authority and it has lost none of its value in the translation. In spite of its small size it contains a more complete, thorough, and scientific account of the blood than any work in the English language with which we

are acquainted, and it has, above all, a certain quality to which we can apply no better word than "fundamental." That is to say, it always strives to exhibit as clearly as possible the principles which lie at the root of the matter under consideration. For this reason, even where the root of the matter is as yet unattained, the book possesses a faculty too often missing in more pretentious works—that of a suggestiveness which should go far to stimulate further work on the lines laid down.

The following is a brief outline of the manner in which the subject is treated. The introduction deals with the clinical investigation of the blood—i.e., with the volume of the blood, the number of corpuscles, the specific gravity, alkalinity, coagulability, and kindred matters. The morphology of the blood is then described in detail and the methods of its investigation are fully dealt with; the theory of blood-staining is explained in a most luminous manner. The normal and pathological histology of the red corpuscles is then discussed, after which comes the most important and the largest section of the book—that devoted to the leucocytes. Each form of leucocyte is described in full and its place of origin carefully considered. Naturally the nature of the cell granules receives the attention due to so important a subject. Next comes a consideration of the conditions under which the leucocytes are increased in number, perhaps the most suggestive section in the whole work. After discussing the biological importance of leucocytosis, its forms are dealt with under three headings—first, polynuclear neutrophil leucocytosis; secondly, polynuclear eosinophil leucocytosis; and thirdly, leukæmia, which is described as a "mixed" leucocytosis. It has been customary to regard leukæmia as a thing different in its essence from ordinary leucocytosis, but it is impossible to read these pages without feeling the force of the arguments showing its correspondence with the active leucocytoses. After a short account of leucopenia a bibliography and index conclude the book.

The work is illustrated by three plates, uncoloured, but good. They illustrate, however, comparatively unimportant points in the histology of the blood. It would, in our opinion, have been a great gain to the student had the descriptions been illustrated more copiously by good coloured plates. We know, however, the enormous expense of such illustrations. The translation is admirable in style and reflects great credit on the late Dr. Myers—indeed it is as readable as if originally written in English. There are too large a number of misprints. The preface by Professor Sims Woodhead is an excellent introduction to the subject and we cannot doubt that, as he says, this book must be looked upon as influencing the study of the blood more than any which has yet been published.

Essentials of Practical Bacteriology. By H. J. CURTIS, B.S., M.D. Lond., F.R.C.S. Eng. London: Longmans, Green, and Co. 1900. Pp. 291. Price 9*s*.

THIS is an elementary laboratory book for students and practitioners which in its plan and general "get up" reminds us of a similarly entitled book by Professor W. D. Halliburton, "The Essentials of Chemical Physiology." It belongs to the excellent series of "Essentials" published by Messrs. Longmans for students and practitioners. Primarily the work is intended for those seeking the diploma in public health, but we are glad to find that the author, without unduly burdening the volume, has paid attention to the special needs of clinical bacteriologists. A considerable amount of detail has been given in dealing with certain subjects, notably ringworm and cancer, and the author thinks some objection may be taken to his more ample treatment of these topics. He has, however, made exceptions in these cases in the hope that the chapters will provide a starting point for research in the directions indicated by the application of modifications of methods and media already known. Accordingly this portion of the subject is intended for advanced students only. The work is divided into Part I., dealing with the preparation, or manufacture as the author prefers to call it, of the nutrient media and with general technique, and Part II., dealing with the systematic study of the micro-organisms, both non-pathogenic and pathogenic. The book is eminently practical in the treatment of the subject and should do good service in placing before bacteriological students the best and most reliable methods of practice. Illustrations of the various organisms are given and examples of staining are also given which are admirably reproduced. On page 51 the example is spore staining by Möller's method. On page 141 the example is tubercle bacilli in a centrifugalised deposit from urine stained by Ziehl-Neelsen's method. The examples on page 151 are in the one case bacillus lepræ in discharge from an ulcer on the great toe, and in the second, bacillus lepræ in lepra cells in skin, both stained by Ziehl-Neelsen's method. We are glad to find that the author has in Lesson XXIII. given the bacteriological methods for testing antiseptics and disinfectants. The appendices deal with the requisites for a good bacteriological microscope, the methods for fixing, hardening, and imbedding tissues; and lastly, two useful tables for reference and a recapitulation of facts. The series of lessons is good, and the whole work we have found most instructive upon the applied side of the subject.

A Manual of Clinical Diagnosis by means of Microscopic and Chemical Methods, for Students, Hospital Physicians, and Practitioners. By CHARLES E. SIMON, M.D., late Assistant Resident Physician, Johns Hopkins Hospital, Baltimore. Third edition, thoroughly revised. Illustrated with 136 Engravings and 18 Plates in Colour. London: Henry Kimpton. 1900. Pp. 558.

IN reviewing the third edition of a work no words are required from us to explain its general scope. The fact that the first edition was published only in 1896 is sufficient proof that the author's efforts to supply a want for a book of this nature have met with favourable recognition. Since Dr. Simon first wrote this manual great changes in regard to clinical laboratories have taken place. Such institutions are now numerous and are regarded as being adjuncts to medical education as important as chemical and pathological laboratories, and the classes in "practical medicine" at the various schools include instruction in the use of the microscope and chemical methods. A study of the volume will show that in this edition the work has been thoroughly revised, much new matter added, whole sections have been re-written, methods rendered obsolete by the rapid advances of the science have been replaced by those representing the latest progress, and new illustrations added when necessary.

The first chapter describes the Examination of the Blood, and our remarks are exemplified by a perusal of its 121 pages. All the methods employed are fully up to date; for example, the estimation of the amount of iron in the blood in Jolles's ferrometer is fully given. The account of the microscopic examination of the blood is also worthy of praise. We would especially draw attention to the account given of the behaviour of blood corpuscles towards the anilin dyes. The anæmic or polychromatophilic degeneration of the red corpuscles is duly considered and a beautiful plate is given illustrating the blood of pernicious anæmia. The differentiation of leucocytes, to which so much attention has recently been directed, is also well explained, although the matter is rather a complicated one. The method of applying Widal's serum test is duly given, Dr. Simon giving as his opinion that the test "is a most valuable aid in the diagnosis of typhoid

fever, but cannot be relied upon to the exclusion of other symptoms." In the chapter on the Examination of the Sputum a plate has been introduced showing eosinophilic leucocytes and free granules in the sputum from a case of bronchial asthma. These bodies, however, are by no means characteristic of the sputa of asthma; they are present in a large percentage of tuberculous cases. Teichmüller regards their occurrence as evidence of a defensive struggle on the part of the body.

The whole work is characterised by thoroughness and clearness of description and we predict that further editions will be called for.

Compendium of Insanity. By JOHN B. CHAPIN, M.D., LL.D., Physician to the Pennsylvania Hospital for the Insane. London and Philadelphia: W. B. Saunders and Co. 1900. Demy 8vo. Pp. 234. Illustrated. Price 5*s.* net.

THE present Compendium of Insanity is a useful and unpretentious work which will take its place among the many smaller manuals and handbooks on the subject of mental diseases of which the past two or three years have been so prolific. Though not likely to be much used in this country, it will probably be serviceable as an introduction to the more elaborate and comprehensive works of Spitzka and Kellog which have hitherto marked the more advanced lines of American psychiatry.

The standpoint of the author is metaphysical, the human mind being postulated as an "essence of which we can form no conception." He makes little of recent discoveries and advances in psychology and much of the old division of the mind into faculties on the basis of metaphysical speculation. The result is that the work is throughout marked by the stamp of the antique and the methods of the metaphysical. The clinical divisions into mania, melancholia, and dementia follow well-known lines without any attempt at psychological analysis or at correlation of psychical symptoms with pathological changes. Then follow short accounts of paresis (general paralysis of the insane), epilepsy, and the briefest reference to abnormal psychical states marked by automatism and loss of memory—a condition of great medico-legal importance. We seek in vain for any account of such conditions as moral insanity, hebephrenia, alcoholic and other toxic insanities, circular insanity, or the psychoses of the climacteric. Six photographic plates illustrating the physiognomy of various insane patients are intercalated in the text. The printing is large and clear and the text is readable. The work is one to be read with caution, as it is both defective in regard to facts and dates and much behind the times from a medical and scientific standpoint. It is partly directed at a lay audience.

LIBRARY TABLE.

Alcaloïdes Usuels. Par Dr. M. BARNAY. Paris: Société d'Éditions Scientifiques. 1901. Pp. 366. Price 6 fr.—This book, comprising two volumes in one, forms No. 39 of the "Petite Encyclopédie Médicale." Dr Barnay in an impassioned "ante scriptum" implores his readers not to skip the first chapter of his book although, as he confesses, they are very likely to do so. We have read the chapter in question which is chiefly taken up with pointing out that most modern therapeutical preparations are uncertain and contain very different amounts of the active drug which it is wished to give. He quotes as an instance of uncertainty a very favourite remedy known as "*baume tranquille.*" In this preparation we find, he says, "belladonna elbowing hyssop, tobacco flirting with lavender, which in its turn has henbane for a neighbour, while datura fraternises with St. John's wort and elder flowers, &c. 19 substances in all without, for the most part, any bond of action." Dr. Barnay concludes by saying that instead of crude drugs the well-defined active principles should be substituted. The body of the book contains an account of the various alkaloids and glucosides arranged in alphabetical order. Each section is headed by a summary of the diseases and symptoms in which the drug is found useful. Then follow a description of the alkaloid in question, its physiological properties, its therapeutic indications, the dose, the modes of using, and the toxicology. In many cases Dr. Barnay apparently recommends the use of the pure alkaloid, but in some cases that of its salts or compounds, such as cantharidate of potassium or hydrochlorate of codeine. It has always seemed to us that if any salt of an alkaloid is employed it should be that salt which is found in the crude drug, such as, for instance, tannate of caffeine, meconate of morphine, or lactate or igasurate of strychnine. And probably the natural salts are superior to the pure alkaloid, which does not exist as such in nature. Though we do not agree altogether with Dr. Barnay's views his book will be found very useful.

Lehrbuch der Anorganischen Chemie. Von Professor H. ERDMANN in Halle. Mit 287 Abbildungen, einer Rechentafel, und sechs farbigen Tafeln. (*Manual of Inorganic Chemistry.* By Professor H. ERDMANN. With 287 Illustrations, a Reckoning Table, and six Coloured Plates). Braunschweig: Druck und Verlag von Friedrich Vieweg und Sohn. 1900. Pp. 758. Price 16 marks.—The first edition of this manual was issued a little over two years ago, and in our review of that edition we pointed out that the author evidently inclined to the view that the purely mathematical portion of the science should be presented to the student before he has made any practical acquaintance with the subject. We dissent from this view, as we think that theoretical study is immensely facilitated by a preliminary glimpse afforded by a few simple experiments of the nature of chemical change. Professor Erdmann starts by discussing in the very first chapter decimal fractions and the use and value of logarithms. The chapter is preliminary to the discussion of mass and weight, physical change and temperature, which in their turn precede the chapters on atomic theory. The rest of the work is divided into a part dealing with Metalloids on page 76 and a part on Metals on page 475. The account of the present position of chemical theory is excellent. The author is evidently *au courant* with the work and investigation of English chemists, for again and again he refers to the contributions that Englishmen have made towards both the expansion of theory and the accumulation of fresh facts. The book is fully and well illustrated, while the coloured plates showing the spectra of gases and of the newly-discovered elements are striking in their exact representation of the coloured lines characteristic of various elements. The colouring is most admirable and true. Although the second edition contains somewhat rather more matter than the first, yet its size is still within the limits of a manual. Not only does the book present an excellent and clear account of the theoretical considerations, but it gives also in some instances a description of the more important technical processes. Though a *lehrbuch*, the author has managed to give within its covers a very comprehensive and lucid treatment of the subject, and the work is thoroughly up-to-date.

Year Book of Pharmacy, 1900. Edited by LOUIS SIEBOLD, F.I.C., F.C.S. London: J. & A. Churchill. Pp. 597.—The British Pharmaceutical Conference held its meetings last year in London and a number of interesting papers were read and discussed. The papers together with the discussions are published in the transactions which form part of the publication before us. The rest of the journal is devoted to the past year's advances in chemistry, materia medica, and pharmacy. We congratulate the committee of publication upon the thoroughness with which this heavy work of abstraction is done. Their task has been most useful and most instructive and renders the Year Book a

valuable source of reference on the progress of the subjects indicated. The introduction is an excellent *précis* of this progress.

The Microscopy of the More Commonly Occurring Starches. By HUGH GALT, M.B., C.M. Glasg., D.P.H. Camb. London: Baillière, Tindall, and Cox. 1900. Pp. 114. Price 3*s.* 6*d.*—This little work is the outcome of a most useful piece of research relating to the identification of the more commonly occurring starches. We hope that the author will go on further with his work and develop the subject on the admirable lines of this instalment. It is a fact that accuracy in regard to description and delineation of the commonest starch grains is the exception rather than the rule in most text-books on the subject. The author has taken micro-photographs of the various starches, employing in the first instance dark ground illumination and in the second instance transmitted light. He has thus obtained some remarkable results which are quite contrary to the illustrations usually portrayed. One paragraph on this subject we cannot resist quoting. It is so good and illustrates the spirit in which the author has conducted his research. "In the light of the usual illustrations of potato starch what I have just said may appear somewhat startling; but as to its correctness there is no doubt, and, unlike many elaborate experiments, it may be verified with very little trouble by anyone with even an elementary knowledge of microscopy. So prone is man to accept without question the statements and illustrations of previous observers that the most misleading descriptions and figures—not of starches alone but of many other objects—appeared, and still appear, in many of the standard works dealing with the most diverse subjects." How true this is. As we have said, we trust that the author will pursue this interesting line of investigation further and give us the same valuable record of his results. The book will be most useful to analysts and laboratory workers in public health. It is illustrated by 22 original micro-photographs.

Mother, Baby, and Nursery: A Manual for Mothers. By GENEVIEVE TUCKER, M.D. London: T. Fisher Unwin. 1900. Pp. 193. Price 1*s.*—We reviewed the first edition of this book in our issue of April 9th, 1898 (p. 1004), and can find nothing new in the present edition. The two best chapters in the book are the last two which are respectively entitled, "Nursery Pointers" and "Nursery Don'ts." The advice given upon feeding is sound and we are particularly pleased to see that the author insists upon the necessity of babies being allowed pure water to drink, and that milk is more a food than a drink. Great stress, too, is very properly laid upon the harm done by giving babies anodynes or soothing syrups. We are sorry to see that some of the advertisements bound up with the book set forth the virtues of various quack medicines and of a book written by a quack. Probably the publisher is to blame for this, but we think that Dr. Tucker might see to it that such advertisements are omitted in future editions.

ARMY MEDICAL SCHOOL, NETLEY.

THE winter session of the Army Medical School was brought to a close on Jan. 31st. Owing to the continuation of the war in South Africa there was no public function in the school and owing to the circumstance that the surgeons-on-probation of the Royal Army Medical Corps had only been enabled to spend two months instead of four at the Army Medical School the surgeons-on-probation of the Indian Medical Service alone competed for the prizes and medals. The prizes were distributed by the principal medical officer of the Royal Victoria Hospital in the presence of the surgeons-on-probation of the Indian Medical Service and of the following officers: Professor A. E. Wright, M.D. Dub., Colonel K. MacLeod, M.D. Edin., LL.D. Aberd., Lieutenant-Colonel W. E. Webb, M.D. Aberd., R.A.M.C., Major W. Dick, F.R.C.S. Edin., R.A.M.C., Major R. H. Firth, F.R.C.S. Eng., and Major W. W. Webb, M.D. Aberd.

Before handing the prizes to the successful competitors Colonel W. J. CHARLTON, the principal medical officer, addressed some well-chosen words to the assembled surgeons-on-probation who have been recommended for commissions as lieutenants in the Indian Medical Service. Colonel CHARLTON said: "It is my pleasing duty to-day to present the prizes to those who have been successful in the late examination, and in doing so I offer you my warmest congratulations on the distinctions which you have gained, which must be a source of much gratification and pride to each of you. I wish, however, to impress upon you the necessity of not discontinuing your studies now that your time at Netley has terminated. The real battle of life only begins on your leaving here, and your future success depends on the steady and earnest acquisition of knowledge which the prizes you receive to day should stimulate you to endeavour to obtain. You are about to join a service of which I have some knowledge and experience, gained during 15 years' residence in India, and I can with confidence assure you that it is one you have every cause to feel a pride in. The Indian Medical Service is an old and time-honoured one, with a fine history and great traditions, and has associated with it many eminent and distinguished names, not alone in the domains of medicine and surgery and the allied sciences, but in that of diplomacy also—names which have shed a lustre on your service that time will not easily dim. The Indian Medical Service has conferred, and is daily conferring, innumerable blessings on the population of India and has been largely instrumental in ingratiating us and our rule with the people of that country and in enabling us to extend our empire and consolidate our power; in fact, it has been a most potent factor in the government of that country. In conclusion, I need only say that it should be your aim and object to preserve a high ideal and to try to follow in the footsteps of the great men who have preceded you, to maintain at all times the honour and good name of your service as faithfully as you would your own, so that you may transmit the same unsullied and untarnished to your successors; and in doing so I have no doubt but that you will steadily and surely attain success, and that when the day comes for you to sever your connexion with India you will have the happy reflection that you have done your duty to God and man."

The following lists show the names of the successful surgeons-on-probation. Those of the Royal Army Medical Corps were nominated to the school by the Secretary of State for War on the recommendation of the medical schools of the United Kingdom, and on leaving Netley they were subjected to a qualifying and placing examination only.

INDIAN MEDICAL SERVICE.

List of surgeons-on-probation who were successful at both the London and Netley examinations. The prizes are awarded for marks gained in the special subjects taught at the Army Medical School. The final positions of these gentlemen are determined by the marks gained in London added to those gained at Netley, and the combined numbers are accordingly shown in the list that follows:—

	Marks.		Marks.
*C. W. F. Melville	6001	W. D. Pringle	5002
†R. McCarrison	5924	A. W. C. Young	4982
‡J. Masson	5530	J. G. G. Swan	4838
§N. S. Wells	5411	R. M. Dalziel	4565
W. M. Anderson	5349	J. J. Robb	4416
E. H. B. Stanley	5180	S. A. Ruzzak	4302
W. H. Leonard	5166	R. B. B. Foster	4182

* Gained the First Montefiore Prize of £21 and Medal.
† Gained the Herbert Prize of £20, the Martin Memorial Medal, the Second Montefiore Prize, and the Prize in Pathology presented by Surgeon-General W. Hooper, C.S.I.
‡ Gained the Maclean Prize in Clinical and Ward Work.
§ Gained the de Chaumont Prize in Hygiene.

ROYAL ARMY MEDICAL CORPS.

List of nominated surgeons on probation who were recommended for commissions in the Royal Army Medical Corps at the close of the eighty-first session:—

A. J. W. Wells.	J. V. Roche.
G. F. Sheehan.	A. J. Hull.
H. H. Scott.	R. V. Cowey.
H. A. B Bransbury.	J. Conway.
M. W. Falkner.	J. H. Barbour.
R. N. Woodley.	F. E. Robinson.
E. Ryan.	S. Mason.
E. E. Parkes.	J. S. Bostock.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 9, 1901.

The King's Message.

WITH that thoughtfulness and tact which distinguish great rulers of men His Majesty the KING has found time in the midst of his own personal sorrow to send a message to his people. The message is divided into three messages, the first being headed, "To my people"; the others "To my people beyond the seas," and "To the princes and people of India." In the first message, which is general in its direction, His Majesty refers in terms of gratitude to the "universal expressions of what I know to be genuine and loyal sympathy with me and with the Royal Family in our overwhelming sorrow. Such expressions have reached me from all parts of my vast empire, while at home the sorrowful, reverent, and sincere enthusiasm manifested in the magnificent display by sea and land has deeply touched me." Sympathy in sorrow is all that it is vouchsafed to the nation to give, and the scenes of last week were the visible expression of a very real and heartfelt grief. Neither the KING, nor any one in the funeral procession, nor any spectator, could mistake the genuine nature of the popular manifestation. The absolute silence, a silence which could be heard, of the vast multitude, as the gun-carriage bearing all that was mortal of our late QUEEN passed, spoke in language that could not be mistaken. "To my people beyond the seas" is the happily worded address of the second message. How has the meaning and import of these words widened since the close of the reign of our other great Queen. When JAMES I. came to the throne, on the failure with ELIZABETH of the Tudor dynasty, the only possession of Britain beyond the seas was the plantation of Virginia. And now from lands unknown and undreamt of in those days, the sons of the blood have come to give their lives in South Africa for the empire's cause. How appreciated is their loyalty His Majesty's words fully show. The third message was as happy in wording and direction as the others. The great Empire of India in our recent seasons of national trouble has not been behindhand in fealty. Though it has been denied to the natives of that empire to show their loyalty by fighting, yet the feudatory princes sent their treasure, and those in a humbler rank came forward to perform an inestimable service, a service which had no lust of battle or excitement to spur them on, but one which wanted bravery as much, if not more than any other—the task of collecting and of removing the wounded. Gladly, we know, would the warrior tribes of India have fought under our flag, but this might not be. Let us never forget the services of the Indian dhoolie-bearers. And so to India, its princes and its people, the KING sends greeting and his promise to "endeavour to follow the example of the first Queen-Empress to work for the general well-being of my Indian subjects of all ranks and to merit as she did their unfailing loyalty and affection."

If the glory and the opportunities of empire are great, so also are its burdens and responsibilities. The ruler of the gigantic empire of Great and Greater Britain is not, however, we are proud to think, alone in bearing his burden. He is supported by the love and loyalty of a free people. And to no section of his subjects can King EDWARD VII. turn with more distinct assurance of support than to the members of our own profession. His Majesty's interest in medical matters is known to all. We are proud to think that he is a Fellow of the Royal College of Physicians of London and of the Royal College of Surgeons of England, while he has shown his esteem of medicine in a wonderfully practical manner. As PRINCE of WALES he was President of the oldest hospital in these islands. He was chairman of the Royal Commission on the Housing of the Poor, a question the solution of which medical and sanitary authorities alike are convinced will be one of the greatest steps forward that our civilisation can take. As originator and chairman of the Prince of Wales's Fund for the London hospitals he raised a lasting memorial to the Diamond Jubilee of Queen VICTORIA, and associated that memorial with medicine. The exacting duties of his high station may not allow him as heretofore to take such an active part in works of philanthropy and charity, but we are certain that his interest in such will be as keen as ever. And he may rely that the PRINCE who served a worthy apprenticeship to the throne by endeavouring to follow the lives and assuage the sorrows of the poorest of his subjects will, as KING, always command the deep and personal esteem of the medical profession.

Legislation against National Intemperance.

IT is sometimes said that the members of the medical profession show a want of courage in the expression of their knowledge of the drinking habits of the nation and of the mischief that is done thereby. There may be some grounds for the reproach but not much. Since the days of Dr. R. B. TODD, a generation back, no leader of medical thought has sanctioned a reckless use of alcohol in any form. And not a few of the men in the front rank have spoken with plainness on the subject and have reduced their prescription of alcohol to the lightest forms and the most modest quantities. The insurance offices, acting as much under the advice of their medical officers as in accordance with their own special and costly experience in the matter, make the question of moderation in the use of alcohol a cardinal one, and unhesitatingly either reject altogether proposals from persons unable to show that they are properly restricted in their use of alcohol or attach such conditions to acceptance of their proposals as to mark their belief that the absence of moderation involves, in the majority of cases, a premature claim on the funds of the association. The significance of this fact is great. For there is in the business of life insurance the keenest competition, and no fancy objections would be raised to the acceptance of any reasonable proposals. The charge against medical men that they have been timid in testifying to the injurious effects of

more than a moderate use of alcohol while lay bodies have widely recognised these effects is not without foundation. But the public utterances of PARKES, MURCHISON, GULL, and ANDREW CLARK, among others, laid stress on the harm done by even moderate quantities of alcohol to many persons. Of recent and living authorities we may refer to Sir J. BURDON SANDERSON, Sir HENRY THOMPSON, Sir WILLIAM GAIRDNER, Mr. VICTOR HORSLEY, and Dr. ROBERT HUTCHISON as men of scientific light and leading who have spoken out. The last-mentioned author, in his book on the principles of dietetics, in the course of a general review of the action of alcohol in health and disease, written in a strictly scientific and temperate sense, concludes that alcohol is an unnecessary article of diet in complete health, and quotes the following sentences from Dr. MURCHISON which may or may not be familiar to our readers: —

"1. A man in good health does not require alcohol and is probably better without it. Its occasional use will do him no harm; its habitual use even in moderation may, and often does, induce disease gradually.

2. There are a large number of persons in modern society to whom alcohol even in moderate quantity is a positive poison.

3. In all conditions of the system characterised by weakness of the circulation the daily use of a small quantity of alcohol is likely to be beneficial at least for a time."

It is, we are glad to think, foreign to the disposition of medical men to enter into political controversy on public questions. But in regard to the question of alcohol it is scarcely possible that they should remain altogether silent. The growing number of deaths from alcoholism and the increasing consumption of it by the people, men and women, and especially women, make it incumbent on medical men who have studied the question to place their views clearly before the public. We have received a copy of an address by Dr. WILLIAM CARTER of Liverpool on National Intemperance, who has clearly perceived the necessity for speaking out. Dr. CARTER does not go into any fine questions concerning the slight effects of moderate quantities. He speaks as a leading consulting medical man and a justice of the peace of Liverpool, in which city there is a constant and hard struggle on the part of the authorities with the social conditions that produce degeneration and disease. He probably holds views on the use and abuse of alcohol more severe than those of the majority of medical men who have to deal with the world as they find it, whether their patients are to be found chiefly in comfortable homes or in charitable institutions; but he wisely confines himself to palpable facts. He points out that in nearly every direction preventable disease has been prevented on a large and satisfactory scale since the legislation of the seventies, which divided the kingdom into sanitary districts and authorised the placing of them under the supervision of a medical man whose function it was, and is, to inquire into the existence of disease in his locality with a view to its control and removal. He shows the marked success which has followed the efforts of the State, through its municipalities, to reduce the mortality from almost every one of the great groups of disease which are responsible for the deaths of the people. After the registration system was introduced in 1837 the mortality remained almost stationary till the development of the public health legislation, to which we have referred, when the general mortality began to fall and has progressively fallen. In regard to every great group of disease this fall in mortality holds save in the dietetic group, which is subdivided into three headings—deaths from starvation, deaths from scurvy, and deaths from intemperance. Deaths from starvation have fallen from 18 to 12 per 1,000,000; deaths from scurvy, 1 in 1,000,000, have remained stationary; but with deaths from intemperance the case is quite otherwise—they have risen from 45 per 1,000,000 of those living in the year 1878 to 77 per 1,000,000 in 1897. Dr. CARTER is impatient with such a state of matters and calls for its redress by "legislative or other action." He shows how typhus fever, small-pox, and hydrophobia have been controlled almost to complete disappearance by the effective administration of the law. He maintains that law can do much to control and diminish death from alcohol. One fact with medical bearings he adduces. The magistrates of Liverpool, under the powers of an Act of 1872, determined to curtail the period of sale of alcoholic drinks by one hour on a Saturday night. Dr. CARTER made it his business to carefully collect from every dispensary and from the out-patient department of every hospital the number of cases of surgical injury due to drunken assaults on Saturday nights and Sunday mornings for a certain number of weeks before and after the curtailment of the hours. He has been enabled to show, without a single chance exception at a single institution, an extraordinary diminution since the curtailment of the hours of sale, a fact which not improbably influenced the magistrates to maintain the curtailment in spite of the great pressure that was put upon them to do the reverse. One such fact as this should dispose of most of the nonsense that we hear to the effect that legislation has done all it can to mitigate the preventable disease of alcoholism, which has increased and is increasing, and which keeps up the pauperism of the country in a time of unprecedented prosperity.

It is idle to think that any provision for confirmed drunkards will materially benefit either them or the nation unless efforts are made by the legislature and by society to prevent their being manufactured wholesale. We have shown that many leaders of the profession have viewed the question of our national habits with seriousness. The medical profession throughout the kingdom will be acting in the spirit of the true physician in refusing to be satisfied till legislation does for the mortality from alcoholism what it has done for the mortality from whole groups of other diseases which do not so fatally affect the people. We may appear in our columns of late to have somewhat laboured the temperance question, but we are sure that our readers will not confuse us with the well-meaning but over-zealous advocates of total abstinence. Although in every section and sub-section of human life there will be weaker vessels requiring protection for themselves of which stronger men feel no need, it is, in our view, ridiculous to desire to put men into leading strings because babies cannot walk. Yet no temperance lecturer can be more profoundly convinced than we are ourselves of the terrible mischief that is being

done to our country at the present day by our alcoholic indulgence. This view is, we are certain, shared by the medical profession of the kingdom whose position for using words of caution and remonstrance is unique and who have opportunities of studying the alcohol question at first hand which are denied to temperance lecturers.

Isolation Hospitals.

FOR some weeks past a discussion has been proceeding in our columns as to the value which is to be attached to isolation hospitals in relation to the control of scarlet fever. Those who are associated with these hospitals have not come forward with the alacrity which might have been expected, but possibly they are reserving their efforts for the discussions which, we believe, are very shortly to take place at the Society of Medical Officers of Health and at the Epidemiological Society of London. The subject is one of very great importance and the responsibility of those who endeavour to deal with the problem without a proper appreciation of all the factors involved is enormous. It is for this reason that we have determined to point out some of the issues at stake and some of the fallacies into which Mr. E. D. MARRIOTT of Nottingham, who has taken a prominent part in this controversy, has, in our view, fallen. Had he turned his attention in the direction of reform he would have found us on his side, but when he wishes to deprive the public of the advantages of isolation hospitals we feel constrained to examine his position closely.

In THE LANCET of Dec. 8th, 1900, p. 1661, we contrasted, in a leading article, the modern conception of an isolation hospital with that which obtained in olden days when the nature of infection was less perfectly understood. We referred, too, to a pamphlet written by Mr. MARRIOTT which aimed at condemning *in toto* such institutions owing to the fact that they had failed to "stamp out" scarlet fever. We challenged the writer of the pamphlet to refer us to even the most antiquated memorandum on isolation hospitals issued by the Local Government Board which might afford him some grounds for the "stamping-out" thesis, which he has apparently borrowed from certain enthusiasts of bygone years. In his reply, which we published in THE LANCET of Dec. 15th, 1900, p. 1759, Mr. MARRIOTT was silent upon this point; and, moreover, he apparently changed his ground from a general attack upon isolation hospitals to the more specific case of scarlet fever alone. Mr. MARRIOTT'S contention would appear to be this: that the risk of infection from invaded houses to the rest of the community is not, as we contended it was, lessened by the use of isolation hospitals but is actually increased, and this through the medium of "return" cases. We feel it difficult to take this expression of opinion seriously. Stated in other terms it means that the occurrence of the cases which at times result from patients discharged in an infective condition from a fever hospital more than counterbalances numerically the cases which might be considered as likely to arise were the original cases left in their own homes—in the one- or two-roomed, often overcrowded, dwellings of the poor—during the whole period, some eight weeks, of infectivity. The burden of proof is, of course, with Mr. MARRIOTT, but it may be asked whether a source of infection which is relatively uncontrolled for many weeks is not as likely to be harmful to the public as one which is at once removed to a well-conducted isolation hospital. It is surely admitted by all those who are familiar with hospital administration that a discharged patient may possibly be a source of infection, and hence at some hospitals the friends are warned that there is such risk; but to any well-balanced mind this is hardly a sufficient reason for condemning the whole system. Rather is it a reason for less concentration, and the adoption of such measures as have been found, at Manchester and elsewhere, very materially to reduce the number of "return" cases.

Mr. MARRIOTT will, we trust, forgive us if we question his entire comprehension of the epidemiological problems at issue, and if we ask whether he is not rather confusing notification with isolation. He shows by tables that in certain of our large towns the amount of isolation which has been at present practised has not led to any *demonstrable* decrease in the number of notified cases of scarlet fever and he at once infers that such institutions are worse than useless. But here he is endeavouring to establish a fixed standard for an ever-varying and uncertain quantity; he entirely overlooks the fact that, as pointed out by Dr. A. J. TONKIN in THE LANCET of Dec. 22nd, 1900, p. 1835, certain diseases have their periods of increase and decrease quite irrespectively of the influence of any sanitary measures, and that hence the diminution of such increases is all that can at present be hoped for, unless with a disease such as plague in Glasgow we can, as it were, get round the whole outbreak at once. A parallel might be pictured in the case of a town where, for some reason imperfectly understood, the number of fires increased year by year notwithstanding the fact that the fire-brigade service was yearly more complete. Mr. MARRIOTT would, it seems to us, disestablish the fire engines rather than seek to control the amount of inflammable material in the town. As regards the fall in the fatality-rate of scarlet fever which has undoubtedly taken place for many years past, Mr. MARRIOTT alleges that such fall received a check when isolation became *general*. It is difficult to ascertain when isolation did thus become general, and it is news to us that it is so at the present moment, but Mr. MARRIOTT assumes that it became general in or about 1893. In endeavouring to demonstrate this point he furnishes a table showing the average number of deaths from scarlet fever per 1,000,000 persons living in successive quinquennia from 1861 to 1893, his quinquennia, be it noted, ceasing with the period from 1886 to 1890 when the average was 241 per 1,000,000. For the year 1891 the rate per 1,000,000 was 171; for 1892, 190; and for 1893 it was 235. Here he stops, but we must point out that had he made use of the figures at his disposal—he refers to other rates even for 1899—he would have had to record 149 per 1,000,000 for 1895 and 113 per 1,000,000 for 1898, while for the period 1891–1895 the lowest quinquennial rate on record—i.e., only 182 per 1,000,000—was registered, and this with the increasing use of isolation hospitals. Vital statistics are, Mr. MARRIOTT observes, "the third degree of comparison of unveracity," and when used in this way and

applied to estimate the effects of any given measure upon a wave the initial magnitude of which is unknown and *unknowable*, they are apt to be ludicrously misleading. We leave our readers to determine to what degree we have been just.

We asked on Dec. 8th what Mr. MARRIOTT would do without isolation hospitals in the event of bubonic plague visiting England. Mr. MARRIOTT replies that Dr. J. F. PAYNE in his article on Plague in CLIFFORD ALLBUTT'S "System of Medicine" writes that "under some circumstances the patient might be better isolated in his own house." We quite agree with this; but Mr. MARRIOTT, had he given us the context necessary to convey Dr. PAYNE'S meaning, would have written: "The infected house should be emptied, patients should be removed to a hospital, and the other inmates isolated under observation." In his communication of Dec. 29th Mr. MARRIOTT raises questions as to the varying prevalence of scarlet fever and he apparently maintains that no such variations are recognised. If Mr. MARRIOTT will turn to the last edition of WHITELEGGE'S "Hygiene and Public Health," which is, perhaps, the most widely read text-book on the subject at the present time, he will find on page 288 these words in reference to scarlet fever: "In many districts it rises and falls with almost rhythmic regularity for long series of years, the usual interval between the epidemic maximum being five or six years. ..... In most towns epidemics occur at more or less irregular intervals." It had never "dawned upon me," Mr. MARRIOTT wrote, "that any man who had in view the objects aimed at by the establishment of isolation hospitals would build up an argument founded on the admission that no effort can stay the oncoming of the periodic wave. It is a kind of logic which I find extremely puzzling." Here Mr. MARRIOTT admits that he has not kept himself in touch with modern epidemiology. He will discover many references to this very point in the pages of THE LANCET, and if he will refer to the Public Health section of our last Annus Medicus he will be gratified at finding in regard to plague a candid admission of the position he finds so puzzling. With certain infectious diseases, as with certain foods, there are years of plenty and years of scarcity. What makes for the one or for the other is not as yet apparent, and in the meantime what we seek to bring about by notification and isolation is to reduce the magnitude of the upward wave and hasten the fall of the downward wave; in other words, we endeavour to mitigate or increase the *effects* of nature's laws.

Perforation in Typhoid Fever: The Indications for Surgical Operation.

PROFESSOR OSLER has made for himself such a commanding position among physicians that any article that bears his name is certain to attract wide notice from his professional colleagues. But we make no apology for drawing special attention to the short communication from him which is published in our columns to-day, for it deserves to be very widely read and pondered, not only by those to whom it is especially addressed—the resident officers of hospitals—but by all who undertake the medical care of patients having typhoid fever, and by all operating surgeons. A physician of wide experience and great knowledge like Dr. OSLER does not lightly speak or write on the treatment of typhoid fever; he knows how profound are the problems to be solved, and how great have been the labour, the knowledge, the skill, and the experience which have already been brought to bear upon their solution. Those whose experience is small, and knowledge perhaps less, are often found vaunting some specific for this, that, or the other feature of this terrible disease Not so the really learned. Dr. OSLER'S special point in his present article is the urgent need for the early recognition of intestinal perforation in the course of typhoid fever. He points out that 25 per cent. of the deaths in this disease are due to perforation of the bowel, and he alleges that in his wards from 30 to 40 per cent. of the cases of perforation have been rescued from death by timely operation. Such a statement from such a source is of the highest moment and it records a result that even the most sanguine did not anticipate when this treatment was first suggested and carried out.

To obtain success certain conditions appear to be necessary. In the first place, the occurrence of the perforation must be recognised *at once*, before the widespread peritonitis has abolished all hope of saving life. In the second place, the local condition must be capable of surgical treatment; extensive infiltration of the bowels or, still worse, considerable sloughing, appears to contra-indicate operation. These conditions cannot be accurately determined before operating, and the surgeon must therefore be prepared to find it impracticable to complete his operation in a certain number of cases. The third condition is such a physical state of the patient as will enable him to stand the strain of the operation. Upon this point it is necessary to remember that the shock of the operation has not proved so fatal as might have been expected, and some desperate cases have weathered the storm. Dr. OSLER himself mentions cases in which "the operation is successful, but the patient dies in the due course of the disease from the intensity of the fever or in a relapse." That is to say, there have been patients who were so desperately ill with the general effects of the fever that they ultimately succumbed to it, but who yet successfully passed through the operation for closure of the perforation. But even more striking than such is the case briefly mentioned by Dr. OSLER of a patient who twice over in an attack of typhoid fever was operated upon for intestinal perforation and on a third occasion had the abdomen opened on the supposition that another perforation had occurred. That any patient in the later weeks of typhoid fever can survive three successive abdominal sections is a proof that the chance of life afforded by operation must not be lightly denied because of the "shock" or other constitutional strain which it will cause. The fourth condition of success is rapid and careful operating. A general anæsthetic can often be dispensed with, injection of eucain with perhaps just a whiff of chloroform being sufficient to prevent pain. Great manipulation of the bowel must be avoided and all procedures should be rapid and careful. In the best cases suture of the bowel so managed as to fold in the edges of the perforation is the proper procedure; in

a small number of the cases the bowel is too extensively diseased to admit of this and an enterectomy must be effected. The operator must be prepared for either course and must make up his mind promptly.

Of all these conditions the time between the perforation and the operation is the most important. When general peritonitis is well established operative treatment is practically quite hopeless. The problem is how to recognise and deal with the perforation directly after its occurrence without waiting. For this to be possible the diagnosis must be made quite early, and it is to this point that the attention of our readers is specially attracted. A sudden severe pain in the abdomen is the most constant sign, but perforation is not the only cause of such pain. A distinct change in the condition of the abdomen—rigidity, immobility during respiration, fulness, a markedly tympanitic area, or the abolition of liver dulness are all points to be carefully investigated. A sudden fall of temperature or rise in the pulse-rate is also significant. It is not by relying upon any one of these signs, however, that a diagnosis will be arrived at, but rather by the ability to appreciate that a sudden change in the local and general condition has taken place. If diagnosis is postponed until the abdomen is distended and motionless and the patient profoundly collapsed, the time for successful surgical aid will have passed by. Too much stress cannot be laid upon the urgent importance and great difficulty of early diagnosis. It will only be achieved by those in attendance keeping a very careful watch upon all the local and general symptoms The problem presents itself in many forms in medicine and surgery. In penetrating wounds and contusions of the abdomen it is often extremely difficult to determine whether perforation of the bowel has occurred or not. How often, too, are the symptoms of a perforated appendix most ambiguous, and the golden opportunity for surgical treatment is lost! We feel sure that Dr. OSLER'S appeal for a more minute and careful observation and record of all such cases will be generally welcomed, and we hope that it will be attended with great success.

Annotations.

"Ne quid nimis."

THE ROYAL COMMISSION ON THE BEER-POISONING EPIDEMIC.

THE Royal Commission which was appointed to inquire into the "recent exceptional sickness and death attributable to poisoning by arsenic in beer" met for the first time on Feb. 5th, under the presidency of Lord Kelvin, to consider the course of procedure. We believe that a preliminary course of procedure was decided upon, and we hope that the Commissioners have elected to direct their attention in the first instance exclusively to the question of poisonous beer. As we have pointed out, "exceptional sickness and death" have been traced indubitably to arsenic in beer, and this matter needs no further discussion. We hope the Commissioners will at once decide upon a recommendation that legislative measures be immediately taken to stop effectually the introduction of arsenic into beer. The consideration of the "pure beer" question is quite secondary to this, although we must admit that in view of recent disclosures this question may well be re-opened. Further, it seems to us that the terms of reference are so wide as practically to fix upon the Commissioners the responsibility of deciding the question as to what steps should be taken to secure the absolute freedom from arsenic of all food products, and what limitations in regard to the quantity of arsenic should be laid down in other products, in fabrics, for example, carpets, dress materials, wall-papers, and so on. The epidemic following upon beer-poisoning has opened an enormous field for inquiry, and we doubt not that much valuable evidence will be given before the Commission on the whole general question of the possibility of arsenic occurring, from a just traceable quantity up to an estimable amount, in food and food products and other articles of every-day use. It is no longer a Royal Commission on beer-poisoning; it is a Royal Commission to inquire into the presence of arsenic in countless directions. We maintain that so far as the inquiry relates to beer-poisoning the materials are already to hand which should enable legislation to be soon set afoot in the form of a short Bill to suppress the possibility of arsenic occurring in beer; and in view of the deaths and sickness that have been caused we consider that a remedy more rapid than a Royal Commission might have been found. The question of the presence of arsenic in other food materials must needs involve a prolonged inquiry, but there is here no pressing necessity, as in the case of the beer-poisoning epidemic, for immediate legislative measures. Clearly, if the Royal Commission decide to conduct an investigation into the possible presence of arsenic in, we had almost said, everything, we may have to wait a very long time before any definite measures are adopted effectually to stop the introduction of arsenic into beer.

THE PHARMACOPŒIA AS A LEGAL STANDARD.

IN commenting upon a case in our issue of Jan. 19th which related to the sale of mercurial ointment considerably below the strength of the formula laid down in the British Pharmacopœia, we remarked that there is a good deal to be said in favour of the view that where a thing is not sold in accordance with the standard of the British Pharmacopœia it ought to be so labeled. This is exactly the view since presented in the judgment given in a precisely similar case in the King's Bench Division of the High Court. Here, again, the drug sold was mercurial ointment which proved to contain 12·5 per cent. of mercury instead of 48·5 per cent. as laid down by the British Pharmacopœia. The case had been stated by the magistrates sitting at Skipton in Yorkshire, and it raised the question of whether the decision of the magistrates upon an information under the Sale of Food and Drugs Act, 1875, was correct. It was contended that the ointment supplied not being in accordance with the standard of the British Pharmacopœia was not of the nature, substance, and quality demanded within the meaning of the statute. The appeal was dismissed, for their lordships (Bruce and Phillimore) held that as the appellant was asked for mercurial ointment he should have sold the drug as prescribed in the British Pharmacopœia; or if he was going to sell ointment in which the mercury was only about a quarter of the standard strength, which he in fact did, he should, if he sold such a drug at all, have explained that he was selling a weaker or diluted drug and have so named it. Their lordships further pointed out that what the appellant did attempt to prove was that there were two commercial standards of wide difference, "a thing in itself unreasonable, while he said he kept both standards in his shop and sold one standard or the other

according as customers did or did not bring a prescription from a medical man. He might almost as well keep two weights or two measures." They were of opinion, therefore, that the cases which they had quoted established the fact that if a drug was to be found in the British Pharmacopœia, and that drug was asked for, that drug must be supplied, and if it was not sold with the ingredients in the proportions prescribed by the British Pharmacopœia there was at least *prima facie* evidence that what was sold was not of the nature, substance, and quality demanded. This ruling seems to us clearly to regard the British Pharmacopœia as a definite legal standard for drugs, and thus to settle the contention that has been going on for some time as to whether it was legal to refer the strength or standardisation of drugs to the British Pharmacopœia under the Sale of Food and Drugs Act. Many pharmacists hold that it is, while some analysts think that it is not. This important decision of the High Court practically regards the British Pharmacopœia as an authority on the standard and strength of drugs.

THE DEATH FROM PLAGUE IN CONSTANTINOPLE.

ON Jan. 7th a death from plague occurred in the Clinical Hospital attached to the School of Medicine in Stamboul. The patient, as has already been recorded in our columns, was *caïkjee*, or boatman, to a custom-house official who lives at Beicos, on the Asiatic side of the Bosphorus, some 12 miles from Constantinople itself. The man fell ill about 15 days before his death; he was seen by a medical man at Beicos, who diagnosed the case as one of influenza complicated with pneumonia. Influenza, it may be stated, was at that time seriously epidemic in this city and its neighbourhood. As he became worse his brother was telegraphed for and on Jan. 4th the latter removed the patient to Selimieh, a suburb of Scutari—the town which faces Constantinople on the Asiatic side of the Bosphorus. Here he lay for three days and nights, occupying a room over a café frequented by boatmen. On Monday, Jan. 7th, he was rowed across in a *caïk* to Stamboul and carried up to the Clinical Hospital. He died almost immediately after being admitted. The nature of the case had not been recognised by the hospital authorities before death, but by a fortunate chance the patient had been seen during the course of his removal from Scutari to Stamboul by a physician who had some experience of plague. The latter at once recognised the nature of the case and reported it to the municipality, who were enabled to take action before the body was buried. Professor Nicolle, the director of the Bacteriological Institute of Constantinople, was summoned. He found a bubo in one groin of the cadaver and the bubo contained an enormous quantity of bacilli, which possessed all the morphological and cultural characters of plague bacilli. The cultures when inoculated into rabbits caused death in 48 hours. Whence the infection came in this case has not been proved, but it is more than possible that the case was in some way connected with the recent recrudescence of plague in Smyrna. The man had friends in Smyrna and had visited that town some three months before his death. It is possible that he had received letters or parcels from Smyrna which had in some way conveyed the infection to him. For the measures taken in and around Constantinople in consequence of this death the municipality was mainly responsible. The Ottoman Board of Health was in a position only to give advice and to make suggestions, but as the highest sanitary authority in the country its advice was asked for, given, and acted upon. Two special meetings of the Board were held on Jan. 9th and Jan. 11th, and a number of measures tending to allay panic, and particularly to ensure that the authorities should have early knowledge of suspicious cases or of any unusual phenomena in the rat world, were suggested and carried out. A small committee of four medical men, two nominated by the Sultan and two by the Board, was formed, to hold itself in readiness to investigate any doubtful case of disease or death, whether in man or among rats. Fortunately their services have not been required, as nothing has occurred since Jan. 7th to raise the suspicion that the infection of plague still exists in or near Constantinople. The only quarantine measure imposed by the Board of Health upon shipping was a medical visit with disinfection on arrivals from Constantinople in other Turkish ports. The neighbouring countries were stricter, and Russia, Roumania, Bulgaria, Greece, and Egypt all imposed a quarantine of 10 days upon arrivals from Constantinople. As this action on the part of Russia was a direct infringement of the Venice Convention which was accepted by that country attention has been drawn in the proper quarter to this—the second occasion within four months on which Russia has broken the convention. At the moment of writing all quarantine measures in other countries against Constantinople have been withdrawn.

THE ROUTE AT THE QUEEN'S FUNERAL.

IT speaks well for the arrangements that were made on Saturday last, Feb. 2nd, to keep the route for the passage of the Queen's funeral *cortège*, that although vast crowds assembled in the metropolis to pay their last sad and solemn homage to the memory of a dearly beloved ruler, few accidents occurred that were of a serious nature. Deep love and high respect for Queen Victoria undoubtedly played no little part in the order which prevailed. Hooliganism was absent, for its exemplars, being no fools, felt that anything in the nature of rowdyism would have met with a hostile reception on the part of all men. The most serious accident which has come to our notice happened to a police-constable who was kicked in the lumbar region by a troop-horse. The man was taken to St. Mary's Hospital and is now progressing favourably. A man was kicked severely in the abdomen by a troop-horse in Edgware-road, of whose fate we have had no news. Some 30 cases of faintness and fits were also treated at St. Mary's Hospital, while at St. George's Hospital there were several cases of simple fracture. At Westminster Hospital a few cases of fainting were treated. Some two dozen of the injuries treated were the result of falling from trees, eight of the sufferers being females. The medical arrangements along the line of route were in charge of Surgeon-Lieutenant-Colonel J. E. Squire, V.M.S.C., who was assisted by Surgeon-Major Matthews, V.M.S.C., and Captain L. Way, R.A.M.C., together with about 20 officers and 400 men of the Volunteer Medical Staff Corps.

SCALDS OF THE PHARYNX AND LARYNX.

IN the *Deutsche Medicinische Wochenschrift* of Jan. 31st Dr. E. Schmidt of Britz reports a case in which a boy, three years of age, attempted to drink from the spout of a tea-kettle full of boiling water. The parents were unable to say whether any of the water had been swallowed or whether the symptoms were due to the steam alone. When the immediate pain and terror had subsided the child was able to drink without apparent suffering, and the parents were hopeful that no harm had been done, but during the night difficulty of breathing set in and the child was admitted into hospital next day. There were then hardly any perceptible signs of injury, as the lips, tongue, and pharynx were perfectly normal, and there was nowhere any marked redness of the mucous membrane, but there were dyspnœa with rapid breathing and some pain in swallowing. Laryngoscopic examination was impossible on

account of the child's restlessness. In the afternoon there was a change for the worse, and subcutaneous emphysema starting from the throat spread to the body, neck, and cheeks. Tracheotomy was performed in the evening. The child died next day from cardiac debility and pneumonia. The interest of Dr. Schmidt's article consists not in the clinical phenomena but in his statement that such an accident is hardly known in any country except England. In Germany, he says, such an occurrence is never met with, or at least is excessively rare. Four cases which have been recorded in German literature—namely, in the *Journal für Kinderkrankheiten* for 1860 and 1867—relate to children into whose mouths hot fluid was poured as they were lying down. On the other hand, in England, in St. Thomas's Hospital alone from 1872 to 1893 there were 78 cases. Dr. Schmidt attributes these accidents to the universal practice of drinking tea among all classes in England and quotes from Mackenzie on "Diseases of the Larynx" to the effect that children are commonly allowed to drink from the spout of the teapot and they afterwards, not understanding the danger, attempt to do the same with the tea-kettle.

ASTHENIC BULBAR PARALYSIS AND ITS PATHOLOGY.

Professor J. Déjerine and Dr. R. Thomas have published in the *Revue Neurologique* of Jan. 15th last a valuable communication on the subject of asthenic bulbar paralysis, which gives, apparently for the first time, some definite account of the pathology of an affection which hitherto [1] had been supposed to be a disease without discoverable morbid changes in the cerebral nervous system. The first clinical description of the disease was published by Wilks in the Guy's Hospital Reports for 1877 and in the following year Erb of Heidelberg gave a detailed description of a case. A few cases have been described clinically since then and the results of necropsies made by Oppenheim, Strümpell, Jolly, and Sinkler have hitherto given negative results. Widal and Marinesco mention briefly that chromatolytic changes were met with in the bulbar nuclei of the cranial nerves in one case examined by them, but state nothing regarding the cerebral cortex, pyramidal tracts, or muscles. Glockner reports similar changes in the dorsal nucleus of the vagus nerve in one case, while the other cranial nerve nuclei showed no changes. He also records a fatty degeneration in the muscles of the tongue. The case recorded by Professor Déjerine and Dr. Thomas is as follows. A woman, aged 58 years, of good heredity, married, had repeatedly suffered from headache and vertigo since the menopause. Hearing was subsequently dulled in both ears and speech was slightly embarrassed. On admission to hospital there was some trouble in swallowing, and she suffered also from dental neuralgia. There was slight right sided facial paralysis and speech was nasal in tone. Laryngoscopic examination showed a paresis of the adductors of the vocal cords. Her mental condition was normal and the cutaneous and deep reflexes were retained. She frequently suffered from marked somnolence. She now grew progressively weaker, was unable to masticate or to swallow food, the reflexes of all four limbs grew exaggerated, and she died from an intercurrent attack of pneumonia after having been in hospital nearly two years. At the necropsy the nervous system (cerebrum, spinal cord, meninges, and cranial nerves) appeared normal to the naked eye. Histological examination, however, revealed the following changes. The cerebral cortex, the ascending frontal convolution, showed irregularly distributed changes—viz., a very marked multiplication of neuroglia cells and a considerable diminution or rarefaction of nerve cells. The neuroglia overgrowth was particularly conspicuous in the molecular layer and consisted of irregularly stellate and rounded cells. The apical expansions and protoplasmic terminals of the cortical cells had disappeared and the cell-bodies when they still persisted were reduced to rounded masses or to nuclei clothed with a thin layer of protoplasm. The capillaries were numerous but their coats were unaltered, and the large blood-vessels also appeared normal and free from appearances suggesting inflammatory reaction. In intervening cortical areas relatively intact nerve-cells were present. The nerve-fibres both of the tangential and projection systems appeared normal. No lesions could be found in the internal capsules or basal ganglia. The bulbo-spinal nuclei appeared quite normal. The muscles of the tongue and larynx showed fatty degeneration and the nerves supplying these were similarly affected. Scattered degenerations were found among the pyramidal nerve-fibres in their course through the bulb. While definite lesions were thus met with the cause remains yet obscure.

[1] Sinkler: THE LANCET, Oct. 21st, 1899, p. 1110.

WOOD-SPIRIT IN WINES AND SPIRITS.

IT would appear that methyl-alcohol, the chief alcohol of wood-spirit—so-called because it occurs in the products of the distillation of wood—is produced during the process of fermentation of fruit sugars. Accordingly, by means of a beautiful and delicate test, wood-spirit has been found in important though small quantity in wines and in the spirit distilled from wine—namely, brandy. This observation may be of the utmost importance in aiding the discrimination by chemical means of genuine grape-derived spirit from that distilled from grain. Odd as it may seem, methyl-alcohol is not found in spirit obtained by the fermentation of cane sugar, nor can it be traced in any grain spirit, as in whisky or in rum, or in commercial spirits of wine. Brandies, however, even of the low grade kind and obtained from partially spent grapes or marc, gave distinct evidence of the presence of methyl-alcohol. It is premature to state positively that this test will furnish a means of distinguishing absolutely genuine from "fabricated" wines, or grain spirit from grape spirit, but it is to be hoped that this line of investigation will be further pursued. Suffice it to say that the test which has been regarded to identify the wood-spirit is based upon the action of resorcin on formaldehyde which is produced by oxidising the methyl-alcohol in a special manner. It is interesting to add that there is no reason to believe that pure and matured methyl-alcohol is more injurious than ethyl-alcohol. The amount, at any rate, in wines or spirits must be small.

THE INVESTIGATION AT BELLEVUE HOSPITAL. NEW YORK CITY.

THE investigation which has been undertaken at Bellevue Hospital owing to the charges made against its management has revealed the following facts. During the year 1900 24 307 patients were treated in Bellevue. Of these patients 1720 died, or about 7 per cent. of the entire number treated. This percentage really indicated a larger death-rate than ordinarily could be charged against the hospital since it receives a large number of patients from other hospitals in a moribund condition upon their arrival. The daily census of Bellevue for the year 1899 shows that the average number of patients under treatment was 690 per day. In the year 1900 the average number of patients treated per day was 733. In the year 1899 4081 patients were treated in the alcoholic ward; in the year 1900 3753 patients were treated in this ward. In the male alcoholic ward in 1899 there were 146 deaths; in 1900 there were 160 deaths. The total number of deaths in the female alcoholic ward for these two years was 81, 46 in 1899 and 35 in 1900. The deaths in the male alcoholic ward in 1899 amounted to 3·5 per cent. of the

number of patients treated; in 1900 it was 4·26 per cent. The number of deaths in the female alcoholic ward for the year 1899 was 2·75 per cent. of the patients treated; for 1900 it was 2·41 per cent. In 1899, 1218 patients were admitted to the pavilion for the male insane; of these patients 29 died. To this same ward in 1900 there were admitted 1265 patients, while the number of deaths was 40. The number admitted to the pavilion for the female insane in 1899 was 1049, of which number 17 died, making the death-rate 1·62 per cent. In 1900, 1160 patients were treated n this ward and 32 died, making the death-rate 2·76 per cent. Those responsible for the management of the institution claim that it has been conducted well and that the records of the wards compare favourably with those of any hospital in the city. The figures certainly bear out this claim, but we trust that the investigation will be thorough.

THE SANITARY INSTITUTE.

AT a special meeting of the Council of the Sanitary Institute, Earl Fortescue, Vice-President, in the chair, an address to the King, and signed by H.R.H. the Duke of Cambridge as President, on the death of Her Majesty Queen Victoria was adopted, in which the following words occur:—

"Among the many noble attributes that endeared the Queen to the hearts of her people none was more potent than her widespread sympathy with all classes of her subjects, and in no branch was this more markedly shown during her long reign than in the interest which our late beloved Queen and several members of her Royal house specially showed in the adoption and development of measures for the improvement of the health of the people, and of the conditions under which they, and especially the poorer classes of them, live."

All the medical profession will echo the sentiment thus expressed.

"THE LOGIC OF A CORONER."

WITH reference to an annotation under the above heading which appeared in our issue of Jan. 12th, p. 118, we see that Mr. P. J. O'Keefe wrote to the Registrar-General upon the question of the inclusion of the fracture of the leg as a secondary cause of death in the case of Mary Anne Teresa Ronchetti. The Registrar-General replied, "As you ask for my opinion I may say that your certificate appears to be quite in order and to be in accordance with the instructions issued from this office." This is what we should have expected. Another point of interest came up before the same coroner at an inquest held at Crosby on Jan. 7th to inquire into the death of Mary Jane Woosey, aged 75 years, who died on Jan. 3rd. Deceased had fallen downstairs on Nov. 30th, 1900, and Dr. W. G. Little, who was called in, attended her up to the time of her death. After death he refused to give a certificate and apparently—for the newspaper report supplied to us is not very clear—the case was reported to the coroner who sent his officer or the police to obtain information as to the cause of death from Dr. Little. This information Dr. Little refused to give except, as he stated to the coroner in a letter, "upon summons in a regularly constituted court and upon oath." At the inquest the coroner is reported as saying that Dr. Little was bound to give a certificate. Another passage of the report runs as follows: "In reply to the inspector the coroner said he was perfectly justified in sending his men to medical practitioners to collect information for this court. If the doctors refused the information then all that the inspector had to do was to report it to him and he would know how to deal with the matter." Dr. Little's argument was that as death had occurred within six weeks of the accident he could not give a certificate. The length of time has, of course, nothing to do directly with the question of whether a certificate should or should not be given. But the chief point at issue seems to us to be whether in case of a doubtful death a medical man is justified in giving evidence, naturally not on oath, to a policeman concerning the cause of death. The coroner was of opinion that the medical man was not justified in refusing to do so. The Coroners Act simply states that "When a coroner is informed that the dead body of a person is lying within his jurisdiction and there is reasonable cause to suspect that such person has died either a violent or an unnatural death ..... the coroner ..... shall as soon as practicable issue his warrant for summoning ..... good and lawful men ..... to inquire as jurors touching the death of such person as aforesaid." It is quite clear from this that the coroner must have some information to go upon. But it is equally clear that medical evidence ought to be given directly and upon oath by a medical man, and not be admitted second-hand through the medium of a policeman or a coroner's officer, who cannot know what is the essential part of the testimony he is giving and who is liable to make lamentable omissions or additions and no less lamentable deductions.

ORGANO-THERAPEUTICS IN MENTAL DISEASE.

DR. C. C. EASTERBROOK of the Royal Asylum, Morningside, Edinburgh, has published a valuable contribution to our knowledge of organo-therapeutics in mental disease. He points out that the "immediate nutrition of any organ is of a two-fold nature, hæmic and nervous, and depends upon a proper supply of blood pabulum and of trophic nerve impulses." The brain cortex directly dominates the nutrition of the efferent portion of the central nervous system and thereby it indirectly controls the nutrition of the bodily organs. Hence from prolonged worry or mental strain (cortical nervous disturbance) will follow a furred tongue, anorexia, constipation, and palpitation (peripheral bodily disturbances of nutrition), and the patient will run down in physical condition. Since the discovery of Brown-Séquard of "internal secretions," and of G. R. Murray and Victor Horsley of the specific action of the thyroid extract in myxœdema many therapeutic attempts have been made in the direction of organo-therapeutics, and in recent years this treatment has been extended to mental diseases. A summary of Dr. Easterbrook's results has already appeared in THE LANCET,[1] in the Proceedings of the Section of Pyschology at the meeting of the British Medical Association at Ipswich, 1900. The results of treatment vary according to the published statistics of various writers. Mabon and Babcock have given a summary of over 1000 cases collected from literature and from unpublished cases in American asylums. Collectively the cases amount to 1032, of which 16·8 per cent. are reported as recovered, 24 per cent. as improved, and 59·2 per cent. as unimproved. Dr. Easterbrook states that "many of the recoveries reported were not true tests in that thyroid was employed when there was still a good chance of recovery by the ordinary methods of treatment." In Dr. Easterbrook's series of 130 cases of insanity treated with thyroid extract all the patients were suffering from insanity which at the time was stationary or chronic or regarded as incurable. The results were, on the whole, not favourable. Amongst the symptoms noticed to follow were loss of weight, increased bodily metabolism, quickening of the pulse, phosphaturia, and general cerebral stimulation. The results with women were more striking as regards recovery than with men, and it is concluded that "the thyroid treatment of insanity is more efficacious in women than in men," this being perhaps owing to the fact

[1] THE LANCET, August 25th, 1900, p. 610.

that the thyroid gland is functionally more active in women than in men and that it enlarges during menstruation and pregnancy. The best all-round results were obtained in the insanities connected with child-bearing. In *folie circulaire* the thyroid treatment was found to be useful in aborting the maniacal attacks. As regards the *modus operandi* of the drug it is thought that thyroid probably acts by freely stimulating metabolism and ridding the economy of transition and toxic products. Other substances—e.g., thymus, ovarian extract, orchitic extract, and the like—have similar effects, but the thyroid substance surpasses them in these respects.

CHILDREN IN THE REIGN OF QUEEN VICTORIA.

NOT last among those who honour the memory of our late beloved Queen should be the place of her children subjects. Her long reign was rich in measures devised for their welfare and protection. Until it began practically nothing had been attempted for their good. Trade practice was harsh and unscrupulous without restraint, and public opinion was ignorant or indifferent. Even the law was blindly callous in its rigour, so that we are amazed to find terrible penalties recorded against the petty thefts of mere children. Every measure on the statute-book which is intended to protect the rights of children has come into being within the Victorian era. Factory children, children employed in mines, in brickfields, in chimneys, in agricultural gangs, on canals, on the high seas, pauper children, street beggars and hawkers, acrobats, children in pantomimes, criminal children, all found in their Queen a friend as ready as powerful to help them. The last great act of this series and the crown of her endeavours on behalf of suffering childhood was the comprehensive measure passed in 1889. It grappled with two evils—cruelty practised upon children under whatever conditions, and the corruption of their morals. So great an assault upon the enemies of childhood might well succeed the process of sap and mine by which the same foes had been steadily weakened during 50 years. Its success has been its justification, though not its only one. There are proofs to show that the operation of this Act has accomplished much not only for the welfare of children but for the reformation and happiness of their parents also. It has brought into the dreamy indefinite ethics of the late nineteenth century something of "grit" and practical resolution. The national foot has gone down on abuses in our very homes because they were scandalous abuses which no so-called "liberty of the subject" could excuse. Would that we had more of this righteous determination in dealing with other strongholds of evil practice. With time, and light, and honest minds we are not without hope of further great results. For what we have recorded a liberal share of thanks must be assigned to a Sovereign who all her lifetime strove to do her duty to her country and to her kind.

IMMUNITY AND PROTECTIVE INOCULATION.

IN an address delivered at the annual meeting of the Texas Academy of Science Dr. H. W. Harper gave an interesting account of the various steps which had led up to our present knowledge of immunity and protective inoculation. He recapitulated the facts which led Jenner to his discovery of vaccination against small-pox, and then proceeded to discuss the parallelism which subsists between the phenomena of fermentation, infection, and immunity. His expositions on the chemical facts which have been ascertained as regards the nature of fermentation were very instructive, as also were his remarks on the chemical structure of certain ptomaines and leucomaines. The formulæ given in the address are too complicated to reproduce here. He next referred to the discovery of substances in the blood serum of animals immunised against diphtheria and tetanus which are able specifically to protect other animals against the toxins of these diseases—substances now known as antitoxins—and maintained that it has been shown by different observers that toxins were rendered innocuous by means of antitoxins through a purely chemical process in which biological processes had no share. Dr. Harper then went on to argue that the theories advanced by Pasteur, Metchnikoff, and others are insufficient to explain actual facts. He considered that the existing known conditions of immunity might roughly be divided into two groups—biological and chemical—and the explanations of their occurrence must follow this grouping and must be based on biological and chemical grounds. He believed that in the ultimate analysis the biological explanation will rapidly pass from the body as a whole to its respective organs and their respective cells to the nucleated cells and finally to the origin of the nucleus. His concluding remarks are a little difficult to follow. It is evident that he considers the problem of immunity to be a bio-chemical one, but long and patient investigation will be necessary before the chemical changes taking place between the toxins and antitoxins are fully understood and before the relative importance of the biological and chemical processes can be completely estimated.

UNNECESSARY RISKS IN WAR.

A COMPANY commander serving with his regiment at the seat of war and writing from the Transvaal sends a well-considered and common-sense communication to the *Times* of Feb. 2nd in which he refers to the carrying away of wounded men from the fighting line and the unnecessary risk of life to which this practice frequently gives rise. He is careful, of course, to guard himself against being understood to urge that wounded men should be left to take care of themselves, but he points out how frequently it happens that the natural desire to get a wounded man out of action may not turn out to be the best and most desirable thing to do for the man himself and how it may expose those who do so, or attempt to do so, to unnecessary risk. As far as the wounded man is concerned the movement—as in the case of wounds of the trunk of the body—may be actually injurious to him and in some instances take him further away from skilled surgical aid, for, according to the experience of the company commander, "he is more likely to find a doctor in the fighting line than behind it." Many instances are also cited in which those carrying away wounded soldiers from positions where they might have fared well have attracted the enemy's fire and been killed or wounded. He believes that in the aggregate the casualties occasioned in this way are considerable. "I am, I trust," he writes, "as humane as most people, but also somewhat utilitarian (we are not very utilitarian in the British Army as a rule), and on one occasion, knowing that we were going in for a stiff fight, I warned my company that we were not going in as stretcher-bearers, but to fight, and that no man was to leave his duty for the purpose of carrying away me or any other wounded man. We would want every available rifle in the firing line, for we were going in, I said, to win if we could (we did as it happened); when that business was concluded those of us who might be wounded could be seen to. I have heard of others giving the same order." We consider the company commander to be perfectly right. In every big engagement these attempts to rescue and remove wounded men occur as a matter of natural impulse and are usually prompted by the noblest motives, although this may not be invariably the case. But such attempts are not and, under the circumstances, cannot be

expected to be, well-considered beforehand, nor are they always in the best interest of the wounded themselves. The difficulty, however, is to lay down any rules of guidance or line of action to be followed. All that can be said is that each action must be decided upon on its merits and after a rapid survey of the situation. In ordinary European warfare the present bearer column system is probably the best, not only for systematically stripping a battle-field of its wounded, but for preventing any men from falling out from the fighting line under the pretext of helping a wounded comrade. In the case of South Africa, however, the conditions are either very or altogether different from those of European wars. There is sometimes one slender satisfaction in hearing of wounded men having been left for hours upon the battle-field. It is that in certain cases—those of abdominal wounds, for example—the absence of all movement, and the deprivation of fluid nourishment for the time being, offer the best chances of recovery, because the best obtainable state of physiological rest during the earliest stages of reparative process is thus secured.

TYPHUS FEVER IN MANCHESTER.

TYPHUS fever, a disease which arises principally under circumstances of filth, overcrowding, and destitution, is, owing to improved sanitary conditions, yearly becoming more rare in Great Britain, the last recorded outbreak being that at Sheffield in 1890. The *Manchester Evening News* of Feb. 4th states that, according to a report by Dr. James Niven, a somewhat serious outbreak exists in Manchester. On Dec. 31st, 1900, two young women were admitted into Ancoats Hospital suffering from enteric fever. On Jan. 5th, 1901, two other girls were admitted, the one suffering from enteric fever and the other from typhus fever. On Jan. 8th two more girls, both suffering from typhus fever, were admitted. All these girls had worked at the same place of business as sorters of small rags. It contained two rooms, the one set apart for the sorting of woollen rags and the other for the sorting of cotton rags. All the patients attacked were employed in the woollen rag room—namely, seven in all. The office-boy was also attacked and up to the date of Dr. Niven's report three persons had died. All the girls came from very poor homes, but careful investigation has hitherto been unable to account for the source of the disease. One patient, who lives in I—— street, Ancoats, apparently infected seven other persons, and on Jan. 22nd Dr. Niven and Dr. H. Coates visited her home, but were unable to get in. Entrance was accordingly forcibly effected and the father and two children were found in bed all suffering from typhus fever and too ill to do anything. In addition the mother had already caught the disease, as had also a woman who nursed her, while two children living next door but one to the house were removed to the hospital.

THE FOOD AND DRUGS ACT IN MANCHESTER

ACCORDING to the report of the public analyst appointed for the city of Manchester the total number of samples analysed during the quarter ending Dec. 31st, 1900, was 432, out of which 52 proved to be adulterated. Amongst the noteworthy adulterations was that of spirits to an extent which was at first unaccountably uniform. It subsequently appeared that in two cases this uniformity of water dilution was due to the use of a defective instrument by the publican when reducing his spirits to a certain strength with water. More interest, however, attaches to the report on this occasion on account of the results given of the analyses of a number of samples of arsenical beer. Apart from the arsenic the percentage of adulterated samples was quite low. It is, of course, now well known that the arsenic was due to impure glucose. But Mr. Estcourt points out that besides the firm already publicly incriminated, so far there are at least two other manufacturers, according to his information, who have delivered glucose contaminated with arsenic to brewers in other parts of Lancashire. In regard to the small quantities of arsenic found in beer (ranging from one-tenth to one two-hundredth of a grain of arsenious acid per gallon) he is inclined to think that this may be due to the malt used. Subsequently he found malt on the market used by some brewers which, apart from glucose altogether, would pollute the beer to the extent of one-tenth of a grain of arsenious acid per gallon. This contamination of malt is traced to the fumes arising from fuel containing arsenic used in the drying process. Thus a beer brewed from malt and hops exclusively will not necessarily be pure. As we have said before, the provisions of the Food and Drugs Act seem sufficient to insure the sale of beer free from arsenic and other contaminations. If the Acts are carefully put into force and public analysts will keep a sharp look-out for possible impurities careless brewers will have to mend their ways.

THE following appointments have recently been made at the Jenner Institute of Preventive Medicine. Dr. S. G. Hedin, of the University of Lund, Sweden, has been appointed head of the department of pathological chemistry; Mr. J. Beresford Leathes, Lecturer in Physiology at St. Thomas's Hospital Medical School, assistant in the same department; and Mr. W. J. Young, of Owens College, Manchester, assistant in the chemical department. Dr. A. Moore, Dr. G. Petrie, and Dr. A. McKenzie have been elected to fill the three research studentships, the last-named gentleman being appointed to the Grocers' Company Research Studentship of the Jenner Institute.

THE death is announced, at the age of 70 years, of Mr. John Cordy Jeaffreson. Mr. Jeaffreson was the son of a medical man, the late William Jeaffreson, F.R.C.S., and was married to the daughter of another medical man, Mr. William Eccles, F.R.C.S. Himself a barrister he never practised but devoted himself to writing and to historical research. He was an expert in ancient handwriting and worked under the Commissioners on Historical Documents. Among his best known works were a novel entitled, "Not Dead Yet," and "A Book about Doctors."

A MEETING of the Liverpool School of Tropical Medicine will be held in the Town-hall, Liverpool, on Tuesday next, Feb. 12th, at 2 o'clock P.M., to consider the subject of Health and Sanitation in West Africa and the Tropics, in the light of the researches of the three malaria expeditions of the school. The meeting will be addressed by Sir William Church, Bart., President of the Royal College of Physicians of London, and others. The chair will be taken by the Lord Mayor of Liverpool.

THE governors of the Italian Hospital, Queen-square, W.C., have forwarded the following resolution to His Majesty the King: "That the governors and staff of the Italian Hospital desire to record their profound sorrow at the death of Her Most Gracious Majesty the Queen, and to humbly tender their condolence to His Majesty the King and the Royal Family on the loss of one beloved by the world and whose memory will be revered in many lands."

THE Festival Dinner of the Royal Medical Benevolent College, which was fixed for Tuesday, April 16th, has been adjourned until Tuesday, July 9th. The chair will be taken by the Earl of Rosebery, K.G., the President of the College. Any friends of the institution desiring to act as stewards or wishing to be present on that occasion should intimate their

wishes to the Secretary, at the office of the College, 37, Soho-square, W.

THE Hunterian Oration of the Hunterian Society will be delivered by Mr. John Poland on Feb. 13th, at 8.30 P.M., in the London Institution. The subject will be: "A Retrospect of Surgery during the Past Century." The annual dinner of the society has been postponed to March 15th.

AT a meeting of the British Balneological and Climatological Society, held on Wednesday, Jan. 30th, the President, Dr. Bagshawe (St. Leonards), referred to the death of the late Queen Victoria, and moved an address of sympathy with His Majesty King Edward VII. which was unanimously passed.

MANY members of our profession, and especially members of the Edinburgh University Club, will be very sorry to learn of the death of Dr. Leslie Ogilvie, which took place on Saturday evening, Feb. 2nd. We hope next week to publish an obituary notice.

REFLECTIONS ON THERAPEUTICS.

BY HARRY CAMPBELL, M.D., B.S., F.R.C.P. LOND.,
PHYSICIAN TO THE NORTH-WEST LONDON HOSPITAL AND TO THE WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM.

V.[1]

SYSTEMS OF TREATMENT; FADS AND FADDISTS.

EVERY physician tends after some years of experience to settle down into certain stereotyped methods of treatment of his own, and it is safe to say that these are never exactly the same for any two physicians. From this it is manifest that great latitude is allowed in treatment. This is due partly to the fact that the same malady may often be cured by many different means, but chiefly it is the result of the chaotic state of therapeutics. Of all the inexact sciences therapeutics is probably at the present day the most inexact and the furthest from reduction to a rigid system; and this is not because of any want of enthusiasm in those who devote themselves to it, but from the inherent difficulties it presents. As a consequence opportunity is offered for the introduction of a multitude of methods and of endless cranks and fads. We are like children wandering in the dark seeking for the light, and it is often impossible when a new treatment is advanced to say whether it will prove a mere will-o'-the-wisp or a true guide. Our ignorance does not permit us at once to silence the originator of what may ultimately prove a valueless—it may even be harmful—treatment; we are compelled in fairness to give him a hearing, and some of us, in the extremity of impotence, may even be persuaded to try the treatment ourselves, and it may be years before it is relegated to the oblivion it deserves. Nothing better shows the unsettled and nebulous state of present-day therapeutics than the fashion which prevails in treatment, pharmacological or other. It is scarcely an exaggeration to say that here fashion is as fickle and changeable as it is in dress. Every dispenser can testify to the truth of this so far as drugs are concerned.

One obvious moral is deducible from these considerations. It is highly undesirable, not to say blameworthy, for the physician to advocate a new treatment without first thoroughly testing its efficacy. After Newton had been working for some years at his theory of the law of gravitation there was still wanting some evidence which should conclusively prove his point; so instead of publishing his views to the world he locked up his papers in a drawer where they remained for 17 years. When he again worked at the subject the needful evidence was forthcoming and the law was established upon an enduring basis. One can scarcely look for such restraint among our modern therapeutic enthusiasts, but it ought not to be too much to demand of them that they should at least make moderately certain of the efficacy of their methods before giving them to a too credulous world. Neglect of this precaution is burdening medical literature with much that is valueless and rendering it an increasingly hopeless task to winnow the grain from the chaff. The worthlessness of such communications is suggested by the fact that it is precisely the least eminent who are most prodigal of new methods. By all means let us seek to advance therapeutics and be on our guard against a paralysing and deadly routine which is fatal to all progress, but let us also beware not to advocate a new treatment before we have well tested evidence of its efficiency.

Every physician who is worthy of the name has his fads, and it is perfectly right and proper that he should, provided that they have a sound basis; for faddism carries with it a firmness of conviction and an enthusiasm which issue in energetic action, and inspire the patient with a wholesome and most salutary confidence. What the physician has to be on his guard against is a narrow faddism. Let him have his fads, but let them be as broad-based as medicine itself. Note this significant fact, that fads become more and more narrow as the faddists stand lower and lower on the ladder of eminence. If a physician has one all-absorbing fad, and more especially if that fad rests upon a doubtful basis, depend upon it his mental horizon is limited; indeed, some faddists come perilously near the "fixed idea" in their fads, one notion dominating their entire medical thought.

It is nevertheless a fact that some even of these narrow faddists achieve considerable success in practice, and for this reason, that the method of the faddist may be, and often is, well suited to a particular class of case, and, being carried out with enthusiastic conviction and persistency, does do undoubted good in those cases; no small part of the good resulting from the faddist's belief in himself and his system, which begets a like faith in the patient, thus bringing into action the potent factor of suggestion. Moreover, the faddist *has* a system, and it is often better to have a system of some sort, even though it be a poor one, than none at all. Hence the faddist often achieves brilliant results where others have failed, and the patients he cures bruit his fame abroad, and so increase his practice, while those who have got no good from his treatment are more likely to hold their peace.

Now, if a narrow faddism can do so much the obvious moral is that we should carefully study the methods of all the faddists and seek to apply them severally to their appropriate cases. Therein lies the difficulty—to fit the treatment to the disease. It is easy enough to apply the same cut-and-dried treatment to each and every patient, but to apply the correct method to every case is a much more difficult matter; this it is that tests the true skill of the physician. The really great physician is a universal faddist. Speaking for myself, I confess that I am ready not only to listen to the views of the legitimately qualified faddists, but I have gone out of my way to study the methods of that large army of practitioners who have not been admitted within the portals of the profession, and I have learned much that is useful from them. Some of their methods well repay study.

Interesting and instructive though it might be I forbear to give an exhaustive list of the fads of our profession, and will refer to a few only. Some are for starving all their patients, others for feeding them up; some believe in alcohol, others in staunch teetotalism; some are for a strictly vegetable diet, others for a mixed diet; some hold that little fluid should be drunk, others that it is well to drink copiously; some have a profound faith in drugs, others place little reliance on them; then there are the grape cure, the water cure, the raw meat cure, the sunlight cure, the mud cure, and a host of other panaceas, each and all of which doubtless do good in certain cases: the mistake is to suppose that any one is universally applicable.

There are also unjustifiable and pernicious fads. We find one medical man resorting to a wholesale amputation of the clitoris, another referring all the ills of the body to the inferior turbinate bones and advocating the knife accordingly. It is pitiable indeed to think what mutilations have been inflicted from such mistaken notions; and yet it is probable that there is scarcely any system of treatment which might not do good to some particular case. Were we to remove the clitoris from a thousand women in succession we should as likely as not benefit some one among them. I care not how far-fetched or eccentric the treatment we adopt, it will

[1] Nos. I., II., III., and IV. were published in THE LANCET of Jan. 5th (p. 51), 12th (p. 122), and 19th (p. 201), and Feb. 2nd (p. 348), 1901, respectively.

in all probability do good in some cases. Let us feed all our patients on boiled acorns, or starve them for a fortnight, or order them to drink many gallons of water daily, and although doubtless we shall kill many we shall stand a good chance of curing a few.

ANNUAL REPORT OF THE MEDICAL OFFICER OF HEALTH OF THE ADMINISTRATIVE COUNTY OF LONDON.

THE report before us, which relates to the year 1899, is the eighth of a series the first number of which was published in 1892, just two years after Mr. Shirley Murphy's appointment as medical officer of health of the County of London. The report is divided into two parts. In THE LANCET of Jan. 5th we noticed Part II. which deals principally with questions of sanitary administration somewhat briefly in a leading article. To-day we commence a review of Part I. which treats almost exclusively of the vital statistics of the metropolis. From a medical point of view this is in many respects the most important section of the work, and to its preparation Mr. Shirley Murphy has evidently devoted learning and energy. Having perused it with care we are able to say that it compares favourably with any of its predecessors; in regard to many we have spoken in terms of high commendation. In our judgment the facts in this year's rep rt are skilfully arranged and classified: Mr. Shirley Murphy presents them in such a fashion that the reader should find no difficulty in apprehending the true bearing of the lessons they teach—lessons which he emphasises with good effect for the instruction of the public, and especially for the guidance of the London County Council who have hitherto shown a commendable disposition to act in accordance with his advice. A further object will unquestionably be attained by the publication of these useful reports, for they will shortly come to be recognised as the standard British authority to which constant reference may be made in regard to the prevalence as well as the intensity of the various epidemic and endemic diseases from time to time, and also in regard to the measures which experience has shown to be most appropriate for the suppression of sickness and for the preservation of the public health in a vast and thoroughly typical urban community.

The population of the administrative county of London estimated to the middle of 1899 was 4,568,689. The populations of a considerable number of the existing sanitary districts of London are very small; in 13 out of the 43 they are below 50,000, whilst in five cases they do not reach 25,000. It is well known that rates of birth or of death calculated on small numbers of the living are unreliable. Accordingly, inasmuch as the re-adjustment of metropolitan areas which has recently taken place reduces their number whilst increasing their size, the change must be regarded as an advantageous one from a statistical standpoint; for, according to the best estimates available, we find that one only of the new London boroughs will contain less than 50,000 inhabitants, whereas all but six of them will number more than 100,000. Particulars of the rates of birth and the general death-rates of the sanitary areas of London have already been noticed in these columns in connexion with the annual summaries of the Registrar-General; we shall, therefore, not refer to them further now. Mr. Shirley Murphy, however, carries his analysis of mortality much farther than it is carried in the Somerset House returns and thus suggests additional points for consideration. In Table I. of his report Mr. Shirley Murphy gives the means of comparing the mean annual deaths in the nine years 1891-99 with the number that would have occurred had the death-rates of the 1881-90 period been maintained throughout the nine following years, and the annual number of lives gained or lost in the later period at each age-group is shown. He further expresses this gain or loss in terms of "life capital," which is obtained by applying the mean future lifetime (as ascertained by a life-table) to the number of lives gained or lost at each group of ages. By this means he shows that during the last nine years there has been a mean annual saving in London of 4095 lives, representing a mean annual salvage for 172,763 years of "life capital." The foregoing is a more accurate method than that which is ordinarily adopted for showing the effect on a community of fluctuations in the death-rate, and it is one which we hope shortly to see universally adopted. This can be done with facility by any medical officer of health who will provide himself with a life table of his district and learn to use it. As regards the County of London Mr. Shirley Murphy shows that the number of lives gained annually has increased in each period from 1891-94 up to 1891-98, although in the following year there was a slight decline. On the other hand, the proportion of "life capital" gained to each life saved has decreased in each period up to 1891-98 and has increased in the period 1891-99. This apparent contradiction is due to the fact that the amount of "life capital" gained is not directly proportionate to the number of lives saved, but is dependent also upon the ages at which the saving is effected. Mr. Shirley Murphy next proceeds to show the causes of mortality in respect of which there has been a saving or a loss of "life capital." We have not space to follow him in detail, but we may note his generalisation, which is to the effect that "the net gain of life and 'life capital' secured in London is a balance between gains and losses from particular causes of mortality, and that while in respect of some of these causes, such as phthisis, there has been gain in each of the periods compared with 1881-90 among persons both under and over 25 years of age, in others, such as cancer, there has been loss in practically all of these periods at each age-group. Again, in respect to certain other causes of mortality this constancy is not manifest and often gain in one age-group is in the same period attended by loss in the other age-group."

Infant mortality is now universally accepted as the most reliable test of sanitary condition because of the certainty wherewith it can be computed, wherever an accurate register of births and deaths is available. The deaths occurring in any community, great or small, are calculated directly on the births, whilst the uncertain, and, when at long distances from the census, wholly unreliable factor of population is altogether eliminated. Infant mortality in the Administrative County of London during 1899 was in the proportion of 166 per 1000 births, a rate which is somewhat in excess of the average. London had in the period 1889-98 a lower infant mortality than had any other great English town of more than 200,000 inhabitants except Bristol and West Ham, and in 1899 a lower infant mortality than any such town except Bristol. In the several sanitary districts the rates varied considerably, but by grouping these areas it appears that the eastern districts had the highest infant mortality—namely, 179—and the northern the lowest, 154, the infant mortality of the southern, central, and western groups being intermediate between these extremes.

In connexion with the vital statistics of London we are pleased to notice that the Registrar-General now publishes in his weekly return a table giving the number of new cases of infectious disease notified in each of the London boroughs. As the Registrar-General's returns are widely circulated, both in this country and abroad, the publication of this additional information for London in the return for the first week of the century is an event upon which the authorities at Somerset House as well as at Spring Gardens are to be congratulated.

(To be continued.)

UNIVERSITY OF CAMBRIDGE.—The special board for biology and geology have recommended that the annual grant of £100 made by the University towards the maintenance of a table in Dr. Dohrn's Zoological Station at Naples should be continued for a further period of five years.—The Senate has authorised the obtaining of specifications and tenders for the erection of the Humphry Museum as a part of the new medical school buildings. It is to be hoped that additional contributions to this memorial of a great teacher will be received in order that its completion may be insured without delay. The old museum, which was structurally unsafe, has now been demolished.—Sir M. Foster has been appointed an additional member of the syndicate for the provision within the University of instruction in military subjects.—Dr. Rivers has been appointed a member of the Moral Sciences Board.—At the congregation on Jan. 31st the following degrees were conferred. M.B. and B.C.: E. E. Glynn, Clare; R. A. Walker, Clare; and J. P. Candler, Corpus. M.B. only: S. V. Pearson, Emmanuel. B.C. only: W. H. O. Woods, Selwyn Hostell.

Obituary.

BOWATER JOHN VERNON, F.R.C.S. ENG.,

OPHTHALMIC SURGEON TO ST. BARTHOLOMEW'S HOSPITAL.

MR. B. J. VERNON was the second son of the late Rev. Mark Henry Vernon, who was for 40 years vicar of Westfield in Sussex. He was born Oct. 23rd, 1837, and died on Jan. 28th, 1901. At the early age of ten he was entered at Marlborough College where he remained till Midsummer 1856. He there obtained a thoroughly sound education and it will surprise some of the friends of his later life to learn that he was a notable athlete, easily distancing all his competitors at the high jump, in hurdle races, and in short-distance running. In advanced life the deliberate manner in which he habitually moved concealed to a large extent his real strength of limb and capability of exertion. He may be said to have entered the profession by becoming a pupil at the Sussex County Hospital, Brighton, under the immediate supervision of Mr. Jowers, a highly intelligent surgeon, and he remained here, familiarising himself with general medicine and surgery for three years. He then came to London and entered St. Bartholomew's Hospital. After the usual three years' attendance upon lectures he was appointed in 1862 house surgeon for a year to Mr. Wormald and for a second year to Sir James, then Mr., Paget. He took the hospital scholarship in 1862. He passed the Membership of the Royal College of Surgeons of England and the Licentiateship of the Royal College of Physicians of London in 1862 and took the Fellowship of the College of Surgeons in 1864. In the meanwhile he had acquired so good a knowledge of anatomy and was so clean and excellent a dissector that he was made demonstrator of anatomy, which post he held for several years.

When the ophthalmic wards were opened at St. Bartholomew's Hospital in the summer of 1870 he was one of the two surgeons who were appointed—a piece of advancement for which he was indebted to his having been long in attendance at the Moorfields Ophthalmic Hospital and to his having been for some years curator of the museum. This latter post not only afforded him frequent opportunities of seeing the most advanced methods of treatment in ophthalmic practice in the hands of such masters as Sir William Bowman, Mr. Critchett, and Mr. Hulke, but also enabled him to pursue his natural bent for microscopical research, and indeed throughout life he was an excellent microscopist and could prepare, mount, and describe a rare specimen with artistic skill. His hands were adapted for such work. Before he suffered so much from rheumatism his long slender and firm but supple fingers used knife and forceps and scissors with unerring precision. He was an original member of the Ophthalmological Society, which was formed in 1870, though he only attended one or two of the earlier meetings and declined being elected upon the council on grounds of health. He was attached as ophthalmic surgeon to the Great Northern Hospital, and for no less than 27 years to the West London Hospital, in the affairs of which he took a very active interest, acting as secretary to the staff for several years. He was extremely regular in attendance at both places. He had all but completed his term of service at St. Bartholomew's Hospital at the time of his death, as he would have had to retire by seniority next year in accordance with the rules of the hospital.

His health never appeared to be strong; he suffered from indigestion and in the later period of his life from rheumatism or rheumatic gout, which was probably inherited, and affected chiefly the wrist-joints, which were occasionally very painful and swollen, though without appearing to interfere in any way with the neatness and delicacy of his operations. He has often said that at such times if he were left in a room with a closed door he would find himself quite incapable of getting out from the impossibility of turning the handle. A friendly grasp of the hand was appreciated in more senses than one and could not be reciprocated. He was essentially orderly and methodical in all his work. He practically organised the ophthalmic department of St. Bartholomew's Hospital as it now stands. He was an admirable clinical teacher. With a considerable fund of quiet humour he would elicit the chief facts of each case as it was presented to him. If the patient was admitted the notes of the house surgeon were carefully scanned and criticised and material points that had been omitted were added. He was never anxious to operate nor did he ever appear to be desirous of showing his address in the use of instruments. In every operation he gave to the onlookers the feeling that it had only been undertaken because absolutely necessary and that having been determined on it was done as dexterously as possible. He was never hurried, never taken by surprise. Every stroke told; every emergency was anticipated; and it was rare indeed for one of his cases to do badly. His opinion was highly esteemed, not only by his own colleagues, but also by many of those to whom he had given instruction, which secured for him a remunerative but very unostentatious practice. He kept himself well abreast of modern ophthalmological research and there were few proceedings that promised success he did not try at St. Bartholomew's Hospital, though the natural bent of his mind was eminently conservative.

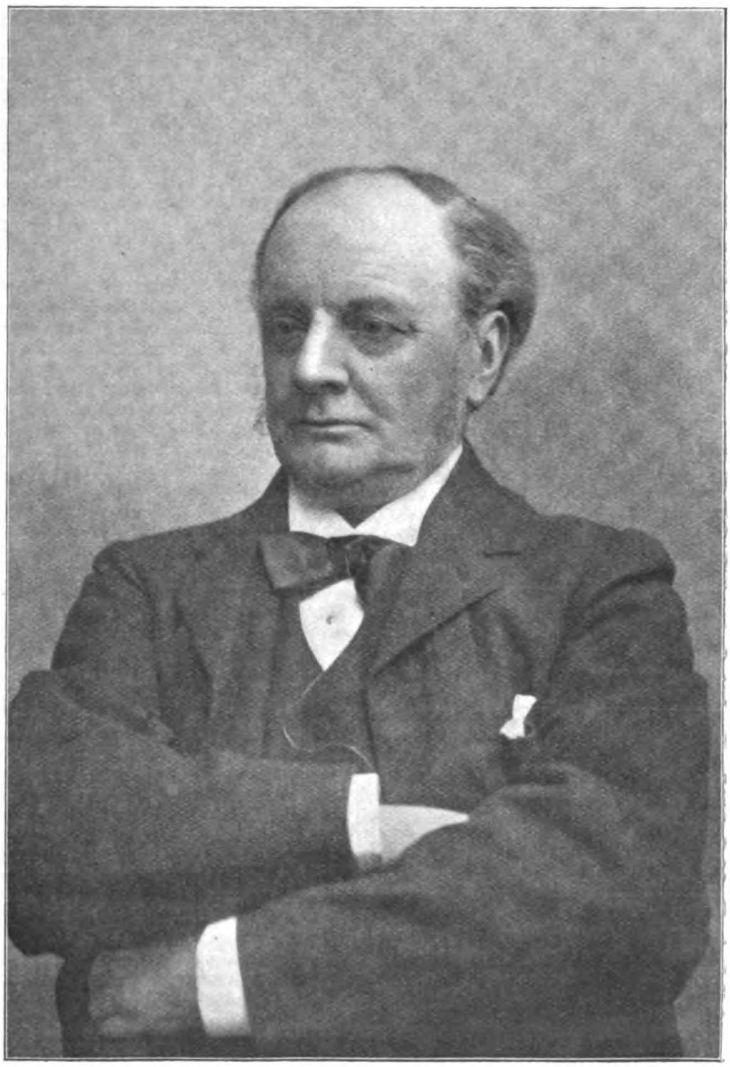
His interests were many and various. He was a keen sportsman, and probably the greatest pleasure he had was to run down to his old friend, John Henry Salter of Tolleshunt D'Arcy, for a day or two in September and bring down a few birds after a stiff walk over the stubble. On such occasions he would return to his work with a firmer and more elastic tread and perhaps with a ray of colour to brighten his naturally dark complexion. He was fond of plants, knew most of the English field flowers by name, and no more grateful remembrance could be sent him by a friend in the country than some wildling of nature orchid it might be, or cyclamen or parnassia, which he would wear as a buttonhole. He loved animals too, and his interests were divided between dogs and birds, the latter, perhaps, claiming most of his attention. He kept many canaries of pure breed, and at one time obtained several with pink feathers by feeding them largely on Chili pepper, but ceased the experiment when he found that some died with small abscesses in the liver, which he attributed to the effects of that fruit. He was of liberal disposition and not unfrequently helped with gifts of money necessitous out-patients who presented themselves at his desk when he saw that food rather than medicine was wanted. Also which was perhaps a still greater tax on his generosity, he would give to a young friend one of his favourite linnets or canaries.

The end came suddenly. He had been at the hospital on Jan. 19th and saw both his in- and out-patients, though complaining of cough and cold. On Sunday, Jan. 20th, he had some kind of spasm of his heart perhaps accompanied by dilatation and causing intense dyspnœa; a second or third attack proved fatal, and thus St. Bartholomew's Hospital was deprived of one of the most gentle, kindly, courteous souls it has ever nourished. The conservatism and loyalty of his character were curiously shown in the fulfilment of his own desire, expressed on more than one occasion, that having been born in the year of the Queen's accession he should be content to end his days with the close of the reign. The little group of mourners who surrounded the grave in which his remains were being deposited—his relatives, his able colleague, Mr. Jessop, and his attached former house surgeons, Dr. J. Attlee, Mr. E. W. Brewerton, and Dr. J. A. Nixon—could hear distinctly the booming of the guns which saluted the body of the Queen as it was borne across the Solent that winter afternoon. Whilst it deepened the impressiveness of the ceremony no circumstance, could he have known it, would have afforded him greater satisfaction.

Mr. Vernon was not a voluminous writer, his energy being chiefly expended in teaching. He contributed, however, several articles to the St. Bartholomew's Hospital Reports. One of these papers was on Congenital Myopia, another on Herpes Ophthalmicus, and a third on Tubercle of the Eye. All of these were characterised by lucidity of expression and gave evidence of care and research. He also for some years supplied reports on ophthalmology to the *Medical Record*.

JAMES EDWARD PRICHARD, M.B. OXON., M.R.C.S. ENG.

DR. JAMES EDWARD PRICHARD died at his residence "Combedale," Redland-road, Bristol, on Feb. 2nd in his fifty-second year. The deceased, who was a son of the late Dr. Augustin Prichard, of Clifton, and a brother of Mr. A. Prichard, senior surgeon to the Bristol Royal Infirmary, received his medical education at the University of Oxford and University College Hospital, London. He graduated



BOWATER JOHN VERNON, F.R.C.S. ENG.

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UNIVERSITY OF ILLINOIS.

B.A. and M.B. at Oxford in 1879, and took the diplomas of M.R.C.S. Eng. and L.S.A. in 1878 and 1879 respectively. After holding the appointments of house physician at University College Hospital and house surgeon at the Tiverton and Swansea Hospitals, Dr. Prichard commenced practice in Bristol, and at the time of his death held the appointment of surgeon to H.M. Prison at Horfield. The deceased was vice-chairman of the Horfield School Board before the extension of the city boundaries. Dr. Prichard had suffered from carcinoma of the bowel for some time and a few months ago Dr. James Swain performed colotomy for his relief. Dr. Prichard, who was unmarried, was very popular with his fellow-citizens and will be much missed in Clifton and Bristol.

SEVENTH REPORT BY MR. VICTOR HORSLEY TO THE REGISTERED PRACTITIONERS OF ENGLAND AND WALES.

SINCE my last report of the proceedings of the General Medical Council some important events have occurred in the work of the Council: the English College of Physicians and Surgeons have repudiated their obligations under the Medical Act of 1886; the question of medical aid associations has been further advanced; the indefensible confusion of the finances of the Council has been further exposed and will, it may be hoped, shortly be remedied; certain serious penal cases involving in two cases new points have been decided; and finally the *personnel* of the Council has been altered with, as a result, a notable improvement in the conduct and progress of business.

THE REVOLT OF THE ENGLISH COLLEGES AGAINST THE MEDICAL ACT, 1886.

The most serious attempt that has ever been made to injure the Medical Act of 1886 is the recent revolt of the Royal College of Physicians of London and the Royal College of Surgeons of England against the authority of the General Medical Council. It will be remembered that the Act of 1886 was drawn up in the hope that a one-portal system might in substance be arrived at by honourable understandings whereby the guilds and corporations should sink their individual claims more completely than had been provided for in the Act of 1858. Since the foundation of the Council by the Act of 1858 its proceedings have often been disfigured by attempts on the part of one or more corporate bodies to gain special privileges or to retain what, though nominally termed ancient rights, are in effect provisions which are disadvantageous to their competitors in diploma granting. It has, however, been reserved for the College of Physicians of London and College of Surgeons of England to adopt an attitude in regard to the recent educational regulations of the Council which promises to resuscitate the worst features of the earlier troubles of the Council.

The matter at issue raised by the Colleges is simple, being only question of the right of the Council to decide where a student's science career can best be passed, but it is made by some to embrace the wider question whether the Council has any statutory authority over the earliest stages of medical education. Thus it is contended by the English Colleges that the Council has no authority whatever over students at any period of their education and that the edicts of the Council on the subject of the curriculum which have from time to time been, in accordance with the slipshod practice of the Council, termed recommendations, resolutions, suggestions, &c., are not in any way binding on the corporate bodies.

The present dispute turns on the interpretation of Section 18, &c., of the Medical Act, 1858. The terms of the section leave no doubt in the mind of an impartial reader that the Council was intended by the Act to have complete authority over all stages of the medical curriculum and of course it has always worked on that understanding. But as that position is now contested by two of the corporate bodies it is obvious there are only two courses open to the Council. Either a so-called friendly action can be tried at great cost to the profession, with probably only the result of obtaining a worthless decision—for, as the recent case of Hunter shows, our highest judicial authorities know nothing about medical education or even about the granting of medical degrees by the universities. Or the matter can be settled in an amended Medical Act in which the powers and duties of the Council would be laid down in such minute detail as to prevent the possibility of any corporation seeking to separate itself from the federation which the Council constitutes. The previous unfortunate experiences of the Council in its actions against the College of Physicians and the late Mr. Hunter will, it is to be hoped, prevent any resort to litigation in this really contemptible affair. It may be hoped that the time and attention of the Council and profession have not been wholly wasted in this matter, as such demonstrations of self-interest on the part of a corporation can only have the effect of furthering the adoption of the much required one-portal system. The general feeling of the Council, it may be added, is far more favourably disposed towards the one-portal system than it was three years ago.

MEDICAL AID ASSOCIATIONS.

The attitude of the Council on this subject has become considerably strengthened, but, as will be seen from the press reports of the last session of the Council, the report of the Medical Aid Association Committee as presented was misleading and still remains unsatisfactory. The matter at issue is the question of the formation of a conciliation board. It will be remembered that this important subject was first raised in 1899 by Dr. Bruce, Direct Representative for Scotland, and it would naturally be a great gain if his original proposal could be successfully accomplished. The idea of a conciliation board, as proposed by Dr. Bruce, was that representatives of the profession and representatives of the friendly societies should meet in conference and draw up heads of agreements on the fundamental principles underlying the proceedings and the working of the medical department of the friendly societies. But in 1898 the General Medical Council appointed certain members to receive a conference of the leading members of the friendly societies so that there might be an interchange of views before the constitution of the conciliation board could be arranged, and at this meeting the all-important question of agreeing upon a wage limit for membership was brought up. The representatives of the friendly societies informed the representatives of the General Medical Council that under no circumstances would the friendly societies consent to this question being raised at a conciliation board. At the annual conference of the officers of the friendly societies that same year this hostile attitude was affirmed. At the time when Dr. Bruce's project was mooted in the General Medical Council I drew attention to this matter and to the primary importance of determining before the meeting of a conciliation board that any such board must have full power to discuss all questions which affected the interests of the profession and above all the fundamental question of the financial position of persons who might seek to obtain the special medical benefits offered by a friendly society. If the conciliation board commenced work with their hands tied to the extent proposed by the representatives of the friendly societies it is plain that any medical representatives who took part in such proceedings would be sacrificing the interests of their fellow-practitioners. The report of the Medical Aid Committee presented last session is unsatisfactory because it in nowise provides for the safeguarding of this point and because it conveys an erroneous rendering of the attitude of the British Medical Association on this question. It is, however, only an interim report. The final report is promised for the next session.

THE FINANCES OF THE COUNCIL.

I drew attention two years ago to the condition of the finances of the Council and pointed out that for a number of years the income had been steadily falling whereas the expenses had been year by year rapidly increasing; further, that for years there had been a deficit, this indeed amounting in 1898 to over £2000 on a turnover of £10,000; that although to meet this deficit and increased expense there were certain funds in the possession of the branches of the Council the financial arrangements between the Council and its branches were not only very confused but in part positively illegal, and that the Irish Branch was practically bankrupt. These statements, though officially denied by the treasurers, Mr. Bryant and Sir Dyce Duckworth, have been fully confirmed by the events and disclosures of the last two years. On Dec. 4th, 1899, I obtained the appointment of a special finance committee to examine into

the facts. That committee consisted of the trustees of the Council and its branches as well as the ordinary finance committee. The report which they furnished the Council was so useless that I moved that the committee resume their work, and I specified three references that the committee were to report upon—namely: (1) the financial position of the Council and its branches as regards assets and liabilities; (2) the relations of the income and expenditure of the Council and its branches for the last 10 years; and (3) the measures that appear to be desirable to place the Council's finances on a satisfactory basis. In presenting their report at the recent session the committee deliberately refrained from reporting on the most important of these references—viz., how the finances of the Council could be put upon a proper basis—and instead of reporting properly on the other two the committee merely made a few suggestions for small domestic economies connected with the arrangements of the Council meeting. Further, the general narrative of the report presented at the recent session by this committee was written in a highly optimistic tone, and though an annual deficit of £110 was admitted on the average of the last 10 years the committee stated that the condition of the finances of the Council was not serious. It is hardly credible, but nevertheless the fact, that the Finance Committee, the members of which formed the majority of the special committee, stated in even their imperfect report six months before that the average yearly deficit on the last seven years was over £600, that to cover this the Council was "spending its capital," and that "the Council ought seriously to consider whether it is not possible to reduce its expenditure to a very large extent." It is quite obvious that these two reports are self-contradictory. The feeling in the Council of dissatisfaction with the way in which the finances were being dealt with was so marked that in spite of a speech by Dr. MacAlister, well calculated to mystify anyone not familiar with the facts, and a personal appeal by the President to pass the report and so close the matter, the debate was adjourned in order that the subject should be thoroughly threshed out at the next session. Possibly the chairman of the Business Committee, Dr. MacAlister, may again succeed, as he has done in the last three sessions, in shelving this important if unpleasant subject from day to day until the last day of the session when everything is hastily rushed through, but I have every hope that the last two years' work on this point will finally result in a thorough reform of the administration of the funds of the Council.

PERSONATION OF REGISTERED PRACTITIONERS BY FRAUDULENT PERSONS.

At the November Session, 1898, I carried a motion in the Council instructing the Executive Committee to report on the subject of fraudulent personation of practitioners and on the best method of securing accuracy of registration. The report of the Executive Committee being useless the Council on my motion appointed a special committee to deal with the subject. The committee, of which I was appointed chairman, reported fully two years ago, but by reason of strong official resistance and continual shelving of the report by the chairman of the Business Committee, Dr. MacAlister, the question and the report have not yet receive adequate consideration.

PERSONNEL OF THE COUNCIL.

The profession is to be sincerely congratulated upon the fact that by reason of various changes in the *personnel* of the Council questions involving progress and reform are certain to receive much more favourable consideration in the future than in past sessions of the Council.

Jan. 31st, 1901. VICTOR HORSLEY.

PRESENTATIONS TO MEDICAL MEN.—At a numerously attended meeting of friends and inhabitants of Llanerchymedd, Anglesey, held on Jan. 30th, Mr. William Evans, L.R.C.P. Edin., M.R.C.S.Eng., on his retiring from medical officership of the Llanerchymedd district, covering the long period of 48 years, and medical officer of the workhouse since its opening in 1869, was presented with an address, a portrait to be preserved in the guardians' board-room, a silver tray, and purse of gold, as tokens of esteem and regard and a recognition of the fidelity with which he discharged his official duties.

THE RECENT OUTBREAK OF DIPHTHERIA AT OLD HEATH, COLCHESTER.

THE *Essex Telegraph* of Jan. 5th, 1901, reported that the sanitary misfortunes of Old Heath, a hamlet on the outskirts of Colchester, to which one or two references, direct and indirect, have already been made in our columns, culminated in an outbreak of scarlet fever and diphtheria. These two diseases, so fatal during the early years of life, have now fortunately subsided, but not without some loss of life.

There are many small communities, especially such as are situated in the outlying districts of large towns, where outbreaks of scarlet fever and diphtheria are present, and there are some where they frequently recur; and, as a rule, the only lesson, if any, to be drawn from such epidemics is that the locality requires some obvious sanitary reform—a drainage scheme, drastic treatment of irresponsible landlords, an isolation hospital, or a more modern method of administration. But the plight of Old Heath, Colchester, was associated with, or rather perhaps resulted in, a correspondence which is of general interest, and it may be instructive to our readers to have the whole story before them, seeing that it involves a consideration of the question as to how far the method of treatment adopted by a public official can reasonably be challenged.

The Public Health of Colchester at the End of the Third Quarter of 1900.

At the beginning of October, 1900, Dr. George Brown, the medical officer of health of Colchester, published a report which showed that the public health of the borough was not wholly good, and his figures mentioned seven cases of diphtheria at that time. The seven cases of diphtheria had, he stated, occurred in different quarters—two in the Canterbury-road, one at Hythe, and four at Old Heath—though he gave it as an opinion that "the malady has evidently a local origin, local in being caused by the houses themselves and their surroundings rather than the causes being attributable to the whole district." About this time the attendances at the Old Heath Board School were very much lowered by the abstention of a large number of children through sickness, and the school was closed at Dr. Brown's instance on Oct. 1st, not to reopen for continuous instruction until Jan. 21st, 1901. This sickness seems to have been greatly prevalent in the Old Heath district and Dr. Brown thus refers to it: "In addition to the diphtheria which has affected the district a large number of children have suffered from quinsy or inflammation of the throat. ..... The disease was of a septic or poisonous type caused by the air being impregnated by a large quantity of manure spread over a field on the west of the village." Dr. Brown's report does not show whether his diagnosis of quinsy was made from actual inspection of the throats of the sufferers. The report closed with the announcement that the infectious hospital of Colchester, at Myland, contained certain cases of diphtheria—four apparently, but the wording of the paragraph is not very clear.

The Value of Antitoxin.

There was nothing on the face of Dr. Brown's report of a particularly sensational character, but it proved to be the starting point of a local difference of opinion the cause and developments of which are of considerable importance not only to all medical men and sanitary authorities but to the public. On Oct. 20th there was published in the *Essex County Standard* a correspondence between Mr. E. A. Hunt, senior surgeon to the Essex and Colchester Hospital and a member of the School Board, and the municipal authorities of Colchester. This correspondence we have already referred to in THE LANCET and the gist of it is as follows. On Oct. 4th Mr. Hunt found two children at Old Heath suffering from diphtheria. On the following day he found that a third child of the same family showed symptoms of diphtheria. He injected the children with anti-diphtheritic serum and notified the three cases as diphtheria to the medical officer of health who took the two elder children into the infectious hospital, but the third one, an infant, aged eight months, was not admitted Mr. Hunt

wrote for an explanation of this, and in his letter also asked whether it was the medical officer of health's "custom to use the antitoxin in diphtheria cases at the infectious hospital." The medical officer of health called upon Mr. Hunt and said that he had never found it necessary to use the antitoxin, and that the baby was not admitted to the infectious hospital because there was no room for it; and in a letter following the interview he promised "if I find it necessary to inject your patients or any other at the infectious hospital you may rest assured that it shall be done."

During October and November the health of Old Heath did not improve, several cases of diphtheria were notified and the school remained closed, as already mentioned. Mr. Hunt now took upon himself the task of attempting to explain through the lay press the merits of the antitoxin treatment of diphtheria, and this he did in a letter dated Oct. 19th, 1900, and published in the *Essex Telegraph* and *Essex County Standard* of Oct. 27th, pointing out that his objects in taking up the matter were "first, to advocate and advertise throughout the borough one of the most blessed remedies ever vouchsafed to man ..... and second, to remove the reproach from Colchester that in its infectious hospital this remedy was not in use." Later Mr. Hunt published a further argument in favour of the antitoxin treatment of diphtheria, reinforcing himself with the opinions of Dr. J. C. Thresh, the medical officer of health of Essex county, and of Dr. J. J. Macgregor, surgeon to the Essex and Colchester Hospital. Mr. Hunt stated that before the board school was closed 40 children were absent suffering from sore throat. These, he said, were the children described in Dr. Brown's report as suffering from quinsy or inflammation of the throat, but according to Mr. Hunt there could be no doubt that some, if not many, of these cases were diphtheria, for evidence had been submitted to him that in certain cases diphtheritic paralysis had ensued. On Saturday, Nov. 3rd, appeared a letter from the medical officer of health in the two newspapers above mentioned. Dr. Brown did not categorically state that he would not use the antitoxin in the treatment of diphtheria, but he said that "the Local Government Board has not yet advised any sanitary authority to use the much-vaunted antitoxin," adding, "I freely confess that I have not bowed the knee to the medicinal Baal in the treatment of this disease (diphtheria), but I do not in any way consider that this is the only or chief remedy in this malady, as the remedies employed at the infectious hospital for some years past have rendered antitoxin unnecessary, and I consider the results achieved there are incomparably superior and more satisfactory than those given by the serum treatment."

The School Board demand an Expert Inquiry.

Towards the end of October the Colchester School Board, feeling that some excellent work that had been done at the board school at Old Heath was being entirely sacrificed by the continued closure of the school owing to diphtheria, demanded an expert inquiry into the subject. Mr. Hunt moved a resolution at the meeting of the school board held on Oct. 26th to the effect that the town council should call the Local Government Board into consultation and that an expert in outbreaks of diphtheria should be sent to assist the council in endeavouring to discover the cause of the diphtheria and to stop its spread. This resolution was carried *nem. con.*

The *Essex Telegraph* on Nov. 10th contained a brief letter from the medical officer of health relative to the outbreak at Old Heath in which the following somewhat remarkable passage occurs: "But Mr. Hunt rushes into a long statement about a treatment of disease that under some circumstances he holds infallible as a means of cure and ignores another that experience and proof have proved itself of greater value in my eyes, yet he has never been charged as a fault for not using the safer remedy." On Dec. 8th the *Essex Telegraph* published the report of the medical officer of health for the month of November in which it was stated that "of 32 persons admitted to the infectious diseases hospital only one died, a child suffering from diphtheria, aged three, whom it was impossible to treat."

A Report of the Medical Officer of Health to the Sanitary Committee.

On Dec. 12th THE LANCET received from the medical officer of health a copy of a report made by him to the chairman and other members of the sanitary committee of the borough of Colchester on the occurrence of diphtheria at Old Heath and on the sanitary condition of that locality. In this it was stated that since 1894 a sewerage system has been carried out and that, in Dr. Brown's opinion, "the general health of the locality has of recent years greatly improved." The report also affirmed all the cases of diphtheria to be "of a mild type" and suggested as the origin of the outbreak "the effects upon the throats of the children attending Old Heath Board School caused by an offensive effluvium from some manure which was laid on a field near by previous to being ploughed in. At this time the air was muggy and humid and warm and a slight breeze from the west brought a very disagreeable odour with it to the schoolhouse and houses adjoining, and 22 of the children had an affection of the throat of a septic, but not of a diphtheritic, character, but of such a nature as to render the incursion of diphtheria easy and, in my opinion, render the children very liable to take on the malady." The report went on to state that orders were given for the ploughing in of the manure and the closing of the school. The medical officer of health expressly exonerated from blame both the water- and milk-supply of the locality, and recorded as his view that "the seriousness of the outbreak has been greatly magnified." But he held the housing of Old Heath as chiefly to blame. "I therefore regard," said the report, "the affection of the throat from which the children suffered was the *causa causans*, and the efficient agent was the kind of houses in which the children lived. The disease as a whole occurred in houses widely separate from each other, and it was most severe where the children were numerous and congregated in a small room or kitchen in the evenings, breathing the polluted air of their small abodes. In the houses where the tenants were few, if the disease occurred, it was comparatively mild and was soon recovered from."

The Question of Responsibility.

There is nothing novel in the fact of diphtheria recurring in a suburban locality and leading to the closing of a school, the sickness of many, and the death of some. But the particularly interesting and somewhat unique point in the story is the attitude of the medical officer of health towards the antitoxin treatment of diphtheria, an attitude which can both be criticised sharply and defended effectively.

It is quite without the province of THE LANCET to attempt to dictate to any qualified medical man that he should or should not use a certain remedy for a certain disease. No corporation has ever attempted to bind its members to a definite scheme of therapeutics, and for any sanitary authority to attempt to do this would not only be flat tyranny but would certainly, in our view, fatally narrow the scope of medicine. Therefore we cannot say in so many words that Dr. Brown ought to treat diphtheria patients with antitoxin, nor can we say that his sanitary authority should influence him to do so. But Dr. Brown is a public officer and not a private individual and can be reasoned with though not coerced. He is under the jurisdiction of the sanitary committee who have to think of what is due to the public and nothing else. They have not to weigh their feelings as to drugs, as to medical treatment, or as to private differences between individuals. It is their duty simply to see that the isolation of infectious cases is properly carried out, that an infectious hospital duly administered awaits the reception of such cases, and that nothing is done to render such institutions inoperative. Now the medical officer of health is not at liberty to the same extent that a private individual is to carry out an individual line of treatment. He is the servant of the authority who are themselves the servants of the community, and if the community desire the antitoxin treatment of diphtheria he would be well advised to let them have it. The Local Government Board have laid down no rules on the subject; he therefore cannot be compelled to use the modern treatment which is accepted by practically the whole medical world as valuable, but the awkwardness of his not doing so may be pointed out to him. Dr. Brown appears to possess some treatment of his own—at least he refers in his reports to some method of therapeutics which he has always found so useful as to render the antitoxin treatment unnecessary. If Dr. Brown has really discovered a treatment of his own, which is productive of better results than are admittedly obtained by the application of antitoxin used early, it is, it seems to us, incumbent upon him to

announce it to the world; but if he is referring to some local application to the throat it might perhaps serve to allay public anxiety if he were to explain the reasons why the local application precludes the use of such a commonly accepted remedy as antitoxin. We feel sure Dr. Brown would be considering the best interests of his district were he thus far to adapt himself to the circumstances.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary meeting of the Comitia was held on Jan. 31st, Sir WILLIAM SELBY CHURCH, the President, being in the chair.

The PRESIDENT referred in appropriate terms to the death of the Queen and proposed from the chair the following motion which was adopted in the usual manner:—

That this College humbly approach His Majesty the King and express its profound sorrow at the loss which His Majesty and the Royal Family have sustained, and at the same time assure him of our loyalty and devotion to his throne and person.

The SENIOR CENSOR (Dr. W. Cayley) in an eloquent speech proposed a vote of congratulation to the President on the honour conferred upon him by the late Queen, and referred to the work which the President had performed whilst serving on the Royal Commission appointed to consider and report upon the care and treatment of the sick and wounded during the South African campaign. Dr. Cayley especially commented upon the manner in which the Royal Army Medical Corps had been cleared from the charges brought against its members and further congratulated the President on his return.—The motion was seconded by the TREASURER (Sir Dyce Duckworth) and carried unanimously.—The PRESIDENT returned thanks to the College in well-chosen and modest terms, intimating that the honour spoken of by the Senior Censor reflected more to the College than to himself personally.

The SECOND CENSOR (Dr. C. Theodore Williams) proposed a vote of thanks to Dr. F. W. Pavy for having acted as pro-President during the absence of the President in South Africa.—This was seconded by the FOURTH CENSOR (Dr. T. H. Green) and carried unanimously.—Dr. PAVY returned thanks to the College for the resolution just passed.

The PRESIDENT announced that he had appointed Dr. Norman Moore Harveian Orator for the year and Dr. Judson Bury Bradshaw Lecturer, and that the Council had appointed Dr. W. H. Corfield Milroy Lecturer for 1902.

The following gentlemen having passed the required examination were admitted Members of the College: Francis Arthur Bainbridge, B.A. Cantab., L.R.C.P. Lond.; William Samuel Octavius Byrne, B.A., M.D. Dub.; Norman Bruce Elliott, M.D. Durh., L.R.C.P. Lond.; John Shields Fairbairn, M.A., M.B. Oxon., L.R.C.P. Lond.; Hugh A. McCallum, M.D. Western Univ., Ontario; Frederick Stephen Palmer, M.D. Durh., L.R.C.P. Lond.; George Eric Campbell Pritchard, M.A., M.D. Oxon.; Henry John Forbes Simson, M.B. Edin.; and Francis Hugo Thiele, M.D. Lond.

Licences to practise were granted to 130 gentlemen and diplomas in public health (conjointly with the Royal College of Surgeons of England) to eight gentlemen who had passed the necessary examination.

Communications addressed to the College were received (1) from the University of Birmingham, asking to be placed on the same footing as other universities as regards the acceptance by the College of certain of the university examinations in lieu of its own; (2) from the Incorporated Society of Medical Officers of Health, asking the support of the College to a representation they have made to the Local Government Board with a view to improve the statistical value of the returns of births, deaths, and notifiable diseases; (3) from the same, on the certification and classification of diarrhœa deaths; (4) from the General Medical Council, forwarding a resolution of Dec. 4th last announcing their adherence to their former resolution (June 7th, 1899) with reference to the registration of medical students; (5) from the same, forwarding the new rules, adopted by the Council on Dec. 5th last, for diplomas in public health granted after Jan. 1st, 1902; (6) from the same asking for a detailed list of exemptions granted by the College from any part of its examinations held during 1897, 1898, and 1899; and (7) from the secretary of the College of Surgeons (3) reporting certain proceedings of their council on Nov. 8th and Dec. 13th, 1900, and Jan. 10th, 1901; and (8) from the University of Glasgow inviting the College to send delegates to take part in the 450th anniversary of the founding of the University.—It was resolved on the proposal of the TREASURER, seconded by Dr. ALLCHIN, to accept the invitation.

Nos. 1, 4, 5, and 6 were referred to the Committee of Management.

A report, dated Dec. 8th last, was received from the representative of the College (Sir Dyce Duckworth) in the General Medical Council.

The following Fellows were elected Councillors: Sir George H. Philipson, Dr. J. F. Goodhart, Dr. F. de Havilland Hall, Dr. W. Ewart, and Dr. W. H. Dickinson (the last named in place of Dr. J. C. Thorowgood who has resigned).

The President nominated Mr. Bryan Farrer, jun., Standing Council to the College; Mr. J. Millar Thomson, F.R.S., was elected an examiner in chemistry in place of Dr. Laurie, who has resigned; and Dr. Andrew M. Paterson an examiner in place of Dr. A. W. Hughes, deceased.

The annual report, dated Jan. 15th, of the Conjoint Finance Committee and the quarterly report of the College Finance Committee were received and adopted.

A report was received and adopted from the Committee of Management dated Dec. 10th last. Amongst the various matters therein dealt with was the recognition of Cooke's School of Anatomy as a place of instruction in anatomy and physiology for candidates referred at the second examination.

A report from the Laboratories Committee dated Dec. 7th was received and adopted.

The REGISTRAR moved that By-law cxxxvi. be amended and re-enacted for the first time as follows, to render it conformable to the regulations of the Conjoint Board, the alteration consisting in the addition of the words printed in italics:—

A candidate shall not be admitted to the third or final examination till the expiration of five winter and five summer sessions from the date of registration as a medical student, *and of four winter and four summer sessions after passing Parts I. and III. of the first examination*, and of two winter and two summer sessions after passing the second examination.

Books and other publications presented to the library during the past quarter were received and the thanks of the College accorded to the donors.

After some further formal business the PRESIDENT dissolved the Comitia.

LITERARY INTELLIGENCE.—The Transactions of the Otological Society of the United Kingdom, a review of which appeared in THE LANCET of Feb. 2nd, page 334, are published by Messrs. J. and A. Churchill.

FOREIGN UNIVERSITY INTELLIGENCE.—*Erlangen:* Professor Richard Frommel will retire from the chair of Midwifery and Gynæcology at the conclusion of the current winter session.—*Halle:* Dr. Bumm of Basle has been appointed to succeed Professor Fehling.—*Heidelberg:* Dr. Witzel of Jena has been appointed Director of the Dental Institute in succession to Dr. Jung.—*Marburg:* Dr. Friedrich Schenck of Würzburg has been appointed to the chair of Physiology vacated by Dr. Kossel, who goes to Heidelberg.—*St. Petersburg (Military Medical Academy):* Dr. Walter has been recognised as *privat-docent* of Physiology.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The next general meeting of this association will be held at the London County Asylum, Claybury, on Feb. 14th, 1901, under the presidency of Dr. Fletcher Beach. The medical superintendent, Dr. C. T. Ewart and Dr. Eric France, and the steward will take members over the General Asylum, Claybury Hall for private patients, the Farm, and the Dibdin bacteria beds for sewage, on their arrival at eleven o'clock.—In the unavoidable absence of Dr. Mott a demonstration upon the Chemistry of Nerve Degeneration will be given by Professor Halliburton at three o'clock in the Pathological Laboratory of the London Asylums at Claybury.—A demonstration upon the Morbid Changes in Dementia by Dr. Joseph Shaw Bolton will also take place.—A paper will be read by Dr. Joseph Wiglesworth on a Case of Murder, the result of pure Homicidal Impulse

THE WAR IN SOUTH AFRICA.

WE said last week that there was but little to chronicle in the way of war news from South Africa and that things had reached a somewhat stagnant stage. But there are now signs of renewed activity. Horses and reinforcements in large numbers are being sent from this country and the colonies to the Cape. De Wet's force is moving towards Cape Colony, while General Knox's troops are endeavouring to head off the guerilla leader before he reaches the banks of the Orange river. Some seven columns of British troops are moving, or about to move, on a systematic plan over the whole country, and presumably on converging lines and in communication with one another. Whether any of them come up with the Boers or not remains to be seen. They will attempt to sweep the country of all supplies of cattle, forage, horses, and food crops, and try to drive the foe into circumscribed positions where, deprived of supplies, they will have to fight in order to live. That seems to be shortly the proposed method of future procedure. Among the killed during the capture of the post at Modderfontein, which was apparently rushed by a large body of Boers on a very dark night and in heavy rain, we regret to notice the name of Civil Surgeon Walker. The sick casualties continue to be rather heavy. The lists of those suffering or dangerously ill from enteric fever are long—to say nothing of the fatal cases. According to the latest return issued by the War Office the total reduction of the military forces through war in South Africa reported since its beginning and up to and including the month of January is:—

	Officers.	Non-commissioned officers and men.	
Deaths in South Africa	635	.....	12,354
Missing and prisoners	15	.....	922
Invalids sent home who have died ...	4	.....	265
Invalids sent home who have left the service as unfit	—	.....	1,734
	654	.....	15,275
			15,929

THE IMPERIAL YEOMANRY HOSPITAL, PRETORIA.

(FROM A CORRESPONDENT.)

IN addition to the field hospital, the bearer company, and the branch hospital at Mackenzie's Farm, the Yeomanry Hospitals Committee have sent out to South Africa two absolutely independent general hospitals, one at Deelfontein and the other at Pretoria. The latter hospital landed in Cape Town on July 16th, 1900, and opened at Pretoria for the reception of patients on August 18th.

The staff now consists of the following:—Commandant and principal medical officer, Surgeon-Major C. R. Kilkelly, Grenadier Guards; consulting physician, Dr. J. W. Washbourn; surgeons, Mr. A. R. J. Douglas and Mr. H. Williamson; physicians, Dr. Crowther Smith, Dr. Davies, Dr. Frost, and Dr. Hayes; quartermaster, Lieutenant Bruce, R.A.M.C.; and secretary, Mr. Vincent. Dr. F. M. Sandwith of Cairo and Dr. Langdon Brown who came out on short leave from their posts at home have returned and Dr. Brickwell has been invalided to England. The nursing staff consists of Miss Nisbet the matron, Miss Leggatt the assistant matron, and 35 nursing sisters. The *personnel* consists of one warrant officer, 25 non-commissioned officers, and 150 men.

The hospital is situated about two miles east of, and 300 feet above, Pretoria on the Megaliesberg range which bounds to the north the valley in which the town lies. It consists of a large two-storeyed house belonging to Mr. Beckett and of a number of tents, the total accommodation being 506 fully-equipped beds, 69 of which are for officers (Fig. 1). We give a sketch by one of the patients, Mr. G. A. Chadwick, 3rd Regiment Australian Bushmen. In the house there are seven rooms for sick officers containing 29 beds, and two rooms for men containing 18 beds. The latter are kept for medical and surgical cases requiring special treatment. One of the rooms in the upper storey is fitted up as an operating-room and an adjacent room is used for surgical instruments. The hall is used as a reading-room and the conservatory as a mess-room for the sick officers and medical staff. The rest of the house is used for kitchens, store-rooms, bath-rooms, and officers' quarters. Several verandahs around the house are a great boon to the patients who are able to sit up. A large outlying building at the back of the house is fitted up for linen stores, hardware stores, dairy, and an x ray room. Behind this building is an electric light installation fitted with an engine and a dynamo, by which the hospital (including the tents and grounds) is lighted.

The tents are pitched in the grounds, and just in front of the house there is a series of terraces with fruit-gardens and vineyards. The men's tents are divided into the following sections: medical section, enteric fever section, surgical section, and general section, the last-named being reserved for the less severe cases. In the medical section there are 30 tents, in the surgical section 12, in the enteric fever section 18, and in the general section nine, each tent containing six beds. The officers' tents consist of three tents for enteric fever cases and three for dysentery cases, each tent containing four beds. There is also a convalescent section for officers (consisting of four tents, each containing four beds) which is reserved for those officers who have sufficiently recovered to join in the officers' mess and who do not require the attentions of a nurse. The accompanying plan shows the general arrangement of the camp (Fig. 2). The mortuary, latrines, refuse pits, and receptacles for soiled linen lie to the west of the plan in a group. With the exception of the enteric fever section the tents are of the "E. P." pattern, which appears to be the best kind of tent yet made. They are economical in space, do not let in rain, and they withstand the worst storms. Their only defect is their weight which renders them difficult of transport. These tents are arranged in sets of three, thus forming "wards" of 18 beds, the "porches" in front of the doorways forming a covered way from one tent to another without interfering with the air-space between the adjacent tents. In some of the sections one tent in each "ward" is used as a day-room, four of the beds being removed to the other tents.

FIG. 1.

Sketch by Mr. G. A. Chadwick of the Imperial Yeomanry Hospital at Pretoria.

The enteric fever section is situated below the other sections, from which it is divided by a broad avenue. It consists of separate hospital marquees.

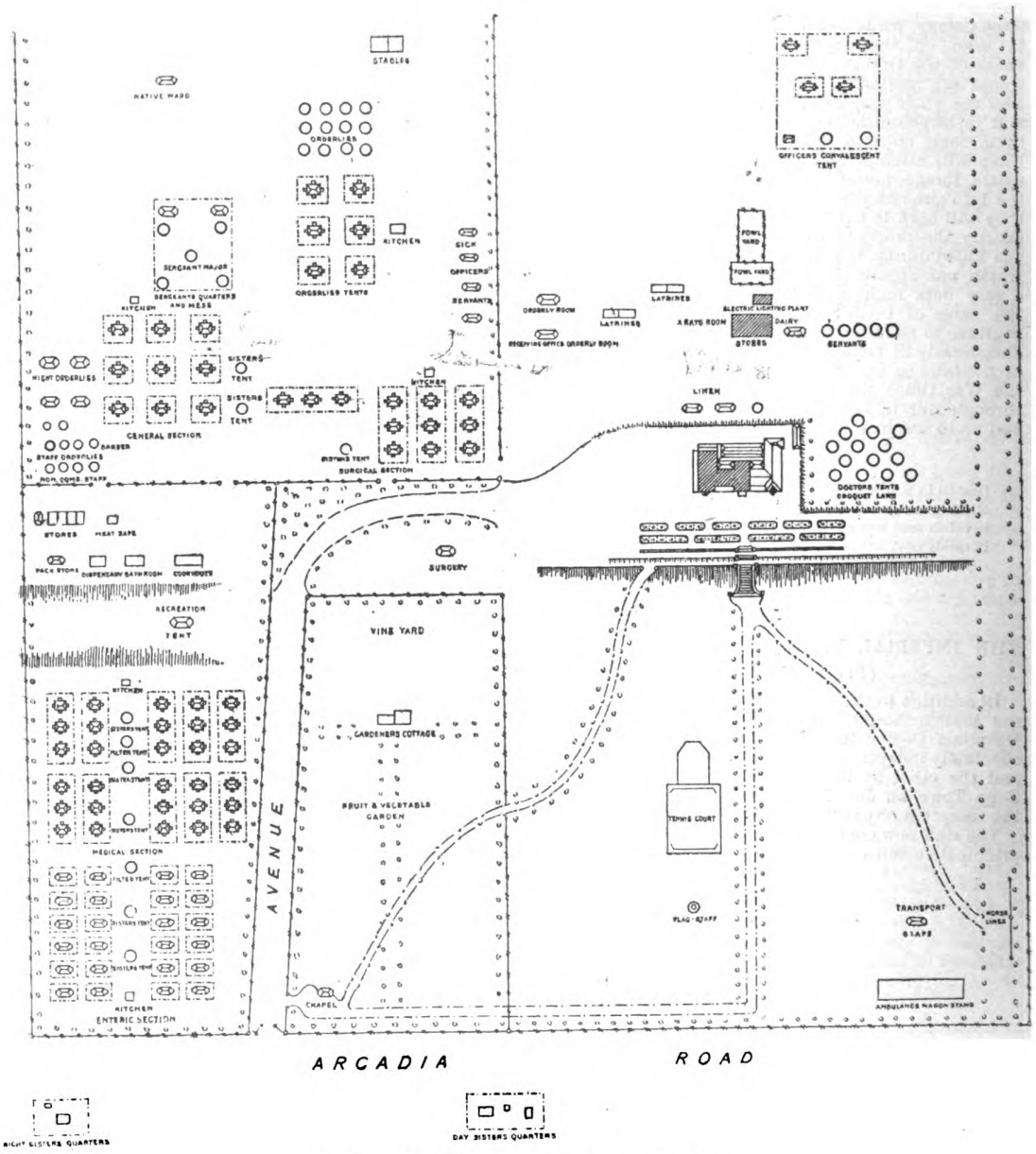
The medical officers (Fig. 3) live in double fly bell tents pitched above the croquet lawn by the side of the house. Two houses just outside the hospital grounds, formerly occupied by Mr. Reitz, the state secretary, and by Mr. MacFadyean, accommodate the nursing staff. One of these houses is used by the day sisters and the other by the night sisters. Both have been fitted with bath-rooms, and in the day sisters' house there is a mess-room and a kitchen. The *personnel* is accommodated in "E. P." tents and marquees pitched to the north of the main camp, with separate kitchen and mess. The sergeants, who also have their own kitchen and mess, live in bell tents. The natives employed about the camp, of whom there are about 100, are located some distance from the rest of the camp in cleverly built shelters made by themselves. A marquee has been fitted up for them as a hospital under the care of Dr. Davies.

Between the medical section and the tents for the *personnel* is a set of buildings consisting of a cookhouse, a bakehouse and lavatory, a dispensary, a provision store, a dry canteen, a pack store, and an ordnance equipment store. The chapel consists of a large tent and hours are fixed for services for all denominations. The whole of the camp looks very pretty and smart with the paths marked out by white stones and with little gardens in front of the tents.

The water-supply is derived from the Pretoria Waterworks. The water, which has been frequently analysed by Dr. Turner and Colonel Lane Notter, R.A.M.C., and found to be of excellent quality, is pumped up from the town into closed tanks. All the water used for drinking purposes is filtered through Berkefeld filters placed at intervals through the camp.

The sewage is disposed of by the pail system, but special arrangements are made for the disposal of the stools from cases of enteric fever or dysentery. The bedpans are taken to a special building and the stools are emptied into pails

FIG. 2.



Plan of the Imperial Yeomanry Hospital at Pretoria.

containing a disinfectant. Thence they are transferred to a large copper in which they are boiled and sterilised according to the method described by Major Cummings, R.A.M.C. The bedpans are left in the building to be washed and cleansed in a disinfectant and are ultimately returned to the wards. This method of treating infective stools is easy of application and most effective. There is very little offensive odour and with slight modifications it might be used with advantage in the fever hospitals at home. The slops from the wards are emptied into tanks on wheels and are disposed of outside the hospital grounds. The dry refuse is also taken outside the hospital grounds, where it is burnt and then buried.

The linen is washed at the Pretoria Steam Laundry. All infected articles are disinfected at the hospital in a Thresh's steam steriliser, the soiled articles being first soaked in a solution of izal.

Up to the present date (Dec. 27th, 1900) over 2000 patients, including 200 officers, have been treated in this hospital. Patients from a distance arrive either in convoys or in hospital trains. The railway siding is about half a mile from the hospital, whither the patients are conveyed in our own ambulances. Patients from Pretoria and its immediate neighbourhood come either in ambulances or in Indian dhoolies carried by native bearers. The majority of our patients are acute cases, inasmuch as there is accommodation for convalescent patients in the Yeomanry and in the convalescent camps.

The medical cases consist principally of enteric fever, dysentery, and malaria. In Pretoria itself malaria does not appear to occur, but to the north in the bush veldt, to the west in the Rustenburg district, and along the eastern line towards Komati Poort it is very prevalent. On Nov. 20th 32 cases of malaria all contracted within a few days were admitted from the Rustenberg district. The enteric fever cases came from various parts; a noticeable feature has been the tendency to fatal cardiac failure in cases which would otherwise not be especially severe. A similar observation was made at the Deelfontein Hospital in patients who had been exposed to excessive fatigue previously to being attacked with the disease. In addition to malaria and enteric fever there have been a number of cases of indefinite pyrexia which go under the much-abused name of "simple continued fever." Some of these cases are cases of influenza, but others appear to belong to some undetermined fever. Dr. G. Turner, the medical officer of health of the Transvaal Colony, has started a compulsory notification of infective diseases similar to that in force at home, which will no doubt be of value in tracing these diseases to their origin.

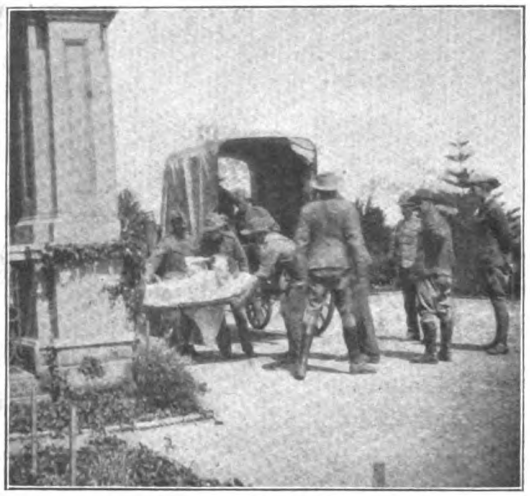
The surgical work of the hospital has naturally depended upon the locality of the fighting. During the earlier days of the hospital the fighting round Pretoria was desultory and the casualties were few, and except for the occasional arrival of a convoy from Rustenburg or some other outlying district the cases were similiar to those found in a civil hospital at home. Our operations included several for the radical cure of hernia and

FIG. 3.

Medical and Nursing Staff of the Imperial Yeomanry Hospital at Pretoria.

varicocele, two for the removal of the vermiform appendix, cases of nerve suture, a few amputations, and many cases of severe hæmorrhoids. In addition to these there have always been, even at the beginning, a certain number of cases of gunshot wounds. Surgical complications in the dysentery and enteric fever cases have been very few, operative treatment having only been called for three times, once for perforation of a dysenteric ulcer, once for amputation of a gangrenous leg due to arteritis occurring in enteric fever, and once for trephining the mastoid antrum in a case of middle-ear complication due to the same cause. During the last few weeks, however, the character of the work has entirely changed and the surgical resources of the hospital have been taxed to their utmost limit by the number and severity of the gunshot wounds which have been brought in. For instance, on Dec. 3rd 10 wounded officers and 27 wounded men were admitted from the fight at Rhenoster Kop (Fig. 4). Most of the men belonged to the New

FIG. 4.



Arrival at hospital of patients of General Paget's column after the fight at Rhenoster Kop.

Zealand contingent, and among the officers was Dr. Chalice, a civil surgeon, who was severely wounded in the thigh and who had behaved with conspicuous gallantry. On Dec. 18th six wounded officers and 11 wounded men were admitted from Clements's Brigade at Rietfontein, and on the 21st 10 more wounded men were admitted from the same force. To-day a convoy of 25 wounded men and one officer have arrived from the Yeomanry Field Hospital at Rietfontein. All varieties of injuries have been represented both with regard to the locality of the wound and the nature of the projectile causing it. Speaking in general terms our experience has been that wounds out here heal more rapidly and satisfactorily than those seen in civil practice at home. Suppuration is rare provided early attention is given to the wounded.

Various amusements are provided for the patients. Visitors are admitted on three afternoons a week or at any time by special permission of the commandant. The band of the 2nd Lincoln Regiment, by the kind permission of Major Day, plays in the hospital grounds every Saturday afternoon, and these occasions are eagerly looked forward to by the patients. A small theatre constructed of three tents has been erected on the tennis lawn and is used for occasional concerts and for a small play which is being prepared for New Year's Eve.

December 30th, 1900.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6018 births and 3707 deaths were registered during the week ending Feb. 2nd. The annual rate of mortality in these towns, which had been 19·6, 19·1, and 17·9 per 1000 in the three preceding weeks, further declined last week to 16·4. In London the death-rate was 16·1 per 1000, while it averaged 16·6 in the 32 large provincial towns. The lowest death-rates in these towns were 10·0 in Burnley, 10·2 in Leicester, 11·8 in Cardiff, and 11·9 in Derby and in West Ham; the highest rates were 19·6 in Manchester and in Wolverhampton, 21·9 in Liverpool, 24·1 in Gateshead, and 26·4 in Norwich. The 3707 deaths in these towns included 323 which were referred to the principal zymotic diseases, against 389, 374, and 347 in the three preceding weeks; of these 104 resulted from whooping-cough, 69 from diphtheria, 56 from measles, 33 from "fever" (principally enteric), 30 from scarlet fever, 30 from diarrhœal diseases, and one from small-pox. No death from any of these diseases occurred last week in Plymouth or in Huddersfield; in the other towns they caused the lowest death-rates in Croydon, Portsmouth, Norwich, Bolton, and Burnley, and the highest rates in Nottingham, Birkenhead, Liverpool, and Salford. The greatest mortality from measles occurred in Liverpool and Sunderland; from scarlet fever in Salford; and from whooping-cough in Wolverhampton, Nottingham, and Birkenhead. The mortality from "fever" showed no marked excess in any of the large towns. The 69 deaths from diphtheria included 24 in London, eight in Sheffield, six in Liverpool, and five in Leeds. One fatal case of small-pox was registered in Newcastle, but not one in any other of the 33 large towns; three small-pox patients remained under treatment in the Metropolitan Asylums hospitals on Saturday last, Feb. 2nd, and one new case was admitted during the week. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2037, against numbers decreasing from 2535 to 2078 on the five preceding Saturdays; 178 new cases were admitted during the week, against 156, 187, and 172 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 422 and 394 in the two preceding weeks, further declined last week to 323, and were 144 below the average. Influenza was certified as the primary cause of 15 deaths in London last week, against 20 and 17 in the two preceding weeks. The causes of 51, or 1·4 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Cardiff, Nottingham, Bradford, Leeds, and in 10 other smaller towns; the largest proportions of uncertified deaths were registered in Leicester, Halifax, Sheffield, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 24·0 and 21·1 per 1000 in the two preceding weeks, rose again to 22·2 during the week ending Feb. 2nd, and showed an excess of 5·8 per 1000 over the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 17·6 in Leith and 20·2 in Paisley and in Perth, to 23·5 in Glasgow and 23·6 in Aberdeen. The 695 deaths in these towns included 43 which were referred to whooping-cough, 27 to diarrhœa, 24 to small-pox, 16 to measles, seven to diphtheria, six to "fever," and three to scarlet fever. In all, 126 deaths resulted from these principal zymotic diseases, against 125 and 106 in the two preceding weeks. These 126 deaths were equal to an annual rate of 4·0 per 1000, which was 2·4 per 1000 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 61 and 39 in the two preceding weeks, rose again last week to 43, and included 34 in Glasgow, three in Edinburgh, two in Dundee, and two in Paisley. The deaths from diarrhœa, which had been 22, 16, and 15 in the three preceding weeks, rose again last week to 27, of which 21 occurred in Glasgow and three in Edinburgh. The fatal cases of small-pox, which had been two, three, and 11 in the three preceding weeks, further rose last week to 24, and were all recorded in Glasgow. The deaths from measles, which had been 23 and 18 in the two preceding weeks, declined again last week to 16, of which eight occurred in Edinburgh and four in Aberdeen. The fatal cases of diphtheria, which had been six and eight in the two preceding weeks, declined again to seven last week, and included three in Glasgow. The deaths resulting from different forms of "fever," which had been two, 14, and 15 in the three preceding weeks, declined again last week to six, of which five were registered in Glasgow. The

deaths referred to diseases of the respiratory organs in these towns, which had risen from 105 to 145 in the four preceding weeks, declined again last week to 123, and were 89 below the number in the corresponding period of last year. The causes of 35, or more than 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 30·4 and 28·2 per 1000 in the two preceding weeks, further declined to 27·4 during the week ending Feb. 2nd. During the past four weeks the death-rate in the city has averaged 28·6 per 1000, the rates during the same period being 18·0 in London and 21·5 in Edinburgh. The 182 deaths belonging to Dublin registered during the week under notice were 5 less than the number in the preceding week and included 18 which were referred to the principal zymotic diseases, against 16 and 20 in the two preceding weeks; of these, 12 resulted from whooping-cough, three from "fever," two from diarrhœa, and one from diphtheria. These 18 deaths were equal to an annual rate of 2·7 per 1000, the zymotic death-rate during the same period being 1·4 in London and 2·7 in Edinburgh. The deaths referred to whooping-cough, which had been 10, 12, and 8 in the three preceding weeks, rose again to 12 last week. The fatal cases of "fever," which had been three, three, and six in the three preceding weeks, declined again last week to three. The 182 deaths in Dublin last week included 29 of children under one year of age and 44 of persons aged upwards of 60 years; the deaths of infants showed a slight decline, while those of elderly persons were considerably less than the number in the preceding week. Seven inquest cases and seven deaths from violence were registered during the week; and 63 or more than a third, of the deaths occurred in public institutions. The causes of nine, or nearly 5 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL ARMY MEDICAL CORPS.

Captain C. T. Samman has joined at Woolwich. Lieutenants A. J. McN. Cuddon-Fletcher and A. D. Jameson proceed to Aldershot for a course of instruction at the Depôt, R.A.M.C., returning to Woolwich on the completion of the course. Major Berryman is in medical charge of the *Formosa* taking troops to Malta and Egypt. Civil Surgeon J. Freeman has assumed medical charge of the troops at Plymouth, vice Lieutenant-Colonel Turner, who is granted temporary leave of absence.

SOUTH AFRICAN NOTES.

Civil Surgeon S. Sharp has been discharged from hospital to duty.

VOLUNTEER MEDICAL ASSOCIATION.

The monthly council meeting of this association was held at the head-quarters, 20, Hanover-square, on Jan. 29th, Brigade-Surgeon-Lieutenant-Colonel Andrew Clark, V.D., being in the chair. There were present Brigade-Surgeon-Lieutenant-Colonel H. G. Thompson and Brigade-Surgeon-Lieutenant-Colonel P. B. Giles, V.D., Surgeon-Lieutenant-Colonel M. Baines, V.D. (retired), Surgeon-Lieutenant-Colonel J. Edward Squire, V.D., Surgeon-Major V. Matthews, Surgeon-Major W. Culver James, Surgeon-Captain J. Harper, Surgeon-Captain W. A. Dingle, Surgeon-Captain T. H. Dickson, Surgeon-Captain J. Cantlie, (honorary treasurer), and Surgeon-Major I. I. de Z. Marshall (honorary secretary). Amongst other business the annual challenge shield competition for this year was dealt with, the recommendations of the sub-committee being adopted—viz.:—

That all notices concerning the challenge shield competition should be sent through the brigade officer by means of a special letter to each brigade, such letter to be directed to the officer commanding the regimental district and accompanied by circulars for each regiment in his command.

That, in order to save time and expense, it is suggested that preliminary competitions should be held in each brigade to select one or more squads for the final competition and that a prize might be offered by each brigade to encourage entries.

It was agreed that the final competition be held in Wellington barracks on the first Saturday in June (the 8th). The annual meeting was fixed to take place after the council meeting on the last Tuesday in April (the 30th). The following report of a sub-committee, moved for by Surgeon-Major V. Matthews to consider the effect of the new Volunteer Act, 1900, upon volunteer medical officers, was adopted:—

That the attention of the proper authorities be called to the possible effect of the Volunteer Act, 1900, pressing unduly on volunteer medical officers, as it may necessitate their throwing up their practices if they are liable to compulsory service at long distances from their homes, as, owing to the shortness of the medical department of the regular army the volunteer medical services would, in all probability, be called out first and released the last.

It was resolved that a letter embodying the resolution be written to the Secretary of State for War. The following vote of condolence to His Majesty the King, proposed by Surgeon-Lieutenant-Colonel J. E. Squire, and seconded by Surgeon-Major W. Culver James, was carried unanimously, and was directed to be forwarded through the Secretary of State for the Home Department:—

The Council of the Volunteer Medical Association beg with all respect to offer to His Majesty the King, who as Prince of Wales was president of the association, their condolence on the irreparable loss sustained by His Majesty and by the whole empire, on the death of Her Most Gracious Majesty Queen Victoria.

GALLANTRY OF A FRENCH MEDICAL OFFICER.

According to a recent Ministerial decision Dr. Henri Mathé of the French navy has been granted special promotion on account of his meritorious services while on duty at Dakar in Senegal. The official announcement says that Dr. Mathé particularly distinguished himself by displaying exceptional qualities of initiative intelligence and devotion during an epidemic of yellow fever. "Left the only officer at the station by the demise of the commandant and his combatant staff he immediately assumed, with as much decision as coolness, the whole of the responsibilities inherent to such a situation."

THE INDIAN CONTINGENT IN CHINA.

The expeditionary force of native troops and followers sent from India to China was provided with a very liberal supply of warm clothing and it is satisfactory to find that although pneumonia has appeared among them the mortality has so far been comparatively small. It is well known that the natives of India when employed on field service during the cold season are much more susceptible to pneumonia and pulmonary disease than European troops.

Among the floral tributes received at Windsor Castle was a wreath of white flowers from the sick and wounded in the Royal Victoria Hospital, Netley. The card bore this inscription: "In affectionate remembrance of our beloved Queen from the sick and wounded soldiers at the Royal Victoria Hospital." A superb crown of white flowers with an appropriate inscription was also sent by Colonel Charlton and the military officers of the hospital. A wreath had previously been sent to Osborne House by Miss H. Norman, R.R.C., lady superintendent, and the nursing sisters at Netley.

Among the military officers who formed part of the procession from Osborne to the Royal yacht were numbered Colonel W. J. Charlton, R.A.M.C., principal medical officer of the Royal Victoria Hospital, Netley, and Major Treherne, R.A.M.C., his staff officer.

According to the *Pioneer Mail* of Jan. 11th it is reported that the 2nd Battalion, Durham Light Infantry, are to be moved from Burma to Wellington, pending their departure home with a view to an improvement of the state of health of the regiment. The 1st Battalion, Royal Fusiliers, at Nasirabad will proceed to Burma.

Correspondence.

"Audi alteram partem."

THE SOUTH AFRICAN HOSPITALS COMMISSION.

To the Editors of THE LANCET.

SIRS,—Considering the circumstances which surrounded the birth of this Commission—the essentially technical character of the inquiry as originally proposed, the tergiversation of the Government on its composition and scope, its subsequent extension on both headings, the tone of some of the speeches in the House of Commons, the animus against medical men and the absence upon it of any member with knowledge of

the service, its regulations and requirements, to which you draw attention in the leading article in THE LANCET of Feb. 2nd, p. 338—the Royal Army Medical Corps may rest thankful for the lines on which this inquiry has been carried out, for the impartiality shown, and for the conclusions arrived at. Tersely put it may be said that the defects brought to light touching the well-being of the sick and wounded range themselves under imperfections in the organisation of the corps and deficiency of materials, the exigencies of war and the absence of sufficient transport; and, in respect to the first, quite preventable, it is abundantly clear that the responsibility rests with the sections of the War Office concerned with the points in question. And when we note the nature of the defects shown in the field under the pressure of military operations we recognise how closely they fit in with the known imperfections under which the corps laboured during peace and from which those having practical experience feared the results which have followed. A corps reduced to a numerical strength not even sufficient for peace requirements, with, so far as our officers were concerned, a *paper* reserve, deprived of all stimulus towards personal efficiency and professional progress, with deficient material to work with and practically no opportunities for practising during peace the demands of war, necessarily was unable to meet the onerous burden of a large war, yet showed the value of its component parts and the ability and energy of the majority of its *personnel* as, when supplemented by a strong civil contingent of officers and men and by private help, allowed the Commission to conclude that "it cannot be properly said that the medical and hospital arrangements have broken down; there has been nothing in the nature of a scandal with regard to the care of the sick and wounded, no general or wide-spread neglect of patients or indifference to their sufferings, and all witnesses of experience in other wars are practically unanimous in the view that taking it all in all in no campaign have the sick and wounded been so well looked after as they have been in this." One bubble which has been pricked is the asserted existence of an army reserve of medical men in the auxiliary forces or otherwise, and another, apparently relied on by the military coterie, is the hitherto asserted competency of the civil section adequately to take the place of a trained army medical staff.

To enter further into details would occupy too much of your valuable space. Suffice it to say, that the business-like recommendations of the Commission even better emphasise the defects elucidated than the narration of the work undertaken; while on the three main points of the desirability of the conditions of service being such as to draw good professional men and ensure the maintenance of their qualifications at a high level, advancement for merit rather than by seniority for the upper ranks, and the production of good sanitarians in the Royal Army Medical Corps, they do but repeat the recommendations of the Crimean inquiry, and so land us exactly where we then were, with the whole of the sad experience then culled and the good intentions then formulated wasted and annulled in the interval by those to whom the well-being and efficiency of the medical section of army work was entrusted. In point of fact, the nation is again asked to do in 1901 what it was asked to do in 1858, what with the best intentions it proposed to do, but which it utterly failed to bring to good effect through its negligence to watch over the acts of its officials; and the pressing present question is, Will it do any better now and in the future?

The Commission merely indicate the lines along which progress should run and suggest another committee—departmental or otherwise—to formulate the necessary details, and hence its accomplished work is but the primary step in the scheme to be evolved. It is apparent that the composition of this committee is all important, as with it rest the power of laying down the measures essential towards giving due effect to the recommendations made or, on the other hand, frustrating the attempt now again made to evolve an efficient medical corps capable of doing the highly important duties entrusted to it—duties now clearly placed before the public and after this committee has drawn up a course of action calculated to effect the objects desired it will rest with the War Minister to embody this outcome in a royal warrant or otherwise. And this third step satisfactorily accomplished the crux of the scheme, the pivot on which the entire previous labours will turn for good or evil results, will be arrived at as embodied in the questions: What guarantee have we that the decisions arrived at will be respected and not whittled away or ignored as in the past? Where resides the power capable of giving full effect to them?

The unfortunate position of the Royal Army Medical Corps is that it is dependent for good working on so many sections of the War Office, any one or all of which may adversely influence it; and what is wanted is an emancipation of the corps from these trammels so that it may be free to perfect itself in accordance with its known wants from a professional standpoint and on a business basis. Clearly, much remains to be done before a successful issue is arrived at.

I am, Sirs, yours faithfully,

[redacted]

FRANCIS H. WELCH, F.R.C.S. Eng.,
Surgeon-Colonel (retired), Medical Staff.

Brandram-road, Lee, Feb. 4th, 1901.

"SELENIUM COMPOUNDS AS FACTORS IN THE RECENT BEER-POISONING EPIDEMIC."

To the Editors of THE LANCET.

SIRS,—Since the publication of our last note[1] upon this subject we have continued our work in this direction, and have been able to demonstrate the presence of selenium in brewing sugar and beer, the only source of which is the impure sulphuric acid used in the manufacture of the sugar. The brewing sugar in addition to selenium contained arsenic. We may say incidentally that this sugar was not manufactured by the firm implicated in the recent epidemic. The beer we examined we obtained through the kindness of Sir Lauder Brunton, and it was one which was undoubtedly concerned in the beer-poisoning epidemic. We are at present occupied in the quantitative estimation of the selenium in both these substances.

With regard to the pharmacological action of selenious acid the recent results obtained by O. Modica[2] are of especial interest in this connexion. This observer, while confirming the results of Czapek and Weil[3] concerning the similarity of arsenious and selenious acid with regard to acute poisoning, points out that the symptoms of chronic poisoning which they produce are not by any means so similar. For instance, whilst wasting in animals chronically poisoned by arsenic practically never occurs, in chronic selenious acid poisoning it is never absent. Further, in animals tolerance to continued small doses of arsenic is easily obtained. This is not so in the case of selenious acid.

We are, Sirs, yours faithfully,

F. W. TUNNICLIFFE, M.D., M.R.C.P. Lond.,
Professor of Materia Medica and Pharmacology in King's College, London),
OTTO ROSENHEIM, Ph.D., F.C.S.

King's College, London.

THE ADAPTABILITY OF CLOVER'S INHALER.

To the Editors of THE LANCET.

SIRS,—This well-known inhaler has, with slight modifications, held its own for many years in the administration of ether and when fitted with a tap at the free end of the bag is frequently used for giving nitrous oxide prior to etherisation. It does not appear to be generally known that a Clover's inhaler *without the bag* is safe and effective for administration of chloroform or of mixtures of chloroform and ether. (Chloroform pure or in a mixture must never be given with the bag on, as this is practically a closed method, and to give chloroform by such a method is simply tempting Providence.) Within the last few years McArdle has drawn attention to the utility of this method in giving Tait's mixture, which consists of chloroform one part and ether two parts, for gynæcological work. With slight modifications in the method of administration, I find it equally useful for administration of chloroform alone and other mixtures of chloroform and ether. The following mixtures are of service:—

	Chloroform.	Ether.
For a healthy man	2 parts	1 part
For a feeble man	1 part	1 part
For women and children	1 part	2 parts (Tait's mixture).

The chloroform and ether are best kept in separate bottles

[1] THE LANCET, Feb. 2nd, 1901, p. 318.
[2] Archiv. Farm. e Terap., Palermo, vol. v., 1897, p. 61.
[3] Archiv für Experimentelle Pathologie und Pharmacologie, xxxii., 1893.

and the mixture measured out as required. In giving chloroform alone I start with one ounce of the anæsthetic in the chamber and with the indicator at 0. After a few breaths the indicator is gradually moved to midway between 0 and 1 and then slowly and by regular gradations advanced up to 3. This occupies five or six minutes. The indicator is then kept at 3 until complete anæsthesia is induced, generally in another four or five minutes, and for the rest of the administration it is moved back and kept between 1½ and 2 as may be found necessary. In giving mixtures of chloroform and ether one and a half ounces of the mixture are poured into the chamber and the same method holds good, except that to induce anæsthesia the indicator must be advanced to Full and after production of complete anæsthesia kept between 2 and 3. The greater the proportion of ether in the mixture the nearer will the indicator have to be kept to 3. Mixtures of chloroform and ether require from 10 to 12 minutes for production of complete anæsthesia. Having the anæsthetic in a reservoir which has to be replenished about twice in the hour is very superior to the constant bottle-tilting or ball-squeezing which is inseparable from the open and Junker methods and is very readily appreciated by anyone who has often to administer anæsthetics for three or four hours on end. The same precautions and the same watch on the pulse, respiration, and pupil are necessary in this as in any other method of administration. I have practically given up the dropping on lint method for the Clover's inhaler without the bag, except in those operations on the face or mouth which would foul the interior of the Clover's inhaler with blood. There is a great advantage in a simple apparatus which can be used equally well for nitrous oxide, ether, nitrous oxide and ether, chloroform, and chloroform and ether mixed.

I am, Sirs, yours faithfully,

C. HAMILTON WHITEFORD, M.R.C.S.Eng., L.R.C.P.Lond.,
Hon. Anæsthetist to the South Devon and East Cornwall Hospital.

Plymouth, Feb. 4th, 1901.

"WHAT IS 'COGNAC BRANDY'?"

To the Editors of THE LANCET.

SIRS,—My attention has been directed to a joint letter of Messrs. Hennessy and Martell which appeared in THE LANCET of Feb. 2nd, p. 358, relating to an action in which my company is concerned and to my evidence therein. The report of the case in the Dublin journals upon which Messrs. Hennessy and Martell's letter is based was incomplete and in material respects inaccurate. No shorthand writer was available at the hearing to take a verbatim note. As the case is under appeal I refrain from discussing its merits and will only at present deal with certain facts given in evidence so far as rendered necessary by the letter you have inserted.

It was stated in evidence that my company's predecessors sold and invoiced the brandy in question at 42*s.*, not as "cognac" but merely as "brandy." The plaintiff's counsel, in spite of three distinct suggestions by the Lord Chief Justice, refused to amend his pleadings in this sense and insisted that "brandy" necessarily meant "cognac" (ignoring the existence of Australian, Californian, Spanish, and other brandies), and further insisted that brandy must be exclusively the produce grown in the commune of Cognac. In my evidence I stated that pure cognac should be the produce of the two Charentes, but plaintiff's counsel insisted upon his limitation, and I therefore, in the "lamentable ignorance" referred to by your two correspondents, did state—and I adhere to the statement—that brandy made exclusively from grapes of the commune of Cognac did not exist on the market. Messrs. Hennessy's and Martell's names were not introduced by me into the case, but when asked specifically I did state that at equal prices the brandies of all cognac shippers, including those of the two firms named, were practically made in the same manner. That statement was not intended, and I submit is not calculated, to reflect upon them, and I should be sorry if it were considered otherwise.

Passing from the personal part of the matter to the larger question, namely, the interest of the British public—in which the named firms stated that they addressed you—may I be permitted to state that I visited the two Charentes before and since the destruction of the vineyards by the phylloxera and claim to have, in spite of the suggested "lamentable ignorance," not only a knowledge of the Cognac district, but also of its products as shipped before and since the stated period. I concur that last year the Charentes have produced—for the first time in 22 years—cognac in appreciable quantities. Your correspondents are silent as to the failure of such production during the preceding 22 years; they point out that there is "now" offered on the market Cognac brandy of the last vintage at prices less than those of the ante-phylloxera period, but do they suggest that the brandy of the last vintage—made a few months ago—is now offered to, or available to, the public for present consumption? Your correspondents are also silent as to the large quantities of brandy shipped from the Charente during the 22 years succeeding 1878—the year of the devastation of the vineyards—until last year's bountiful vintage. I have it on the authority of eminent cognac shippers that the production of wine in the Charente in 1877 was about 15 000 000 hectolitres; that in 1878, when the vineyards were generally attacked, the yield was reduced to about 6,000,000 hectolitres; that in 1879 and 1880 there was a further reduction; and that between and including the years 1881 to 1890 the yield was insignificant. Yet in 1879, the year following the destruction of the vineyards, there was a record exportation of brandy from Charente—viz., some 500,000 hectolitres—which doubtless consisted largely of old stocks; but it is curious that during the years 1881 to 1890 when the yield was insignificant the exportation did not materially decrease, being about 300 000 hectolitres annually. It is significant that during that period and since large quantities of spirits from other parts have been imported into the Charente, and at the trade auction sales in London for a number of years large quantities of brandy shipped from the Charente were sold as to the greater part from 25 to 75 per cent. less than the prices quoted by Messrs. Hennessy and Martell for the new vintage of last year, in fact as low as 1*s.* 8*d.* per gallon. Putting aside the new brandy of last year's vintage, are the brandies shipped as stated from the Charente during the last 22 years, even as to a moderate proportion, the "good and pure cognac available at moderate prices" referred to by your correspondents?

I am in complete sympathy with the ostensible objects of the syndicate recently formed in the Charente for the protection of "cognac." It is to be hoped that the syndicate will ensure that what is shipped from the Charentes as "cognac" contains no spirit other than that produced from grapes of the Charente, and that if such is blended with any other spirit the product is not shipped as "cognac." I stated in my evidence that pure cognac of a suitable age for present consumption—not last year's vintage—and without any admixture of other spirit cannot at present be obtained under a comparatively high price, and I consider that it is in the interest of the public as well as in that of shippers of genuine cognac that this fact should be well understood.

In asking you in fairness to my company to insert this letter I apologise for trespassing at such length on your valuable space and—Remain, Sirs, yours faithfully,

F. B. EHRMANN,
Managing Director, Ehrmann Bros., Ltd.

Finsbury-square, London, E.C., Feb. 4th, 1901.

THE RÔLE OF ARSENIC IN THE RECENT EPIDEMIC OF PERIPHERAL NEURITIS.

To the Editors of THE LANCET.

SIRS,—With regard to a paragraph in a leading article in THE LANCET of Feb. 2nd, p. 341, in which you suggest the possibility of the rôle played by arsenic in the recent epidemic of peripheral neuritis being challenged, may we be permitted to draw your attention to our articles in the *British Medical Journal* of Dec. 1st and 8th, to Major Ronald Ross's letter in THE LANCET of Dec 8th, 1900, p. 1677, and to Dr. Prytherch's remarks at a meeting of the Liverpool Medical Society, as reported by you in THE LANCET of Jan. 5th, 1901, p. 33? We have from the first opposed the idea of the wholesale poisoning by arsenic and our opinions are not modified in the least degree. With apologies for troubling you,

We are, Sirs, yours faithfully,

W. A. NEWALL
J. R. PRYTHERCH.

Chester, Feb. 5th, 1901.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Increase of the Plague.

THE feature of the week has been the marked development of the plague epidemic in Bombay city and the evident signs of a recrudescence in the sister city of Calcutta. For the whole of India during the week ending Jan. 5th there were 2453 deaths from plague, compared with 2298 during the previous seven days, and with 1386 during the corresponding week of last year. In Bengal there was an increase from 1374 to 1500. There were 414 deaths from plague in Mysore, 261 deaths in the Bombay Presidency, 171 in Bombay city, 67 in Calcutta, 25 in the Madras Presidency, 14 in the Hyderabad State, and 11 in the Punjab. In Bombay City the increase was from 982 to 1119. In Bengal the Patna district returned 821 deaths, Sarun district 385, Monghyr 194, Gaya 99, and Howrah one. The increase in Calcutta is greater than the figures show, partly because a much larger proportion of deaths have during the past week been returned as due to plague (whereas previously so-called suspected deaths formed a greater portion of the total figures), and partly because there is probably more plague than is officially reported.

Greater effort should be made to popularise inoculation in Calcutta. The operation is accepted in the other plague affected districts of Bengal under the influence of Major Sunder, I.M.S. In the Punjab it has been vigorously pushed and apparently with great success. The prophylactic is not being sought for much at the present time in Bombay City, notwithstanding the threatened outbreak, but a very large number of inoculations have been already done there.

The hospital ship *Gwalior*, after some additional medical fittings, will sail again for China, probably about the 30th.

There is no further diminution in the famine returns; indeed, in some places there is a slight increase.

Jan. 12th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Death of the Queen.

MATTERS of local interest have lately given place to the all-absorbing details connected with the lamented death of Queen Victoria. Loyalty and devotion to her memory have been displayed widely in profound grief and universal mourning. The late Queen was patron of the Queen's Hospital. Her interest was also generously shown by the opening of the Jaffray Hospital by the Prince of Wales and of the laying of the foundation-stone of the General Hospital by the Duke of York as her representatives. Her Majesty in her own person laid the foundation-stone of the law courts which bear her name in this city. On Jan. 10th only a statue of Her Majesty—the gift of a Birmingham citizen, Mr. Barker—was unveiled in the centre of the town amid the acclamation of a large crowd. The enthusiasm of this tribute to the celebration of her Diamond Jubilee had hardly died away when the news of her illness and unexpected death reached our ears. Ere the echo of rejoicing had died away there came the sound of lamentation and a sense of profound sorrow. Happily this was mingled with national pride in our Queen's long and glorious career, the record of which will remain in history as an example of a monarch whose life was devoted to the interests and welfare of her people.

Walter Myers, B.Sc. Lond., M.A., M.B. Cantab.

Dr. Myers, whose life has been yielded to the cause of science in a sad manner, was a Birmingham student who after obtaining high academic distinction was selected by the Liverpool College to go abroad for the purpose of studying tropical diseases. At Parà he contracted yellow fever, to which he succumbed. At Cambridge he obtained a natural science scholarship at Caius College and after a distinguished career took the degrees of Master in Arts and Bachelor in Medicine. Ardent and devoted to his studies, painstaking and accurate in his observations, with prospects of a brilliant course open to him, he fell a martyr to progress. Much sympathy is felt in the city for his parents, of whom he was an only son.

The Hospital for Sick Children.

The fortieth annual meeting of the governors and subscribers to this institution was held on Jan. 28th, under the presidency of the Lord Mayor (Alderman Edwards). The report read was a very satisfactory one. The number of patients treated last year was 14,829, of whom 13,535 were out-patients, and the death-rate was 7·9 per cent. As usual, the committee deplored a deficiency in the balance-sheet, the income falling short of the expenditure by £590. The new operating theatre and reception rooms have been finished and already have proved an inestimable advantage.

The Prosecution of Druggists.

At the police-court on Jan. 18th a local firm of druggists were heavily fined. One summons was for selling tincture of benzoin which was not of the nature, substance, and quality demanded, and another was for selling camphorated oil which only contained 78 per cent. of the quantity of camphor contained in camphorated oil prepared according to the British Pharmacopœia. As usual, much conflicting evidence was adduced, and the question of employing unqualified assistants to dispense was brought to the front. After some strong remarks from the bench a fine of £20 and costs was inflicted in each case.

Feb. 5th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Magisterial Decisions in Cases arising out of Arsenic Poisoning by Beer.

TWO decisions given by the stipendiary magistrates at the city and county police-courts a few days ago are distinctly opposed to each other. At the Manchester City Police-court Mr. Headlam said the defendant was "summoned for selling beer to the prejudice of the purchaser, such beer not being of the nature, substance, and quality of the thing demanded." This was under the sixth section of the Sale of Food and Drugs Act. The beer contained arsenic. Mr. Moulton had argued that arsenic being an ingredient injurious to health the summons should have been taken out under the third section, the article sold being really beer into which, through no fault and without the knowledge of the defendant, arsenic had been introduced. But a summons under the third section must have failed because knowledge of the fact on the part of the vendor is essential to a conviction. But Mr. Headlam was of opinion that the defendant could be convicted under the sixth section, which was passed in the interests of the purchaser, "and it is not required that the vendor should have knowledge of any adulteration in the article purchased." The vendor can, however, protect himself by obtaining a warranty from the person who supplies him with the article. He said that it would be an extraordinary thing that a person who unknowingly sells milk with water in it should be liable to a penalty, while one "who unknowingly sells beer with arsenic in it should be allowed to go free." He convicted the defendant and imposed a fine of 40*s*. An appeal was allowed. At the Manchester County Police-court Mr. J. M. Yates, K.C., the stipendiary magistrate, in a similar case gave an opposite decision. He said that beer containing arsenic had been purchased from the defendant and the quantity was admittedly such as to be prejudicial to health. A summons was taken out under the Sale of Food and Drugs Act, 1875, Section 6. For the defendant it was contended that Section 6 did not apply, but that proceedings should have been taken under Section 3. It was proved that he was ignorant of the adulteration, that he could not with reasonable diligence have ascertained it, and that he had no reason or grounds for suspicion. But Section 3 supposes knowledge of the adulteration, so that defendant could not be convicted under that section. Section 5 provides that the seller of the article of food is not liable to conviction if he sells in ignorance of the adulteration and could not with reasonable diligence have obtained the knowledge. Here, again, the facts show that under this section the defendant ought not to be convicted. It was contended that he was liable to conviction under the sixth section, which is that "no person shall sell to the prejudice of the purchaser any article of food which is not of the nature, substance, and quality of the article demanded, &c." But the defence to this is given by the twenty-fifth section, that he sold the article as he bought it and that he had a

written warranty that it was of the nature, substance, and quality of the article demanded. Mr. Yates thinks that the legislature intended to make a difference between an adulteration of a harmless nature, as of milk with water or the abstraction of cream from milk, and an adulteration with substances prejudicial to health. In the former case an inferior article of food is sold. According to this view Sections 3, 4, and 5 codify the law as to adulteration that is prejudicial to health, and Sections 6, 7, 8, 9, and 25 the law as to adulteration that is other than prejudicial to health. "In this case," he said, "Section 3 mostly applies to the facts in evidence here. ..... Such being my opinion, I dismiss the summons, and I do so more readily as whoever may be to blame the one least of all to blame is the beer retailer." With this last opinion we all probably agree, and so the burden of responsibility is thrown back on the brewer, from him on the manufacturer of glucose and "inverts," and from him to the maker of sulphuric acid. There is to be an appeal in this case as in that before Mr. Headlam. The ultimate decision is important, as each stands for many others. Possibly learned judges may be able to bring order out of the apparent chaos of the Sale of Food and Drugs Act.

Manchester Royal Infirmary.

At a meeting of the Manchester Infirmary Board on Jan. 28th the chairman, Mr. E. S. Heywood, said that it was the last meeting for which he was appointed to act as chairman. He had held this position for 25 years, but did not wish to be re-elected to it, as he did not feel equal "to the heavy obligations which the duties of the position imposed." Mr. W. I. Crossley expressed the very great regret with which the board had heard Mr. Heywood's decision. His kind manner had endeared him to every member of the board "and the parting would cause a great pang." Mr. Heywood's retirement from the chairmanship of the board will, I am sure, be regretted by every member of the medical staff. Questions have to be considered from time to time which give evidence of differences of opinion between the board and the staff, but through all the discussions and controversies that have arisen the uniform courtesy and kindness and the characteristic fairness of mind which Mr. Heywood has always displayed have done much to render the intercourse between the lay and the medical authorities agreeable and beneficial. It may be hoped that his knowledge of infirmary problems and his wise judgment may long be given to the institution. At the same meeting the board confirmed a recommendation from the House Committee that "as an experiment 'kosher' food for Jewish inpatients should be provided for one year, under such restrictions as might be considered necessary"

Jewish Hospital Scheme.

A public meeting of the subscribers and supporters of the proposed Manchester Jewish Hospital was held on Feb. 3rd. The chairman said that the committee intended to have the name of Victoria, "England's late beloved Queen," connected with the hospital. He said that the concession of the infirmary as to "kosher" meat did not satisfy him and it was evident that it did not satisfy his audience. "Nothing would satisfy them until they had succeeded in establishing in their midst a Jewish hospital for the requirements of a large portion of the community of Manchester." They would require, he said, £6000 to build a hospital with 20 beds, £2000 for equipment, with at least £1500 or perhaps £2000 per year for maintenance. Dr. N. C. Haring moved a resolution to the effect that such a hospital was an "absolute necessity" and pledging the meeting to support the scheme. This view was taken by Dr S. Finklestein who said that Jewish medical men could fill the hospital with cases coming under their notice. The resolution was carried unanimously. Up to the present a sum of £174 has been subscribed, so that the promoters still have the hill before them.

The Ashton Infirmary.

The Ashton-under-Lyne District Infirmary has just received a bequest of £10,000 from the trustees of the late Mr. Holden of Mossley and Oldham. Special privileges are given in the bequest to the borough of Mossley. Part of the money will be appropriated to the establishment of a nurses' home at the infirmary. The Nursing Association's nurses can then go to cases in the surrounding districts, such as Ashton, Stalybridge, and Dukinfield, and live at the home, "whilst six additional nurses could be provided to meet a greatly felt want—viz., to nurse middle-class people who would be willing to pay 15*s.* or 20*s.* per week for their services if they could be spared the inconvenience of maintaining the nurse in the house." These places really form one town, and such a scheme, if found in working to be practicable, would no doubt be a great boon to many who cannot afford the expense of a nurse in the house and who in probably the majority of cases have not the necessary sleeping accommodation to lodge a nurse.

Salford Royal Nurses' Home.

The Salford Royal Nurses' Home, established to commemorate the Diamond Jubilee of our late beloved Queen, was formally opened on Jan. 26th. The advisability of postponing the ceremony had been discussed, but it was decided that it should take place as had been arranged. The movement for its establishment was set on foot by the then mayor, Sir Richard Mottram, in 1897. He was thought too sanguine in expecting to raise the £10,000 required, but it has been done, and as chairman of the committee he has had the satisfaction of being able to hand it over fully equipped for its useful purpose entirely free from debt and without one penny of "chief rent" upon it. The deeds and a letter from the Home Secretary authorising the home to be styled "Royal" were handed by Sir Richard Mottram to Dr. T. Arthur Helme, honorary secretary of the Sick Poor Nursing Institution. Lady Mottram then declared the Home open. In moving a vote of thanks to Lady Mottram, the Bishop of Manchester paid a touching and eloquent tribute to the memory of our late Queen and thought that Lady Mottram in her "labours for the erection of a home for the nurses of the sick poor had been working entirely in harmony with the feelings of the Queen and of the spirit of the age."

Small-pox Hospital for Manchester.

The Sanitary Committee of the corporation recommends the council to propose terms to the Salford Corporation for the purchase of a site in Drinkwater Park, Salford, for the erection of a joint small-pox hospital for Manchester and Salford. It is a difficult, one may say an impossible, task for towns to provide small-pox hospitals without exciting deadly opposition. This scheme will no doubt do so and yet it seems at first sight as little open to objection as any that can be devised and certainly has some advantages over the Carrington Moss scheme.

Feb. 5th.

WALES AND WESTERN COUNTIES

(FROM OUR OWN CORRESPONDENTS.)

A Plague-infected Vessel at Bristol.

THE medical officer of health (Dr. D. S. Davies) of the city of Bristol is fully alive to the possibility of the spread of plague from the s.s. *Rembrandt* upon which plague-stricken rats were recently found. About 100 persons who have been connected in one way or another with the vessel are being daily visited either by Dr. Davies or by his deputy, Mr. J. C. Heaven.

Lampeter Workhouse.

The prosperous condition of the labouring classes at the present time and therefore the absence of able-bodied men and women from the workhouses is significantly shown in a report which the medical officer of the workhouse recently presented to the Lampeter Board of Guardians in which he stated that, excluding the children, all the inmates were suffering more or less from mania, idiocy, imbecility, or hypochondria.

Carmarthen Lunatic Asylum.

The lunatic asylum at Carmarthen serves the three counties of Carmarthenshire, Pembrokeshire, and Cardiganshire, which at the last census had an aggregate population of about 290,000 persons. In his annual report to the joint visiting committee Dr. E. Goodall states that at the end of last year there were 633 patients in the asylum, including 40 private patients. During the year 1900 76 patients died, an increase in the number recorded in previous years, which is said to be due to an epidemic of influenza. The total number of patients admitted during the year was 116, and 16 of these were private patients. The average weekly cost of each patient was 9*s.* 7¼*d.* The visiting committee has decided to engage three additional male attendants and upon their appointment there will be an average of 12 patients to each attendant.

Sanitary Inspectors' Association of South Wales and Monmouthshire.

The Sanitary Inspectors' Association of South Wales and Monmouthshire which was established three years ago held its annual meeting at Aberdare on Jan. 26th. The association has a membership of 105 inspectors and of 74 other persons who are interested in public health matters. The discussion which followed the reading of a paper upon House-to-House Inspection at Aberdare indicated the existence of a full sense of their responsibilities by those who took part in it. Such associations as these ought to do a great deal towards abolishing the nuisance inspector whose office is often a sinecure. That the Local Government Board are anxious to have competent men appointed is well known, and in the case of the appointment of an inspector at Whitland in Carmarthenshire the Board has written to the district council asking for evidence of competency as the testimonials submitted to the Board referred only to character and not to qualification for the position.

Newport and Monmouthshire Hospital.

The financial position of the Newport and Monmouthshire Hospital is in marked contrast to that of many similar institutions. The income—£3041—last year fell short of the expenditure only by £31. There were treated during the year 540 in-patients and 2320 out-patients, and 1268 patients were visited at their homes. It was stated at the annual meeting of the subscribers to the hospital, which was held at Newport on Jan. 31st, that the cost of this home visiting amounted to about £500 yearly, and in view of the fact that in the new building there will be twice as many beds as there are in the present hospital, with a corresponding increase in the expenditure, the directors advised the discontinuance of this branch of the institution. Many subscribers were very much averse to giving up the home visiting, and after some discussion it was ultimately decided that it should be continued only until the opening of the new building. A pleasing feature in the report of the directors was contained in the statement that £1000 had been contributed by the workmen's committee. Three wards in the new hospital are to be completely furnished by Lord Tredegar, Alderman H. J. Davis, the chairman of the board of directors, and Alderman Thomas Jones.

Wage Limit at the Plymouth Royal Eye Infirmary.

The committee of the Plymouth Royal Eye Infirmary recently decided that single men earning more than 18*s.* weekly and married men earning over 30*s.* weekly should be ineligible for treatment at the institution, a plan which could with advantage be followed by other medical charities. The Plymouth District of Oddfellows, however, do not approve of this procedure, for at their annual meeting held on Jan. 28th it was decided to reduce their donation to the infirmary in consequence.

Bath Royal United Hospital.

The annual meeting of the subscribers of the Bath Royal United Hospital was held on Jan. 31st under the presidency of the mayor. The medical report stated that 1384 in-patients were admitted during 1900, against 1289 in 1899. The out-patients numbered 9151, an increase of 210 as compared with the preceding year. The financial statement was unsatisfactory, showing that the deficit of £1100 with which the year 1900 commenced had been increased to £3200. Sanitary improvements in the institution had caused a considerable expenditure. The cost of each bed was estimated at £52 per annum.

Plague in Cardiff.

A case of plague was notified to the Cardiff medical officer of health on Tuesday, Jan. 29th, and the patient, a married man, 38 years of age, died at his own home on the evening of the following Thursday. Dr. W. G. Savage, the bacteriologist to the Cardiff and county public health laboratory, on Tuesday obtained specimens of the patient's blood and after bacteriological examination he was able to report on Thursday morning that the disease was plague. On the same day the culture and fresh material were sent to Dr. Klein who on Sunday confirmed the positive diagnosis of Dr. Savage. Dr. Rees, one of the medical inspectors of the Local Government Board, visited Cardiff on Saturday and Sunday. It is stated that in the vicinity of the works, which are situated near the docks, where the patient was employed a very large number of dead rats have lately been found and that it had been part of his work to collect and destroy the carcasses. When the last case of plague occurred in Cardiff in October last the chairman of the health committee and the medical officer of health were empowered to take any steps they might think desirable for dealing with an outbreak of the disease. They have therefore decided that all men employed in mills or works adjoining the docks shall be medically examined by Dr. Walford who will have the assistance of several other medical practitioners in the town.

Arsenic in Beer at Merthyr.

In the Merthyr Police-court on Feb. 4th the Glamorgan County Council proceeded under Section 6 of the Sale of Food and Drugs Act, 1875, against a publican who had supplied beer which was found to contain one-sixth of a grain of arsenic per gallon. The medical officer of health of Merthyr, Dr. C. E. G. Simons, stated in his evidence that among the workmen employed at the brewery from which the beer was supplied there had been several cases of arsenical poisoning. The stipendiary magistrate imposed a fine of £5 and ordered the defendant to pay the costs.

Feb. 5th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Small-pox in Glasgow.

ABOUT the middle of last week there seemed some reason to believe that the epidemic of small-pox had spent its force, but more recent reports contradict this hopeful anticipation. On Feb. 2nd it was announced that 16 new cases had been admitted to hospital, three had been dismissed, and one had terminated fatally. The number of patients then under treatment was 407. The report on Feb. 4th shows 21 new cases and two dismissals, making the present total 428. In his official report to the corporation Dr. A. K. Chalmers attributes the rapid extension of the disease to the free movement of mild and unrecognised cases which would so easily and extensively occur during the holiday season. In the period from Jan. 13th to 21st, 256 persons were attacked with the disease, this great epidemic virulence corresponding with an added incubation stage of from 10 to 14 days to the opportunities for exposure afforded by the New Year holidays. A further factor is the insufficient vaccination of large sections of the population. As far back as June last the health committee, in view of the then distribution of small-pox, issued a recommendation advising revaccination and offered to pay a fee to practitioners for every case. This advice, however, fell for the most part on heedless ears. Dr. Chalmers considers that, whilst the rush of cases created by the holiday period has passed, a secondary increase of cases is likely to occur at a period corresponding to infection on Jan. 17th, the day on which the maximum amount of infection is known to have been present among the population. In connexion with the subject of revaccination the medical officer draws attention to the fact that during the epidemic the members of the Postal Service, who have necessarily been brought into contact with the infected areas and who are all compulsorily revaccinated, have enjoyed complete exemption from the disease.

Glasgow Maternity Hospital.

The annual report for the past year shows a considerable increase in the work of the hospital and it is becoming evident that the directors will ere long have to face a demand for increased accommodation. Last year the experiment was tried of adding two ladies to the directorate and it is now reported that the result has been a singularly happy one. During the year 116 medical students were enrolled and 42 nurses received a training in obstetric nursing. Dr. Alexander Robertson, who has for many years been one of the most active directors of the hospital, has intimated his resignation. Dr. J. M. Munro Kerr has been appointed one of the obstetric physicians to the hospital and Dr. A. W. Russell one of the assistant obstetric physicians.

Glasgow Eye Infirmary.

The annual meeting of the contributors to the infirmary was held on Jan. 31st. Sir James King, Bart., in moving the adoption of the report, referred to the resignation of the senior surgeon, Dr. Thomas Reid, who has for nearly 40 years been a member of the hospital staff. On behalf of the directors he expressed a very hearty appreciation of Dr. Reid's services, and cordial good wishes for his happiness and welfare. The in-patients admitted during the year

numbered 1448 and the out-patients 18,478. From the report it appears that in 149 cases an eye was removed; in three of these the operation was demanded by an injury resulting from the use of a fork to untie a bootlace; and in nine the eye was lost in consequence of blows inflicted by a fist. The directors gratefully acknowledge various legacies, including one for £1000 from the trustees of the late Professor P. A. Simpson, M.A., M.D., who formerly occupied the chair of Forensic Medicine in the University of Glasgow.

Glasgow Royal Infirmary.

Each week seems to bring some new difficulties or dispute in connexion with the reconstruction scheme. The most recent is a difference of opinion which has manifested itself between the infirmary managers and the Jubilee Memorial Committee on the question of financial responsibility. The managers, as stated in this column last week, wrote accepting the scheme and plan adopted by the committee on the understanding that they were not involved in any financial responsibility. But when this communication was submitted to the Memorial Committee on Feb. 1st it produced an explosion of indignation. Sir David Richmond, in a lengthy speech, moved that the managers' letter be not accepted, and this was passed unanimously. In speaking on the motion Sir David Richmond described the position of the managers as an attempt to absolve themselves of their proper responsibilities and characterised their proposal as an audacious one. The Jubilee Committee had raised £100 000 and now offered to re-build a certain section of the infirmary. When that was performed their function ceased and the managers must rely on their own resources. This view appeared to find general acceptance with the committee, but the public are inclined to ask: If the committee only contemplated a partial action why did they invite a number of architects to submit plans for a complete reconstruction—plans which it would now appear they never had any intention to carry out? The committee have appointed a deputation to confer with the managers with a view to establish a *modus vivendi*, and have determined to issue a statement of their case so as to regain public sympathy. It is not difficult to understand the present confusion and conflict when it is remembered that the promoters of the plan launched their scheme without any consultation with either the managers or professional staff of the infirmary.

Feb. 5th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

A Central Laboratory for the Irish Asylums.

THE Chief Secretary for Ireland on Jan. 29th received a conjoint deputation from the Royal Academy of Medicine in Ireland and the Irish division of the Medico-Psychological Association of Great Britain and Ireland, with reference to the project of establishing a central laboratory, devoted to pathological research in connexion with insanity, for the asylums of Ireland. The object of the deputation was to request the good offices of the Chief Secretary with a view to affording asylum committees the power, which they do not now possess, to contribute to such an institution, the idea of which has met with general approval not only from the medical profession, but from the daily press, both Unionist and Nationalist, and from various influential members of Parliament on both sides of the House. The deputation consisted of Dr. Lombe Atthill (President of the Royal Academy of Medicine in Ireland), Professor D. J. Cunningham, F.R.S., Sir Christopher Nixon, Mr. A. D. O'C. Finegan (secretary of the Irish division of the Medico-Psychological Association), Mr. Conolly Norman, and Dr. W. R. Dawson.

Dr. Atthill, having introduced the deputation, referred to a general statement of its objects, which had already been laid before the Chief Secretary, and said that they were there to afford him any additional information that he might desire.

Sir Christopher Nixon then spoke at some length on the desirability of a central laboratory for the Irish asylums, explaining that it was to be of a similar nature to the laboratories already established by the London County Council for their asylums and by the Scottish asylums at Edinburgh. He thought that it ought to be done thoroughly and that the estimate made by Dr. Dawson of about £600 a year was not enough to allow for its support.

Professor Cunningham pointed out that he understood that the laboratory of the Scottish Asylums was only costing about £600 a year. Ireland was very badly off for laboratories for pathological research as compared with the sister kingdom and he hoped that the Chief Secretary would see his way to assisting in the matter.

The Chief Secretary expressed complete approval of the project of establishing the laboratory. He thought that perhaps the strongest argument in its favour was the existence of similar institutions in England and Scotland. He was of opinion that the proper mode of approaching the subject was not on the merely utilitarian side, but that the scheme was deserving of all encouragement as a means of furthering scientific knowledge by research. There would be the less difficulty in conceding the request of the deputation that no expenditure was asked for, but he feared that it might be objected that the money contributed by the asylums would ultimately have to be supplied from some public source, and he wished to know whether the Irish asylums had any fund at their disposal from which this expenditure might be drawn.

Mr. Norman explained that the public asylums in Ireland had no endowment, but were supported partly by a fixed capitation grant from the Treasury and partly from the rates. The expense, therefore, would fall ultimately on the rates.

The Chief Secretary, resuming, thanked Mr. Norman for his clear statement. He mentioned one or two minor difficulties and said that he could give no actual promise as he did not know when a Bill would be brought in into which the permissive clause desired could be introduced, and that the Government would not think of putting any pressure on the public bodies concerned with the view of compelling them to contribute; but, so far as the permissive clause went, he would be glad if he obtained the approval of his colleagues to insert it into a suitable Bill, and he thought that he might say that this would in all probability be done. He strongly advised, however, that the matter should not be left to the Government merely, but should be urged on the public bodies concerned and brought before the public generally in a way to secure the widest possible support. The £25 or £30 annually which would be required from each county was a very trifling sum.

After a few remarks from Dr. Dawson and Mr. Finegan, Dr. Atthill thanked the Chief Secretary for his reception and the deputation then withdrew.

The Election of a Direct Representative for Ireland on the General Medical Council.

Mr. T. Laffan is contesting the position of Direct Representative for Ireland in the General Medical Council with Sir William Thomson. Mr. Laffan's independence and deep interest in medical education are well known, but if he has no possibility of success his movement will not be for the benefit of the medical profession. The expenditure connected with the Irish Branch Council in the present state of its finances should not be increased, which must be the effect of a contest. There is, too, a decided advantage in avoiding a contest if the result is certain beforehand. It gives additional strength to a candidate unanimously elected. Thus Mr. Laffan incurs great responsibility in his action which only considerable success at the poll will justify.

The Irish Poor-law Medical Service.

A deputation representing the Irish Poor-law Officers' Association waited on the Chief Secretary for Ireland on Jan. 31st and laid before him the necessity of extending to Ireland the English Act which makes it compulsory on local bodies to grant superannuation allowances to all their officials. In reply to Mr. T. W. Russell, M.P., who introduced the deputation, Mr. Wyndham said that if a private Bill was introduced into the House of Commons he would be prepared to support it, although he could not promise that the Government would introduce legislation on the subject. Another deputation representing the Irish Poor-law medical service waited on the Chief Secretary on the following day (Feb. 1st) in reference to the grievance of medical officers as regards superannuation. In reply Mr. Wyndham stated that he was not in favour of drawing a line between the medical and lay officers concerned with the administration in Ireland, but that he would do all that a member of the Government could do to facilitate a private Bill if brought in with something approaching to general consent. A private Bill, he said, which was not contentious, passed through the House of Commons with very little difficulty, as its stages were automatically taken. The accounts of the interviews of these deputations occupied

many columns of the local daily journals, a clear proof that the matter is felt to be one of wide general interest.

A Bacteriological Institute for Ireland.

The annual meeting of the Dublin branch of the British Medical Association was held in Dublin on Jan. 31st, when Sir George F. Duffey was elected President, and delivered an address dealing mainly with the necessity of the establishment of a bacteriological institute for Ireland to be located in Dublin.

Medical Appointment.

Dr. J. B. Story, Professor of Ophthalmic Surgery, Royal College of Surgeons in Ireland, surgeon to the Royal Victoria Eye and Ear Hospital, &c., has been appointed surgeon oculist to His Excellency the Lord Lieutenant of Ireland in the room of the late Dr. A. H. Jacob.

Health of Belfast.

During November 230 cases of zymotic disease were notified—viz., 68 of typhoid fever, 57 of simple continued fever, 40 of erysipelas, 33 of scarlet fever, 20 of diphtheria, nine of membranous croup, and three of puerperal fever. There were 43 deaths from zymotic disease, 95 from phthisis, and 219 from diseases of the respiratory organs. The annual death-rate from all causes was 21·0, that for children under one year old 4·5, and that for those of 60 years and upwards 6·5 per 1000 of the population. In the corresponding period of last year the death-rate from all causes was 26·3, that from zymotic diseases 2·0, and that from chest affections 12·8 per 1000 of the inhabitants. The present death-rate is therefore very low, though slightly greater than that of last month. This is entirely due to causes other than zymotic diseases or chest affections, both of which show a slightly lower rate than in the preceding month. The low rate from the latter cause is due mainly to the unusually high temperature which prevailed during the period, and contrasts very favourably with that of the corresponding month of last year, when it was 12·8.

The Samaritan Hospital, Belfast.

At the annual meeting of the supporters of this hospital held on Feb. 4th it was reported that during the past year 652 patients had been treated in the extern department and 197 in the wards, of whom 157 required surgical treatment. 45 major operations had been performed, and the great majority of the patients had made good recoveries. The hospital was now entirely free of debt, but an additional £100 per annum was still needed from subscribers to make the hospital self-supporting.

Rainfall in Belfast during January.

During the month of January, 1901, the rainfall was 3·05 inches, which fell on 23 days, this amount being well under the average and almost one inch less than the corresponding period of last year.

The Death of the Queen.

Universal sorrow has been felt in Belfast at the passing of the great and good Queen Victoria. On Feb. 2nd all the shops were closed, the city was in a state of mourning, and memorial services were held. In no place in the empire is the feeling of the people more loyal than in Belfast.

Feb. 5th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

An Office Spittoon.

AT the meeting of the Academy of Medicine held on Jan. 15th M. Brouardel read for M. Ch. Périer a note relating to the use of individual spittoons for clerks and office employés as a means of prophylaxis against tuberculosis. M. Périer reminded the meeting that the Academy, on June 28th, 1898, unanimously agreed to the conclusions formulated in a report of Professor Grancher, which was read in the name of the Commission on Tuberculosis. The prophylactic measures recommended as being extremely simple to carry out were as follows:—1. Sputa should be collected in a pocket spittoon holding a little carbolic acid solution of 5 per cent. strength and coloured, or at least a little water. 2. Dust should be avoided as far as possible by the substitution of wiping over furniture, floors, and the like with a damp cloth instead of sweeping or brushing them. 3. All milk, whatever its source, should be boiled before drinking it. These measures are certainly perfectly simple and easy to apply in public life, but in large establishments the problem becomes more and more complex as the number of employés increases and tends to become almost insoluble. Railway companies are a flagrant example of this. The practical difficulties may be resolved into a question of money. Other difficulties may be overcome by persuasion. With regard to passengers all that can be done is to request them not to spit elsewhere than in spittoons, and it would seem easy to demand the same practice from clerks and the like congregated in greater or less numbers in an office where they spend many hours a day. The matter, however, is not so easy. A spittoon used in common is disgusting and a likely source of danger, so that one intended for office clerks must be some form of individual apparatus. Pocket spittoons will not do, for the difficulty of having them administratively cleansed would make them agents of spreading disease rather than a means of defence against it. The apparatus chosen must therefore be one of the class known as "indoor" (*d'appartement*). Professional etiquette does not allow the tuberculous clerks to be ear-marked by having spittoons distributed to them alone, therefore every clerk must have one. The tuberculous clerk does not like everyone to see what he spits up, neither does he want his senses offended by the sight of his colleagues' spittoons. This feeling must be respected; if it is ignored spittoons will be found used as flower vases or hidden away in drawers or cupboards. Thus the desired end is the least attained in the very place where it is most to be desired, and this, too, is due to the resistance to prophylactic measures of the very person whose interest in the success of such measures is the greatest. This resistance, therefore, must be overcome by altering the circumstances which give rise to it. Three conditions must be fulfilled: (1) the spittoon must not be clumsy; (2) it should be concealed in some way; and (3) it must be able to be carried in the hand. The Northern Railway Company is just about to adopt a form of spittoon which seems to fulfil all the above-mentioned conditions. It is made of blue glass and has a handle and it is kept in a box open at one side. On the top of this box, which occupies the usual position of the ink, is placed the inkstand. The clerk, therefore, has only to raise his hand a little higher than usual to dip his pen and this is the sole inconvenience which this little piece of furniture will cause him.

The Influence of Climate upon Experimentally Produced Tuberculosis.

At the Congress upon Tuberculosis held last year at Naples M. Lannelongue, M. Achard, and M. Gaillard communicated the results of their experiments upon the above subjects—results which were astonishing. Their report was read before the Academy of Sciences at the meeting held on Jan. 21st. Two sets of experiments were made. 300 male guinea-pigs were divided into six lots of equal weight and were inoculated simultaneously with an equal dose of human tuberculosis culture. They were then kept in different climates and at different altitudes, such as at sea-level, at a height of 1000 metres above sea-level, in the midst of woods, and in a plain. The two remaining lots of 50 each were kept in a laboratory at Paris where they got no sunshine, or, indeed, much light of any kind. The laboratory was badly ventilated and damp, full of ammoniacal emanations, and an atmosphere containing 1700 microbes to the cubic metre. The temperature was fairly equable, however, and the animals had to keep still because there was no room for them to run about. One experiment lasted for one year, six months, and five days, while the other lasted for one year, two months, and 20 days. Of the laboratory guinea-pigs six remained alive of the first lot and 11 of the second. Of those kept at the sea-level there remained three, of those on the hills four, and of those in the plain one. One important result of these experiments is the fact that tuberculosis behaves very differently in animals of the same class. As in these experiments the doses were equal and the animals of the same class were kept under identical conditions it would seem that the differences in the evolution of the disease were due to the different resistance power of the individual animals. Some died from diffuse tuberculosis at the end of six months and some out of the same lot at the end of 15 or 18 months with only a few very localised thoracic lesions. In three animals the infection either aborted or underwent spontaneous cure.

Radio-pelvigraphy and Radio-pelvimetry at Long Range.

At the meeting of the Academy of Sciences held on

Jan. 21st M. Varnier said that it was possible to obtain, simply by means of a radiograph, a better representation of the bony pelvis than by ordinary pelvimetry. The dimensions were accurate and diameters were obtained of sufficient exactitude to be useful to the obstetrician—namely, those of the false pelvis and of the entrance and exit of the true pelvis. The radiograph was taken in the prone position—i.e., with the subject or patient lying in the ventral position. The bulb is placed at a distance of 2·50 metres from the sensitive plate so that the kathode is perpendicular to an axis passing through the plane of the brim of the pelvis. Under these conditions the exaggerations in the diameters amount only to some five millimetres. The method is applicable in the case of the living woman as well as in the cases of a corpse or of a dry bony pelvis. M. Varnier made some experiments upon both dried specimens and upon dead bodies which showed that if the tube were placed still further off—namely, at a distance of five metres—even the small error of five millimetres was avoided. With an exposure of 10 minutes and a current of 10 ampères at 26 volts M. Varnier obtained a good radiograph of a dried pelvis at a distance of 25 metres. With 20 minutes' exposure a radiograph was obtained at a distance of 30 metres. Two metal bars gave good results at distances of between 35 and 40 metres and a leaden spiral was successfully radiographed at a distance of 45 metres. The dead body could be radiographed at a distance of five metres and the living hand at the same distance in nine minutes. These results give good ground for thinking that before long it will be possible to radiograph with accuracy the pelvis of a living woman at a distance of five metres and thus to avoid the slight exaggeration obtained at a distance of 2 50 metres. Apparently radiography even in its present stage can give superior results in this connexion to those obtained by digital, manual, or instrumental pelvimetry.

Feb. 6th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

On the Relation of the Mucous Membrane of the Nose to the Female Sexual Organs.

SOME years ago Dr. Fliess of Berlin published a monograph on the Relation of the Mucous Membrane of the Nose to the Sexual Organs in Females,[1] and in this work he made the announcement that in the nasal mucous membrane there are two spots which are capable of influencing sensation in the female genital organs. By touching the anterior end of the inferior turbinated bone with a probe a feeling of pain in the hypogastric region is produced in women suffering from dysmenorrhœa, while touching the tuberculum septi produces a pain in the sacral region. The pain produced is always on the side of the body corresponding to the nasal spot that is touched. Dr. Fliess made the further observation that the pain of dysmenorrhœa was immediately relieved when a strong (20 per cent.) solution of cocaine was applied to those two nasal spots, and that dysmenorrhœa could be cured completely by caustic treatment of the anterior part of the inferior turbinated bone and the tuberculum septi. He also asserted that at the time of menstruation a swelling of the mucous membrane of the nose at the two above-mentioned spots could be observed. These statements of Dr. Fliess were much doubted by the medical profession and his mode of treating dysmenorrhœa found no acceptance. Three years ago, however, Dr. A. Schiff of Vienna commenced a re-investigation of the subject at the gynæcological clinic of Professor Chrobak in Vienna. His first series of cases consisted of 26 women suffering from dysmenorrhœa, and the second consisted of 21. Of these 47 cases of dysmenorrhœa with intense continuous pains lasting for some days 37 were treated successfully by the application of cocaine to the turbinated bone and to the tuberculum septi, so that the treatment was successful in 72·4 per cent. of Dr. Schiff's patients. The effect of the application of a 20 per cent. solution of cocaine to the nasal spots lasted each time for nearly 24 hours. The experiments were made in such a way that any influence of suggestion was perfectly excluded. Cocainisation of other parts of the interior of the nose or of the pharynx did not produce any effect on dysmenorrhœal pain. Experiments made by Dr. Schiff also corroborated the statements of Dr. Fliess with regard to the connexion (1) between the tuberculum septi and painful sensations in the sacrum and (2) between the inferior turbinated bone and painful sensations in the abdomen. Dr. Schiff also confirms the observations of Dr. Fliess that dysmenorrhœa caused by mechanical obstruction (stenosis of the uterine orifice, narrow cervical channel, anteflexion of the uterus, &c.) was not influenced by cocainisation of the nasal mucous membrane. Hysterical dysmenorrhœa also did not yield to the cocaine treatment, while even dysmenorrhœa combined with structural disease of the uterus and of the adnexa was curable by the nasal treatment as well as nervous dysmenorrhœa. In 17 cases Dr. Schiff tried the treatment of the "nasal genital spots" (as they are called by Dr. Fliess) with caustics and with electrolysis, which proved perfectly successful in 12 of these patients. Dr. Schiff therefore recommended the nasal treatment of dysmenorrhœa as suggested by Dr. Fliess, and some of the Vienna rhinologists and gynæcologists have reported their experiences at recent meetings of the Vienna Society of Physicians and have spoken in favour of this treatment of dysmenorrhœa. But in the discussion on this subject, which occupied three evenings, no one suggested any satisfactory theory as to this interesting relation between the nose and the female sexual organs. One of the speakers made an allusion to the work of Dr. Head, while another called attention to the old theory of sympathetic action which prevailed in the middle of the nineteenth century (Henle).

Feb. 1st.

[1] THE LANCET, June 26th, 1897, p. 1775.

Medical News.

VACCINATION GRANT.—Dr. W. Napper Nevill, the public vaccinator for Bedminster, has been awarded a grant for successful vaccination from the Local Government Board.

PRESENTATION TO A CENTENARIAN. — Mrs. R. Brembridge of Sidmouth, Devon, celebrated her hundredth birthday on Jan. 21st and was presented with an illuminated address by the tradespeople of the town.

PROFESSOR VIRCHOW'S MUSEUM.—The Vienna *Neue Freie Presse* of Jan. 17th states that a disastrous fire has occurred at the Pathological Institute in Berlin and that the most valuable portion of Professor Virchow's private museum has been destroyed. The loss of the anthropological collection made in the Philippine Islands by Professor Jagor is especially regretted.

AMBULANCE FIRST AID AT COLCHESTER.—At the weekly parade of the Colchester Borough police, held on Feb. 1st, the Mayor of the town presiding, the certificates obtained by the members of the force in connexion with the St. John Ambulance Association, were distributed, after which, on behalf of the class, the Mayor presented Mr. J. E. A. G. Becker, M.B. Edin., L.R.C.P. Lond., M.R.C.S. Eng., for his instructive ambulance lectures, with a gold mounted umbrella, inscribed "Dr. Jonathan Becker, from the Colchester Police Ambulance Class, December, 1900."

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

ADAMS, E. G. B., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed District Medical Officer, Langport Union, vice J. D. Adams, resigned.

ALLEN, F. J., M.D. Cantab., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health by the Westminster Borough Council.

ARKLE, G. M., L.S.A., has been appointed Medical Officer to the Belmont-road Workhouse, West Derby Union, vice J. J. Flinn, resigned.

BAILEY, R. T., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Medical Officer to the Infirmary, West Derby Union, vice W. R. E. Williams, resigned.

CLAPHAM, CROCHLEY, M.D., F.R.C.P.E., has been appointed Consulting Physician to the Royal Hospital, Sheffield.

DUDFIELD, R., M.B. Camb., L.R.C.P. Lond., M.R.C.S., D.P.H. Camb., has been appointed, *pro tem.*, Medical Officer of Health for the City of London, vice S. Saunders, deceased.

EATON, OLIVER, L.R.C.P. Lond., M.R.C.S., D.P.H. Camb., has been appointed Certifying Surgeon under the Factory Acts for the Exmouth District of Devonshire.

EDMOND, W. R., M.B., C.M. Edin., L R C.P. Edin., M.R.C.S., has been appointed District and Workhouse Medical Officer, Totnes Union, vice L. J. Hains, resigned.

FRASER, JAMES, M.B., C.M. Aberd., has been appointed Deputy Medical Superintendent at the Cleveland-street Asylum, Central London Sick Asylum District.

GREGORY, E. T., M R.C.S., has been appointed District Medical Officer, Paddington.

HEDIN, S. G., M.D. University, Lund, Sweden, has been appointed Chief of the Department of Pathological Chemistry, Jenner Institute of Preventive Medicine, London.

HELM, W. A., M.B., Ch. B. Vict., has been appointed Assistant Medical Officer of the Infirmary, Parish of Birmingham, vice E. C. Gorman, resigned.

HOGG, KATIE WELTON, B A. Sydney, M.B., Ch.B Edin., L.M. Coombe Hospital, Dublin, has been appointed Assistant to the Master, Coombe Hospital, Dublin.

HUNT, J. W., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed First Assistant Medical Officer at the Hendon Asylum, Central London Sick Asylum District.

JENKINS, J. D., M D. Lond., B.S., L.R.C.P., M.R C.S., has been appointed Medical Officer of Health, Rhondda Urban District.

LEATHES, J. B., M.B., B.Ch. Oxon., F.R C.S. Eng., has been appointed Assistant in the Department of Pathological Chemistry, Jenner Institute of Preventive Medicine, London.

LEGG, T. PERCY, M.B., F.R.C.S., has been appointed Assistant Surgeon with charge of Out-Patients to the Royal Free Hospital, Gray's Inn-road, London, W.C.

LITTLEJOHN, E. SYDNEY, B.A., M.D., C.M., has been appointed Visiting Medical Officer to the Thomas Walker Convalescent Hospital, Concord, Sydney, New South Wales.

MARSHALL, T. B., L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer, Maldon Union, vice F. Pershouse, resigned.

NORMAN, R. H., M.D. Lond., B.S., M.R.C.S., L.R.C.P., has been appointed Honorary Physician to the Holloway and North Islington Dispensary.

PRICE, E. O., M.D. Edin., has been appointed Certifying Surgeon under the Factory Acts for the Bangor District of Carnarvonshire.

TROUGHTON, A. J., L.R.C.P., L.R.C.S. Edin., L.F.P. & S. Glasg., has been appointed Medical Officer for the Bentham District of the Settle Union.

WEBSTER, A. J., M.B., C.M. Edin., has been appointed District Medical Officer for the parish of Willesden.

YOUNG, W. J., L.R.C P. Lond., M.R C.S., has been appointed Assistant in the Chemical Department, Jenner Institute of Preventive Medicine, London.

WHYTOCK, A. S., M.A., M.B., Ch.B. Edin., has been appointed Resident House Surgeon to the Brighton and Hove Hospital for Women, vice H. R. L. Joy, resigned.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BATH ROYAL UNITED HOSPITAL.—Resident Medical Officer. Salary £125 per annum, with board, lodging, and washing.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Senior House Surgeon. Salary £65 per annum. Also Junior House Surgeon. Salary £60 per annum, with board, lodgings, and attendance.

BOROUGH HOSPITAL, BIRKENHEAD.—Senior and also Junior Resident House Surgeon. Salary £100 and £80 respectively per annum, with board and washing.

CITY ASYLUM, Birmingham.—Resident Clinical Assistant, single and under 30 years of age. An honorarium attaches to the post of £50 a year, board, lodging, and washing provided.

COUNTY ASYLUM, Whittingham, Lancashire.—Senior Assistant Medical Officer. Salary £225 per annum, rising to £250 at the end of 12 months, with board, lodging, washing, and attendance.

DISTRICT INFIRMARY, Ashton-under-Lyne.—House Surgeon. Salary £100 a year and board and lodging.

DONCASTER GENERAL INFIRMARY AND DISPENSARY.—Assistant House Surgeon, unmarried. Board and residence provided.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark-bridge-road, S.E.—Junior Resident Medical Officer and Registrar. Salary £50, with board and washing.

GLASGOW SAMARITAN HOSPITAL FOR WOMEN. — House Surgeon (female).

GLOUCESTER COUNTY ASYLUM.—Third Assistant Medical Officer. Salary £150 per annum, rising to £180, with board, lodging, and washing.

GUEST HOSPITAL, Dudley.—Senior Resident Medical Officer. Salary £100 per annum, increasing £10 a year to £120, with board, residence, attendance, and washing.

GUILDFORD, GODALMING, AND WOKING JOINT HOSPITAL BOARD.—Medical Officer for the Isolation Hospital at Woodbridge, Guildford. Salary £175 per annum.

GUILDFORD RURAL DISTRICT COUNCIL.—Medical Officer of Health. Salary £250 per annum, which will include travelling and all other expenses.

GUY'S HOSPITAL MEDICAL SCHOOL.—Gordon Lectureship in Experimental Pathology.

HEIGHAM HALL ASYLUM, Norwich.—Assistant Medical Officer.

HULL ROYAL INFIRMARY.—Junior Assistant House Surgeon. Salary £40, with board and lodging.

ISLANDS OF SANDAY AND NORTH RONALDSHAY.—Resident Medical Officer. Salary £80 per annum, with dwelling-house, offices, garden, and ten acres of ground, subject to annual rent of £22.

KENT COUNTY ASYLUM, Barming Heath, Maidstone.—Fourth Assistant Medical Officer and Pathologist. Salary £175 per annum (rising £5 a year), with furnished quarters, attendance, coal, gas, garden produce, and washing.

LINCOLN COUNTY HOSPITAL.—Assistant House Surgeon for six months, eligible for additional six months. Honorarium of £25 for each period of six months, with board, residence, and washing.

LIVERPOOL DISPENSARIES.—Assistant Surgeon, unmarried. Salary £100, with board and apartments.

LONDON COUNTY ASYLUM, Cane-hill, Purley, Surrey.—Junior Assistant Medical Officer, between twenty-three and thirty years of age. Salary £150 per annum, with board, furnished apartments, and washing.

LONDON TEMPERANCE HOSPITAL.—Assistant Surgeon. Honorarium of 50 guineas a year.

METROPOLITAN ASYLUMS BOARD.—Not fewer than Three Assistant Medical Officers (unmarried, and not exceeding 35 years of age), at the Fever and Small-pox Hospitals. Salary £160 per annum during the first year, and (subject to the direction of the Hospital Committee, £180 the second year, and £200 the third and subsequent years, with board, lodging, attendance, and washing (subject to statutory deductions under the Poor-law Officers' Superannuation Act, 1896).

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer. Salary £60 per annum, with board, attendance, and washing.

NORTH RIDING ASYLUM, Clifton, York.—Assistant Medical Officer, not more than 30 years of age. Salary commencing at £125, rising to £175, and £10 in lieu of liquor, with board, lodging, washing, and attendance.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Salary £140 per annum, all found except board.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Physician. Salary £100, with board, lodging, and washing. Also Assistant House Surgeon. Salary £100 per annum, with board, lodging, and washing.

OWENS COLLEGE, Manchester.—Senior Demonstrator in Anatomy.

ROYAL EAR HOSPITAL, Soho.—House Surgeon, non-resident. Small honorarium.

ROYAL SEA-BATHING HOSPITAL, Margate.—Assistant Resident Surgeon. Salary £60 per annum, with board and residence.

ST. OLAVE'S UNION.—Assistant to the Medical Officer and Dispenser at the Workhouse, Ladywell, S.E. Salary £50 per annum, with rations, furnished apartments, washing, attendance, and £4 per annum in lieu of beer.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary at the rate of £24 per annum, with board, washing, and residence.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies for Certifying Surgeons under the Factory Acts at Sherston, in the County of Wilts; at Linton, in the County of Cambridge; at Wainfleet, in the County of Lincoln; and at Wooler, in the County of Northumberland.

WARNEFORD ASYLUM, Oxford.—Assistant Medical Officer, unmarried. Salary £100 a year, with board, lodging, and washing.

WARRINGTON INFIRMARY AND DISPENSARY.—Senior Resident House Surgeon, unmarried. Salary £120 per annum, with furnished residence and board.

WEST BROMWICH DISTRICT HOSPITAL. — Resident Junior House Surgeon. Salary £50 per annum, with board, lodgings, washing, and attendance.

WOKING URBAN DISTRICT COUNCIL.—Medical Officer of Health. Salary £80 per annum.

YORK COUNTY HOSPITAL.—Resident Assistant House Surgeon. Salary £60 per annum, with board, attendance and washing.

Births, Marriages, and Deaths.

BIRTHS.

BALLINGALL.—On Feb. 2nd, at Grand-parade, St. Leonards-on-Sea, the wife of George A. Ballingall, M.D., of a daughter.

BURTON-FANNING.—On Feb. 4th, at Norwich, the wife of F. W. Burton-Fanning, M.D., of a son.

CROPPER.—On Feb. 5th, at Mount Ballan, Chepstow, the wife of John Cropper, M.B., B.C. Camb., of a daughter.

JOHNSON.—On Feb. 2nd, at Osborne-terrace, Church-street, Egremont, Cheshire, the wife of Alfred Johnson, M.R.C.S., L.R.C.P., of a son.

PATERSON.—On Feb 2nd, at Windsor-place, Cardiff, the wife of Donald Rose Paterson, M.D. Edin., of a daughter.

MARRIAGES.

ARCHER—PHILPOTT.—On the 5th Feb., at Christchurch, Adelaide, South Australia, Edmond Lewis Archer, M.B. Durh., to Helen Philpott of Prince's-square, Bayswater, London. (By cable.)

HAYWARD—ROLLESTON.—On Feb. 4th, at Christ Church, Lancaster-gate, W., John Arthur Hayward, M.D., elder son of the late John Hayward, of Rushall, Wilts, to Rosamund Grace, younger daughter of the late Professor Rolleston, F.R.S., of Oxford.

DEATHS.

BARBER.—On Jan. 24th, at his residence, the Croft, Eastwood, suddenly, Robert David Barber, M.R.C.S. and L.S.A., aged 36 years, youngest son of the late Samuel John Barber, architect, of Eastwood, Notts.

OGILVIE.—On Feb. 2nd, at Welbeck-street, Cavendish-square, Leslie Ogilvie, M.D., M.R.C.P., aged 47 years.

PRICHARD.—On Feb. 2nd, at Redland-road, Bristol, James Edward Prichard, B.A., M.B. Oxon., Surgeon to H.M. Prison, Horfield, Bristol, aged 51 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

PERSONATION AT EXAMINATIONS.

A CASE is at present before the courts in which a medical coach is charged with personating a pupil. Without in any way commenting upon this particular case we may remark that the special system presumably adopted is far superior to that ordinarily used. Supposing that a man is in for an examination and feels doubtful of passing (we will call him A), nothing would seem easier than for A to say to B: "You go into the examination room and do the papers under my name as representing myself." But if any suspicion should arise A is nonplussed. He can only know what went on in the room from hearsay, and he has no means of proving that he was in the room. But supposing A and B to enter jointly for the examination, only entering under each other's names, A will be in a much better position, for if any questions are asked he will have actually been through the examination, although he will probably have failed. A and B may both get through, in which case B simply does nothing more and A takes the position he has rightly won. But if A masquerading as B fails he has only to assume the position which he has fraudulently acquired through the agency of B. The plan is so simple that we almost wonder how many times it has been carried out. The only way in the above hypothetical case in which A could be found guilty would be for the examiners to ask him to write a passage, in which case, as in all probability he could not imitate B's handwriting with exactness, the fraud would come to light. But for the examiners to do this presupposes that they had knowledge of what A was going to do before he did it. The size of modern examination classes renders anything like a personal identification of the candidates very difficult, but something of the kind will have to be done if frauds such as those to which we have alluded are to be made impossible.

SPECIALISM *AD ABSURDUM*.

THE December, 1900, number of the *St. George's Hospital Gazette* contains some amusing verses signed "J. B.," an author who was, if we remember right, responsible for some of the words published in the St. George's Hospital songs, a work reviewed in our columns some two years or so ago. (THE LANCET, Dec. 17th, 1898, p. 1642.) "J. B.'s" lyric is entitled, "Wanted, a Specialist," and sets forth the untimely fate of a titled valetudinarian who was always ill, or thought he was. Eventually he suffered from—but we will let "J. B." tell the story in his own words.

A tumour he developed on
A spot that's quite neglected;
No specialist for just that point
He anywhere detected.

So curiously was it placed,
That, search from toe to crown,
You saw it not when he stood up,
Still less when he sat down.
From day to day the swelling grew,
So vast became that tumour,
You could not say which was the growth
And which Sir Francis Boomer.

And so at last it finished him,
Despite his numerous staff,
And he explained the cause of death
In this his epitaph:

"My ailment could not treated be,
The times were out of joint;
There was no specialist upon
The Perineal point.
Some doctors find their work before,
And others theirs behind.
But none devotes attention to
The spot which I've defined."

We are evidently sadly behind the times. In ancient Egypt, says Herodotus, "every disease hath his several physician," and possibly the end of the new century may see "perinealists."

THE CASE OF MR. JOSEPH HENDERSON MARTIN.

To the Editors of THE LANCET.

SIRS,—I am desired by Mrs. Joseph Henderson Martin to thank on her behalf those who have so generously helped her and her family in the dire straits to which they have been reduced by the sudden breakdown of her husband. The appeal I made to you and which you published in THE LANCET of Nov. 10th last, p. 1395, had produced the sum of £23 and I had begun to think no further subscriptions would be received until this morning's post brought me a very sympathetic note from an old "fellow-student" at present serving in South Africa. He does not wish his name published, but encloses a cheque for £5. The latest report of Mr. Martin is that he is much worse and his death is expected very shortly. If any of your readers could assist, or bring any influence to bear upon those who have the power, to get either of the boys into Epsom or Christ's Hospital it would be most gratefully accepted. Should there be any of those who knew Mr. Martin who failed to notice the previous appeals but who have it in their power to send some pecuniary assistance I would have much pleasure in passing it on to Mrs. Martin. She has been endeavouring to earn some money by taking a house and trying to let it off in furnished apartments. So far she has been unsuccessful, but a little more help now may tide her over the difficult period of waiting until she has formed a connexion. I am, Sirs, yours faithfully,

The Hawthorns, Chester-le-Street, Feb. 4th, 1901. H. LYON SMITH.

VACCINATION GRANTS.

DR. H. HODGSON of Blisworth writes to us to protest against the "advertising by medical men of their having received such an easily acquired thing as a vaccination grant." Dr. Hodgson must surely have forgotten that one of the most effective weapons in the hands of the anti-vaccinationists was the fact that sometimes this trivial operation had been followed by disastrous results owing to a want of due care and circumspection in its performance. The grants are given in recognition of vaccinations properly and carefully performed, and for this reason we have always been glad to record the fact of such grants being awarded, and we shall continue to do so with pleasure.

MEMORIAL TO THE LATE DR. ARCHIBALD HAMILTON JACOB.

THE following contributions to the memorial fund have been received or promised. Cheques and postal orders should be made payable to the honorary treasurers (Sir Charles A. Cameron, C.B., 51, Pembroke-road, Dublin, and Mr. L. H. Ormsby, 92, Merrion-square, Dublin), and crossed "Ulster Bank." The honorary secretary is Mr. George F. Blake, J.P., Registrar of the Royal College of Surgeons in Ireland:—

	£	s.	d.
Sir Thornley Stoker ...	10	10	0
Dr. Lombe Atthill... ...	10	10	0
Sir Christopher Nixon, President R.C.P.I. ...	5	5	0
Mr. Thomas Myles, President R.C.S.I.	5	5	0
Mr. L. Hepenstal Ormsby, Vice-President R.C.S.I.	5	5	0
Sir Charles A. Cameron	5	5	0
Mr. A. A. Tindall (London)	5	5	0
Mr. Albert O. Speedy...	5	5	0
Dr. Stewart Woodhouse	5	5	0
Mr. George F. Blake, J.P., Registrar R.C.S.I.	5	5	0
Sir John Banks, K.C.B.	5	5	0
Dr. D. B. Jacob	5	5	0
Dr. R. D. Purefoy ...	5	5	0
Dr. James Little	5	5	0
Sir Philip C. Smyly ...	5	0	0
Dr. Joseph Smyth (Naas)	3	3	0
Dr. Thos. H. Moorhead (Cootehill) ...	2	2	0
Mr. J. P. Garland ...	2	2	0
Sir George Duffey ...	2	2	0
Mr. H. G. Sherlock ...	2	2	0
Sir Francis R. Cruise...	2	2	0
Sir John Wm. Moore...	2	2	0
Sir Wm. Thomson ...	2	2	0
Sir Wm. Porter, Bart.	2	2	0
Dr. W. J. Martin ...	2	2	0
Mr. R. R. Leeper ...	2	2	0
Dr. E. P. Wright ...	2	2	0
Mr. R. L. Swan... ...	2	2	0
Dr. H. McN. Jones ...	2	2	0
Dr. Wallace Beatty ...	2	2	0
Mr. John Barton... ...	1	1	0
Dr. Richard J. Kinkead (Galway)	1	1	0
Mr. J. Goodwin Shea	1	1	0
Dr. R. T. Hearn	1	1	0
Dr. P. J. Macnamara	1	1	0
Rev. S. Chaplin	1	1	0
Mr. A. Meldon	1	1	0
Mr. H. Benson Goulding	1	1	0
Mr. J. Pim	1	1	0
Dr. R. Lane Joynt ...	1	1	0
Mr. G. M. P. Murray...	1	1	0
Dr. R. L. Heard	1	1	0
Dr. J. F. Pollock	1	1	0
Dr. A. Patton	1	1	0

ACROMEGALY IN THE NEGRO.

IN the *Maryland Medical Journal* for December, 1900, Dr. J. Hall Pleasants of Baltimore describes a case of acromegaly in a negro associated with a low grade of giantism. The individual was apparently a full-blooded negro, probably between 25 and 35 years old, and of a grade of intelligence corresponding to that of an imbecile of the higher type. He weighed 198 lb. and his height was six feet two inches, but his true height must have been at least an inch more than this when allowance was made for his stoop. The thyroid was apparently atrophied, no suggestion of the gland being made out on palpation. The enlargement of the hands was symmetrical in all directions. The left foot, which was slightly the longer of the two, measured 12½ inches in length by 12¾ inches in circumference around the ball of the foot. Radiographs of both hands and feet showed that the enlargement of the bones was most marked in the epiphyses, especially of the terminal phalanges, where there was marked "tufting." Dr. Pleasants has found three cases of acromegaly in the negro already recorded in medical literature.

"CLAIRVOYANCE" AND THE DEATH OF MR. FOXWELL.

ON Feb. 5th Mr. Braxton Hicks held an inquest upon the body of Mr. Percy Lintott Foxwell, which was found in the Thames at Thames Ditton on Jan. 31st. It will be remembered that the deceased left his home on Dec. 20th, 1900, and on the evening of that day a telegram was received by his wife saying that he would not be home to dinner. As next morning he had not returned she informed the police. The widow in her evidence said that on Jan. 5th, as no trace of the missing man had been obtained, she consulted a *clairvoyante*, who by means of crystallomancy told her that her husband had been drowned. She herself looked in the crystal and declared that she saw her husband's form and the

place where it was to be found. "I thought," she is reported as saying, "that it was near some waterworks. ..... I saw waterworks quite plainly and a sort of water tower. The *clairvoyante* said I should have news of my husband in 10 days, but this was wrong." Witness continued that as she got no news she consulted another *clairvoyant*—a man this time who came to her house. He said that her husband had met with foul play and offered to show her where the body lay. They went together to the Mole, which later was dragged. The *clairvoyant* also said that he had seen her husband walking with a woman and a man, that the man felled her husband, and that the two threw the body into the Mole. An open verdict was returned. There will be persons who think that this case proves the value of clairvoyance, but it is obvious that the mystic procedure served only to confuse investigation. Given a man who lives by the river, it is the most probable thing to suggest that after a lengthened disappearance his body should be found there. As for Mrs. Foxwell's evidence we should have been very surprised had she seen anything other than what she did. Her mind was naturally full of her husband and she saw, or thought she saw, his image. The *clairvoyante* had previously mentioned drowning and the daily press had alluded to the same possibility, while the Foxwells lived in a district surrounded by waterworks, so that these edifices naturally came before the mental eye. As for the suggestion of the male seer that some intrigue took place of which Mr. Foxwell was the victim this is a gratuitously cruel assumption.

A FINE FOR DYING.

To the Editors of THE LANCET.

SIRS,—I think the fact mentioned in the inclosed letter which I have received from the relative of a gentleman whom I advised to go to Caux cannot be too widely known. That when English people die abroad their friends should be "fined" in this manner is a great wrong. I have heard of similar cases at Territet and Pau. Some steps ought to be taken to protect our patients from such extortionate practices. I am, Sirs, yours faithfully,

Jan. 22nd, 1901. M.R.C.S., &c.

[INCLOSURE.]

DEAR DR. A.,—Having just returned from Switzerland, where my brother-in-law, Mr. Z., has been staying for the last two months, I think it well to draw your attention to the way I was treated by the officials at the —— Hotel, Caux, S. Montreux. As you are aware, Mr. Z. died at this hotel on the 12th inst., and on my leaving there on the 15th a charge of £40 compensation was made by the hotel. I strongly protested against this, but in the end had to pay, and was informed by the hotel officials that this was a fixed charge made in all cases where a death takes place at this hotel. Yours faithfully,

X. Y. Z.

"AND A BABBLED O' GREEN FIELDS."

THE Rev. D. R. Fotheringham has an interesting article in the February issue of *Knowledge* on Emendation of the Folio Text of Shakespeare, in which he gives the various renderings—good, bad, and otherwise—of the above oft-quoted phrase. He suggests a reading of the passage as follows: "I knew there was but one way (for his nose was as sharp as a pen) and a table of green fields." Emendations of Shakespeare's text have had from time to time to give way to the folio text. In spite of the Rev. D. R. Fotheringham's suggestion that Mrs. Quickly meant that Sir John Falstaff had only one road to go and that the road to the churchyard, ending amid the little mounds scattered over God's green acre, we prefer the more generally accepted rendering.

A QUESTION OF ETIQUETTE.

To the Editors of THE LANCET.

SIRS,—Please can you give me advice in the following case? Dr. A has been the medical attendant to patient C and family. Recently one member of the family has been ill but has called in Dr. B. Neither the patient nor Dr. B has informed Dr. A of this. What ought Dr. A to do in case he is called in to see any member of the family, and also as regards Dr. B? I am, Sirs, yours faithfully,

Feb. 4th, 1901. BEDS.

*** Dr. A can please himself entirely about continuing to attend the C family. A patient has the right to change his medical attendant when and how he likes. His way of doing so may be polite or impolite, but no question save that of courtesy between fellow-citizens can arise. Dr. B transgressed a familiar rule of medical etiquette if the particular member of C's family had previously been A's patient. And if Dr. A refuses further professional relations with him he will be justified, always assuming that Dr. B acted as "Beds" states. Whether he will be wise is for himself to judge, while all signs of ill-feeling between members of the medical profession are regrettable. At any rate, Dr. A will take care that he is completely informed as to the whole episode before he openly resents Dr. B's conduct.—ED. L.

G. P. asks if anyone could kindly inform him where he could hire slides (limelight) and letterpress for a lecture on the Passion Play at Oberammergau? He might apply to Messrs. Newton, Fleet-street, but possibly one of our readers can tell him exactly what he wants to know.

Mizpah.—1. The ingredients differ according to the purpose for which the solution is required. The Local Government Board disinfecting solution for cholera is as follows: Corrosive sublimate, ½ oz.; hydrochloric acid, 1 oz.; soluble aniline blue, 5 grains; water three gallons. This gives a solution of 1 in 1000. 2. For surgical purposes creolin is preferable. The other fluid mentioned should only be used for crude disinfecting purposes.

Qua Hat.—1. There can be no doubt that C's conduct is "covering." The matter should be laid before the General Medical Council. 2. Our correspondent might put the facts before the Local Government Board, but we think it unlikely that he will get a grant for work performed by his predecessor.

Amateur must hold his hand, and we think by his choice of pseudonym that he will be ready to do so. Applied mechanics are often of use in surgery, but it takes more than skill in carpentry to make an operating surgeon.

The Removal of Hæmorrhoids by Excision.—A communication upon this subject, bearing no address, date, or signature, and posted at Manchester, has reached us. We shall be glad to hear from the author.

H. K.—We recommend Gould's Medical Dictionary, published by Messrs. Baillière, Tindall, and Cox, 20 and 21, King William-street, Strand, W.C.

North Warwicks should consult his medical man upon the points which he refers to us. The apparent discrepancy will then probably disappear.

"*Formula No. 4. Directions for Use.*"—We have received a bottle so labeled, but no letter explaining why it was sent to us has reached us.

F.R.C.S.—THE LANCET, Sept. 4th, 1897, p. 609.

Student.—Yes.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 7th, 1901.

Date		Barometer reduced to Sea Level and 32° F	Direction of Wind.	Rainfall	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Feb.	1	29·74	W.	...	51	41	33	33	35	Overcast
,,	2	29·58	S.W.	...	53	43	35	37	38	Cloudy
,,	3	29 60	E.	...	53	39	36	36	36	Cloudy
,,	4	29·51	N.E.	...	47	38	30	31	31	Foggy
,,	5	29·31	N	0·27	44	37	31	33	34	Overcast
,,	6	29·84	N.E.	0·17	53	40	33	35	36	Overcast
,,	7	30·20	N.	...	53	39	33	33	35	Cloudy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

WEDNESDAY (13th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

THURSDAY (14th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

FRIDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

SATURDAY (16th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.)

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily

SOCIETIES.

MONDAY (11th).—MEDICAL SOCIETY OF LONDON.—8.30 P.M. Clinical Evening. Dr. C. E. Beevor: Two Cases of Paralysis of the Serratus Magnus and Lower Half of the Trapezius.—Mr. F. C. Wallis: Two Cases of Partial Paralysis of the Fore-arm and Hand (1) from Esmarch's Bandage, (2) from a Splint.—Mr. M. Sheild: (1) Case of Gastro-jejunostomy; (2) Case of Œsophagotomy for "Foreign Body" in a Child aged six years (3) Case of Enormous Chronic Abscess treated by a Novel Method.—Dr. W. Hunter: Case of Pernicious Anæmia after Serum Treatment.—Mr. S. Boyd: Case of Gastro-jejunostomy.—Dr. StClair Thomson: Two Cases to illustrate the desirability of Removing the Tonsils by Enucleation in Certain Instances.—Dr. J. L. Bunch: Case of Abdominal Swelling in a Child aged three years.

SOCIETY OF ARTS.—8 P.M. Mr. W. J. Pope: The Bearings of Geometry on the Chemistry of Fermentation. (Cantor Lecture.)

TUESDAY (12th).—PHARMACEUTICAL SOCIETY OF GREAT BRITAIN (17, Bloomsbury-square W.C.).—8 P.M. Prof. H. G. Greenish: The Percentage Ash of Various Crude Drugs and their Powders. (Communication from the Society's Pharmaceutical Research Laboratory.)

ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—Adjourned Discussion on Cases of Arsenical Beer Poisoning. Dr. Reynolds (Manchester) will show Illustrations and Dr. Dreschfeld, Dr. J. Bury, Dr. Delépine, Dr. D. Mann, Dr. N. Raw, Dr. Kelynack, and Sir Lauder Brunton will speak.

WEDNESDAY (13th).—HUNTERIAN SOCIETY (London Institution, Finsbury-circus).—8 P.M. Annual Meeting. 8.30 P.M. Mr. J. Poland: Hunterian Oration.

SOCIETY OF ARTS.—8 P.M. Mr. W. Thomson: Arsenic in Beer and Food.

THURSDAY (14th).—NEUROLOGICAL SOCIETY OF LONDON (11, Chandos-street, W.).—8.30 P.M. Annual General Meeting. Election of Officers. Dr. W. J. Mickle: Automatic Wandering. (Presidential Address.)

BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Specimens will be shown by Mr. F. Edge, Mr. C. Martin, and Dr. H. Macnaughton-Jones. Paper:—Mr. B. Jessett: The Surgical Treatment of Prolapsus Uteri. (President's Introductory Address.)

FRIDAY (15th).—EPIDEMIOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Paper:—Dr. A. Newsholme (Brighton): The Epidemiological Aspects of Isolation Hospitals.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN (Paddington-green Children's Hospital).—5 30 P.M. Cases will be shown by Mr. W. Cheyne, Mr. J. J. Clarke, Mr. A. Lawson, Mr. H. L. Lack, Dr. D. McKenzie, Dr. G. Carpenter, and Dr. L. Guthrie. Paper:—Dr. J. McCaw (Belfast): A Case of Tetanus Neonatorum Successfully Treated with Antitetanic Serum.

SOCIETY OF ANÆSTHETISTS (20, Hanover-square, W.).—8.30 P.M. Paper:—Dr. G. Eastes: The Conclusions of the Anæsthetists' Committee of the British Medical Association.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (11th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. F. Payne: Consultation. (Skin.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. Abraham: Skin Affections.

TUESDAY (12th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. W. Ewart: Consultation. (Medical).

WEDNESDAY (13th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. W. H. A. Jacobson: Consultation. (Surgical.)

LONDON THROAT HOSPITAL (204, Gt. Portland street, W.).—5 P.M. Mr. C. Weakes: Examination of the Ear and Nose. (Post-graduate Course.)

NORTH LONDON DISTRICT METROPOLITAN COUNTIES BRANCH BRITISH MEDICAL ASSOCIATION (Royal Free Hospital, Gray's Inn-road, W.C.).—4.15 P.M. District Committee. 4.30 P.M. The Staff of the Hospital will show some interesting Cases. Paper:—Dr. G. A. Heron: Tuberculin Treatment.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Green: Demonstration of Cases in the Wards.

THE SANITARY INSTITUTE, (Parkes Museum, Margaret-street, W.).—8 P.M. Sessional Meeting. Discussion on the State of our Streets (opened by Mr. T. Blashill).

THURSDAY (14th).—CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Dr. D. Grant: Treatment of Malignant and Non-malignant Tumours of the Pharynx and Larynx.

CHARING-CROSS HOSPITAL.—4 P.M. Dr. Abercrombie Medical Cases. (Post graduate Course.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—3 P.M. Dr. H. Low: Class. Roentgen Rays. 4 P.M. Mr. J. Hutchinson: Consultation (Surgical.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. S. Taylor: Physical Diagnosis.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Mr. Steward: Intussusception.

THE HOSPITAL FOR DISEASES OF THE SKIN (Stamford-street, Blackfriars).—3 P.M. Clinical Demonstration:—Dr. P. S. Abraham.

LONDON TEMPERANCE HOSPITAL.—2 P.M. Dr. S. Fenwick: Clinical and Pathological Demonstration to Senior Students.

ROYAL BRITISH NURSES' ASSOCIATION (10, Orchard-street, Oxford-street, W.).—5 30 P.M. Mrs. H. J. Tennant: Nurses and the Industrial Laws. (Sessional Lecture.)

FRIDAY (15th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. H. Tilley: Consultation. (Throat.)

ROYAL INSTITUTION OF GREAT BRITAIN.—9 P.M. The Right Rev. Monsignor G. Molloy: Electric Waves.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff It is urgently necessary that attention be given to this notice

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1900, which was completed with the issue of Dec. 29th, and the Title-page to the Volume were given in THE LANCET of Jan. 5th.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1900, bound in cloth, gilt lettered, price 18*s.*, carriage extra.

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The Hunterian Oration:

AN ADDRESS ON CRANIOLOGY.

Delivered in the Theatre of the Royal College of Surgeons of England on Feb. 14th, 1901,

BY N. C. MACNAMARA, F.R.C.S. ENG.,

CONSULTING SURGEON TO THE WESTMINSTER HOSPITAL AND TO THE ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.

[MR. MACNAMARA referred to the death of our beloved Queen and to the interest which she had always taken in the efforts made by the medical profession to alleviate human suffering. He then observed that in this time of universal mourning we were consoled by knowing that our King had, by his never-failing courtesy and attention to the numerous demands of his people, already gained their affection. His Majesty had on several occasions evinced his personal interest in the Royal College of Surgeons of England, and it was the sincere hope of that body that he might still find time to help on the beneficent work of the fund which he had established with the object of placing our metropolitan hospitals in a satisfactory financial position. Reference was then made to the loss which the College had sustained since the last oration was delivered in the death of Sir James Paget. Mr. Macnamara proceeded:]

GENTLEMEN,—We have assembled here to-day in order that we may commemorate the merits of John Hunter and such other persons whose labours have contributed to the extension of our knowledge in comparative anatomy, physiology, or surgery. Hunter's life in all its various aspects has been so frequently dwelt on in former orations delivered in this theatre that it is beyond my power to throw any fresh light on this subject. His fame is attributable to his having possessed an intense love of science, indomitable energy, and a self-reliant, manly character. If we turn to his portrait hanging on the walls of this theatre it would seem that at the time when this likeness was painted Hunter was engaged in the study of the craniology of man and anthropoid apes, for on the table before him there is an open volume and on its pages we see clearly drawn a human skull and the skull of a chimpanzee. Hunter is portrayed, pen in hand, in deep thought, having just turned away from the book he had been studying, and though his notes on comparative anatomy were unfortunately destroyed with his other manuscripts we can hardly doubt that craniology was a subject in which he was deeply interested or it would not have held so prominent a position in this famous picture. It would, therefore, seem that on an occasion such as the present we can do no higher honour to Hunter's memory and to that of some of the able men of science who have followed him than by endeavouring to give in as few words as possible a *résumé* of their labours, with especial reference to the subject of craniology and the light it is capable of throwing on the prehistoric inhabitants of western Europe and of the evolution of the race of men to which we belong. One of the most brilliant and original thinkers who has occupied the presidential chair of this College, Sir William Lawrence, in his ever-memorable lectures on the Natural History of Man delivered in this College in the year 1819, from his researches in comparative anatomy, foreshadowed the idea that man and apes were derived from common ancestors. Lawrence's opinions were received with a storm of adverse criticism. Mr. Abernethy, for instance, charged him with "propagating opinions detrimental to society and endeavouring to enforce them for the purpose of loosening those restraints on which the welfare of mankind depend." Time, however, has proved that Lawrence was right, and in the course of lectures delivered in this theatre in February, 1899, Professor Keith, from a careful analysis of the maximum number of anatomical characters common to man and apes, arrived at the conclusion that they are derived from an identical or a kindred stock. While admitting without reserve that man and apes are structurally almost identical, nevertheless, as pointed out by Professor Huxley in the year 1863, they differ very materially as regards the relative weight of their brains. The carcass of a full-grown gorilla is heavier than that of an average-sized European, but it is doubtful whether a healthy adult European's brain ever weighed less than 32 ounces or the brain of the heaviest gorilla ever exceeded 20 ounces in weight.[1] Although at the present time there is this marked relative difference between the weight of the brain and the form of the skulls of Europeans and apes this was not always the case, for the calvaria of the earliest discovered human beings were in form not very far removed from those of contemporary anthropoid apes. This fact leads us to inquire into the nature of the conditions which have led to the increased capacity of the human cranium and to the vast superiority of man's intellectual endowments over those of all the other primates. If we turn to Hunter's preparations in our museum[2] we find among them some remarkable specimens which he describes as "compressed," "unsymmetrical" human crania which he believed were the result of premature consolidation of one or more of the sutures of the skull.[3] Since Hunter's day various authorities have devoted much time to the subject of the abnormal closure of the cranial sutures in man: prominent among them are the names of the chief of England's craniologists, Dr. Thurnam, and Dr. Barnard Davis—the splendid collection of prehistoric and other skulls made by the latter gentleman are now in the possession of our College. From evidence of this nature we have come to learn that the size and form of the skull depends to a large extent on the growth of the bones of which it is formed along the lines of the various cranial sutures.

It is well known that the frontal bone, which forms the vault of the anterior part of the cranium in the young of man and apes, is divided by a suture, and so long as this line of growth, together with the coronal and other sutures by which the frontal is separated from surrounding bones, remains open, the fore part of the skull and with it the anterior fossæ which it encloses can expand. But if the frontal and the other anterior sutures of the cranium consolidate early in life the fore part of the skull cannot increase in capacity beyond the size it had reached in infancy. Professor Deneker[4] in his work on the embryology and development of anthropoid apes has shown that in consequence of the early closure of the anterior sutures of the skull of these animals the fore part of their brain does not increase beyond the size it had attained at the end of the first year of life, but in man these sutures do not consolidate until a much later period, so that the anterior lobes of his brain are enabled to, and actually do, become far more perfectly developed than the corresponding lobes among apes; men of the same bulk have four times as much superficial brain surface as anthropoid apes.[5]

Whatever other functions the anterior lobes of the brain perform, their cortical nerve elements in conjunction with those of the other lobes of the brain control, to a large extent, our higher intellectual faculties. If we study the collection of preparations of the brains of apes in our museum, it seems to me we shall arrive at a similar conclusion to that expressed by Professor Edinger, which is, that the gyri of the brain of man and of the anthropoid apes are similar in character, with the marked exception of those convolutions which enter into the formation of the frontal lobes. The superior and the middle gyri of these lobes in anthropoid apes are always much shorter than they are in

[1] Man's Place in Nature, by Professor T. Huxley, p. 103.
[2] College Catalogue, Nos. 135, 137, and 139.
[3] Professor Virchow who has given much attention to this subject lays down the following law: "In the too early ossification of a suture of the skull the development of the cranium is arrested in the diameter perpendicular to that centre."
[4] Archives de Zoologie Expérimentale et Générale, tome troisième, année 1885.
[5] Among anthropoid apes in consequence of the great size of their frontal sinuses and the roofs of the orbits rising more obliquely into the cranial cavity, the anterior and the inferior walls of the anterior fossæ of their skulls intrude upon and lessen the capacity of this space, and therefore of the anterior lobes of the brain which are contained in these fossæ. Virchow states that "of all parts of the ape's head it is the brain that grows least," even "the largest ape keeps its baby brain." Although we have not sufficient data to fix the absolute duration of the life of anthropoid apes, it is doubtful if they, as a rule, attain the age at which man arrives at his full growth. It is, however, certain that the largest apes are perfectly developed when man is still in his youth, and that the ape's brain has reached perfection before the period of shedding its teeth, while in man it then takes its real first step to perfection. The Cranial Affinities of Man and Apes, by Professor R. Virchow, p. 26. Also Journal of Anatomy and Physiology, New Series, vol. xiii., p. 275.

the brains of average Europeans, and what is of especial importance is, that in the brains of anthropoid apes the inferior frontal gyri only exist in a rudimentary condition of development; this deficiency is very marked with respect to that area of the left inferior gyrus which contains the nerve elements which control our faculty of articulate language. It seems probable that the rudimentary condition of this gyrus in apes is therefore the anatomical expression of the inferiority of these animals to man in intelligence; our intellectual development depending on our possessing the faculty of speech.[6] It may be, anthropoid apes having only rudimentary, if any, specialised nerve centre of speech, that the other parts of their anterior lobes have remained in a comparatively undeveloped condition; whereas the left inferior frontal lobe of man's brain having become highly specialised and with it his power of language, the other convolutions of his anterior lobes, which govern his intellectual faculties, have been stimulated to increased action, and in this way the characteristic expansion of the fore-brain has been evolved among all the more highly civilised races of the human family. But our contention is that the factors which govern the growth of the skull differ from those which develop the brain, and that the imperfect evolution of the frontal lobes among anthropoid apes is to a large extent due to the premature ossification of that part of the skull which encloses the fore-brain. However this may be, the possession of fully-developed anterior lobes of the brain, especially of its left inferior gyrus, is the distinctive character of the central nervous system of all those families of mankind who possess well-developed intellectual capacities. On the other hand, if we compare the skull of an Englishman with that of one of the natives of Australia we see what a wide difference there is between the development of their frontal regions, and also as to the nature of the sutures of many of their skulls.[7] We shall further discover from specimens in our museum that the inhabitants of western Europe in the later tertiary and early quaternary period, as regards the ossification and form, especially of the frontal region of their skulls, more closely resembled that of the chimpanzee than the race of men now inhabiting Europe.[8]

Since Hunter's and Lawrence's time considerable progress has been made in the science of geology and anthropology. Nevertheless, in our search for knowledge concerning the origin and development of pre-historic man in western Europe we are still hampered by the limited supply of his remains It could hardly have been otherwise considering the perishable nature of the human skeleton and the vast length of time, and the great geological changes which have occurred since man appeared in our part of the world. But we have additional evidence concerning the prehistoric inhabitants of this part of Europe, for they have left us some of their imperishable handiwork in the shape of flint and stone implements, which during the past century have been carefully studied in relation to the geological strata in which they were discovered, by Lord Avebury, Professor Boyd Dawkins, Professor Prestwich, Sir John Evans, the late Sir William Flower,[9] together with many other English and foreign anthropologists. From the form and workmanship of these stone implements we are now able to classify, and assign them to the various periods in which they were manufactured by the early inhabitants of our part of the world.

Up to within recent times it was held that no human beings existed on the earth before the quaternary geological epoch, but in the year 1867 the Abbé Burgeois exhibited a collection of chipped flint weapons which he had discovered in a previously undisturbed tertiary formation; it was not, however, until 1872 that these instruments were admitted to have been made by man or some other animal living previously to the commencement of the quaternary period. Precisely similar flint weapons have since been discovered in tertiary strata in various localities in Europe and in Asia. In the year 1894 Dr. Eugene Dubois found the upper part of a skull (calvaria) in close proximity to a femur and two molar teeth in a well-defined tertiary geological formation in the island of Java. Dr. Dubois was employed by the Dutch Government to examine and report on the fossil-bearing strata of Java, and while engaged on this work he discovered imbedded in a hard mass of tertiary tuffs the bones above referred to; he brought these fossils to Europe and submitted them for examination to the leading anatomists of this and other countries. They concurred in the opinion that the femur was a human bone belonging to a man of a very low type; "and demonstrating the fact that while rendering its possessor capable of the bipedal mode of locomotion he still retained some vestiges of adaptation to an arboreal existence."[10] There was a difference of opinion concerning the calvaria, for it was calculated that the capacity of this skull did not exceed 850 cubic centimetres, the capacity of the largest cranium of anthropoid apes being 600 cubic centimetres. Until the Java skull was found the earliest known human skulls had a cranial capacity of about 1220 cubic centimetres. After an exhaustive analysis of the anatomical characters of the Java calvaria as compared with the skulls of man and apes Professor Schwalbe has arrived at the conclusion that the Java skull, taking its capacity and form into consideration, "is on the border-line between that of man and anthropoid apes"; it is more closely allied to the skulls of the Neanderthal group of men than it is to the crania of the higher apes, but it is much nearer in form to the skulls of the chimpanzee than it is to the cranium of the average adult European of the present day. Nevertheless, from a study of the impressions of the convolutions of the brain on the interior of this calvaria it is shown that the inferior frontal convolutions are well marked and approach in form those of man; and although the superficies of this convolution is less than half that of the men of the present day it is double that of the largest brain of any known anthropoid ape.[11] This fact suggests that the Java man possessed in some slight degree the faculty of speech and that his intellectual capacity was higher than that of any of the anthropoid apes. The post-orbital index or narrowing of the Java skull is 19·3, as compared with the average of living Europeans, which is 12. In this measurement the Java skull comes nearer to the Neanderthal group than to that of anthropoid apes.

[6] The Anatomy of the Central Nervous System of Man, Professor Ludwig Edinger, M.D., translated from the fifth German edition by Professor W. S. Hall, 1899, p. 194. Professor D. J. Cunningham states that "one of the most remarkable characters of the cerebrum of the chimpanzee and orang is the total absence of the frontal and orbital opercula," or the pars triangularis which contains Broca's nerve-centre for articulate language. See Contributions to the Surface Anatomy of the Cerebral Hemisphere, by Professor D. J. Cunningham, Dublin, 1892, p. 110.

[7] Professor Huxley held that the organisation of the human brain had more to do with man's intellectual superiority than either its weight or size, and there can be no question that men having small heads are by no means necessarily wanting in mental capacity. But a well-developed frontal region is a characteristic feature of all the more highly civilised communities of the world, and among such people low intellectual endowments or even idiocy is found to be comparatively frequent in those with abnormally small frontal lobes. We agree fully with Professor Huxley that among all the known races of human beings the brain and its including case, the skull, grow together, and the former does not exercise an absolutely predominating influence over the development of the latter. But it is certain that if the anterior part of the skull becomes a shut box early in life it must control the subsequent size and development of the brain which it contains. Professor Welcker, who studied this subject in a thorough Teutonic spirit, arrived at the conclusion that in European races the frontal suture remains open up to the adult period of life in one out of nine persons. Among African races it is not found open at the adult period of life in more than one in 150 persons; and among the aborigines of Australia no adult skull has yet been observed with an open frontal suture. The well-known French anatomist, Gratiolet, states as a result of his researches that "not only the growth of the brain ceases sooner in those races in which the sutures close early, but also that there is a difference between the higher and lower races as to the order in which the sutures are closed normally. In the latter the anterior sutures consolidate before the posterior, and in the higher races it is the reverse, the posterior sutures close earlier than the anterior." M. Gratiolet bases an argument for the greater perfectibility of the higher races upon these facts. On the other hand, Professor L. Edinger is disposed to agree with Professor Peris that not a few men of pre-eminent intellectual power have in early life been affected with slight hydrocephalus which, having abnormally expanded their skulls, has then receded. The brain of such young people has been able to attain a greater capacity than it would have acquired had there been no hydrocephalus to expand the skull-cap. The Anatomy of the Central Nervous System of Man by L. Edinger, M.D.; translated from the fifth German edition by Professor W. S. Hall.

[8] The Origin and Character of the British People, by N. C. Macnamara, p. 25.

[9] Sir William Henry Flower, K.C.B., F.R.S., died on July 1st, 1899; he was for some years the Conservator of the Museum of the Royal College of Surgeons of England, and the Council of the College unanimously passed the following resolution at their meeting on July 13th, 1899: "The Council hereby express their deep regret at the death of Sir William Henry Flower, K.C.B., F.R.S., and their sincere sympathy with Lady Flower and the members of his family. The Council remember how much Sir William Flower, while conservator, did to advance the utility and reputation of the museum by the skilful discharge of his duties and by the eminent position which he won for himself among men of science, and they hereby record their grateful appreciation of his services to the College."

[10] The Journal of Anatomy and Physiology, vol. xxxiii. New series, vol. xiii., p. 273.

[11] The Brain-cast of Pithecanthropus Erectus, by Eug. Dubois, Journal of Anatomy and Physiology, New Series, vol. xiii.

In the employing of skulls, which we believe to be the most reliable test of human races, we classify them under three heads according to the measurements of their cranial indices. In other words, the measurement of the greatest breadth of the cranium, expressed in percentage of its greatest length, is our guide as to the race to which an individual belongs from a craniological point of view. When the cranial index rises above 80 the head is called "brachycephalic," a broad head; when it falls below 75 the term "dolichocephalic" or long head is applied to it. Indices between 75 and 80 are characterised as "mesocephalic," intermediate heads.[12]

We have in our museum casts of two crania, and other bones, forming part of human skeletons which were found resting on a ridge of calcareous rock overlooking the river Orneau in the commune of Spy, Belgium. These remains were unearthed with great care and there is every reason to believe that they were originally deposited where they were discovered, being covered over with four well-defined beds of débris and clay, in which were found the bones of the rhinoceros and the mammoth, also flint weapons of the Mousterian epoch.[13] One of these skulls has marked palæolithic[14] characters, its brow ridges, like those of the higher apes and the Java skull, are prominent and the forehead indicates the low type of human being of which this cranium formed a part. Its form, like that of all the other human inhabitants of Europe as yet discovered in the early geological strata of the quarternary (pre-glacial or inter-glacial) period, is of the long type, its sutures are simple and for the chief part are consolidated. We have another cast, presented to our museum by Professor Huxley, one of our most talented and earnest workers in the science of anthropology, taken from the Neanderthal cranium. This cranium was found with other portions of a human skeleton in a limestone cave near Dusseldorf. This cave was raised some 60 feet above the existing bed of the river Dussel and its floor was covered to a depth of five feet by fluviatile deposits beneath which these human remains were discovered. We have in our collection a skull of the characteristic palæolithic type, presented to the College by one of our former Presidents whose memory is treasured by all who knew him, Professor George Busk; it was found in a layer of brecciated talus under the north front of the Rock of Gibraltar. We have also a cast of the calvaria of one of this race found in county Sligo. Another skull of the same type was discovered at Bury St. Edmunds, with the remains of extinct animals and Mousterian flint weapons.[15]

The anterior surface of the lower jaw among the existing races of Europe projects to form the chin. Among apes the reverse is the case, for the anterior surface of their mandibles recede. The Marlarnaud and the Naulette mandibles, of which we have casts, are evidently those of human beings; they were found in geological formations (which also contained the bones of extinct species of animals and palæolithic flint weapons). These bones are distinctly ape-like in character, having receding anterior surfaces, and also the sockets of all the molars are equal in size. The bones of the legs of these pre-glacial or intra-glacial inhabitants of Europe are of ape-like form, and together with the bones of their arms prove that they were a short powerful race of beings whose average stature did not exceed five feet. They are known as the Neanderthal group of men.

When the glaciers which had extended over the greater part of Europe moved northward the reindeer passed away with them from our part of the continent. These animals, which could easily be captured by man, had roamed in vast herds over the surface of the country and had probably afforded the human inhabitants of that period living in western Europe an ample supply of food. The climate of our part of the world at the termination of the glacial period became such as we now experience. Britain was separated from France by sea, and fine rivers, containing numerous fish, filled the valleys of our land; the red deer, wild horse, and various fleet-footed animals abounded in the splendid forests which overspread the country. But these animals and the fish of our lakes and rivers were not easily captured, and the human inhabitants of western Europe were therefore compelled to exert their intellectual capacities to an extent not heretofore necessary in order to supply themselves with food and with the skins of animals for clothing. Man was able to overcome the difficulties he had to face, possessing an innate power by means of which (as already explained) his brain was able to develop and so meet the increased demand made upon it in the struggle for existence. That such was the case we judge from the discovery in geological formations of the post-glacial period of the skulls of men having the same physical type as those of the strictly palæolithic epoch of western Europe, but with increased brain capacity. These post-glacial human skulls indicate, in my opinion, a gradual transition in form from the ape-like characters of the previous period to a higher standard and distinctly greater brain capacity in the frontal region; this most important question, however, requires further study. With this improvement in the form of the human skull, the flint, stone, bone, and horn instruments made by the post-glacial inhabitants of western Europe become more highly finished, indicating the possession of increasing intellectual power on the part of those who made them.

The Engis skull, of which we have a cast, presented to this College by Sir Charles Lyell, is a well-known example of a human cranium of the early neolithic[16] or post-glacial period. Huxley, in his description of this skull, observes: "It takes us, at least, to the further side of the biological limit which separates the present geological epoch from that which preceded it," that is, from palæolithic times.[17] The Borris and Egisheim skulls probably belong to this period, their characters being similar to those of the Tilbury cranium described by Sir Richard Owen, of which we have casts in our museum. These and various other skulls found in geological formations of the time referred to are all of the same type and lead us to believe that the inhabitants of Europe consisted, in the early neolithic period, of only one race, the descendants of the human beings who inhabited our part of the world during the previous or early palæolithic epoch. They had long (dolichocephalic) skulls, with slightly projecting supra-orbital ridges, well-formed noses, and a fairly-developed frontal region as compared with the far more ancient Java and Neanderthal crania. Their lower jaws and the bones of their legs were less simian in character than those of their remote progenitors; they were a small race of beings. We find no metal weapons or instruments with their remains and we therefore conclude that they were ignorant of the use either of bronze or of iron, nor do they seem to have possessed domestic animals or to have had any knowledge of agriculture. This race of primitive inhabitants of western Europe are best known as the Iberians, and we may conveniently employ this term so long as it is understood to designate the Africo-European stock who were, so far as we know, the only human inhabitants of Europe in the later palæolithic times. It should be clearly understood that no *bonâ-fide* human remains belonging to the early palæolithic period have hitherto been discovered in western Europe which were not of the same type as those above described.

As we pass from the early to the mid-neolithic epoch, we

[12] Assuming the length of the cranium to be 100 the width is expressed as a fraction of it, and is known in the living subject as being the cephalic, and in the bare skull as the cranial index. For instance, if the greatest breadth of a skull is 15·2 centimetres and its length is 19 millimetres we multiply the breadth in this case 15·2 by 100 and divide the product by its length, 19 centimetres, which gives us the cephalic index 80.

[13] The most superficial layer was 9·5 metres thick and was formed by débris which had fallen from the rock above. The second layer was three metres thick and formed of yellow argillaceous tuffs. The third layer was six metres thick, consisting of red clay in which were numerous Mousterian flints and the tusk of a mammoth. The fourth was yellow calcareous clay, immediately beneath which the human remains with bones of extinct animals were found.

[14] The term "palæolithic" is employed to geological formations distinguished by containing the rudest shapes of human stone implements associated with the remains of mammals, some of which are entirely extinct while others have disappeared from the districts where their remains have been found. These deposits may be classed under the heads of alluvium, brick-earth, cavern-beds, calcareous tufas, and loess. Class-book of Geology, Sir A. Geikie, p. 361.

[15] We possess accurate drawings and a description of this cranium. There can be no question that this was a genuine palæolithic skull and demonstrated the presence in the county of Suffolk of this race of human beings when England was still connected by land with France.

[16] The term "neolithic" is used to signify that period in which the stone, bone, and horn implements made by man indicate a considerable advance in the arts of life beyond those discovered in the previous palæolithic epoch. In the neolithic period the remains of the mammoth, rhinoceros, and other prevalent extinct forms of the palæolithic series had almost, if not completely, disappeared from western Europe. The deposits in which neolithic remains are found consist of river gravels, cave floors, peat bogs, raised beaches, &c., &c.

[17] Man's Place in Nature, by Professor Huxley, p. 120. For a description of the Borris skull see S. Laing and Thomas H. Huxley's "Prehistoric Remains of Caithness."

come upon the remains of a race of men who, as regards their physical character and state of civilisation, essentially differ from the people above referred to. The stone implements found with their skeletons are beautifully formed, many of them being highly polished and having sharp cutting edges. A few of the purest bronze axe-heads have been discovered with these remains, and also the bones of domestic animals belonging to species indigenous to Asia but foreign to the palæolithic fauna of Europe. Lastly, we have evidence that these people were acquainted with agriculture and with the manufacture of sun-dried pottery. They paid great respect to their dead chiefs, burying their bodies in natural caves or in tombs formed of huge flagstones placed edgeways side by side with similar stones laid on the upright ones to form the roof of the building. These structures, the well-known long dolmens, have been found, built on precisely the same plan in Ireland, England, the greater part of Europe,[18] the west of Asia, India, Arabia, and northern Africa. They were not only sepulchres for the dead but many of them also contained an altar, a place of mourning, and of offering, where intercession was made to the spirits of departed chiefs by their relations and tribesmen. The Rodmarton long dolmen or temple tomb (near Cirencester) affords us a good example of one of these structures; it is 180 feet in length and 70 feet broad. We have in our museum a fine human skull which was found in this dolmen, with some well-polished stone implements. If we compare the skull with that of palæolithic man or with the skulls of the early neolithic human inhabitants of western Europe we are immediately struck by the marked difference that exists between them and the Rodmarton skull. Dr. Thurman's unique collection of crania may be seen in the Anatomical Museum, Cambridge; these crania for the most part were unearthed by himself from various English long dolmens and barrows, and they resemble in form, although they are of a higher type than, the skulls found in the caves of Cro-Magnon and Mentone; they are identical in character with skulls found in the long dolmens of France and other countries of Europe. The cranial index, capacity, and other features of the bones of these skulls lead us to assign them all to one and the same race, of which the Cro-Magnon are probably some of the very earliest specimens as yet discovered in western Europe. The three Cro-Magnon and three Mentone skeletons were those of people some six feet four inches and upwards in stature, so that a race of giants in far distant times was no myth. Their cranial capacity was above that of average Europeans of the present day. From their physical conformation and from the remains of the animals found buried with them, which are of Asiatic species, and from other evidence, we are led to the conclusion that the Cro-Magnon race represent the advance guard of the proto-Aryan human family, of which the Rodmarton[19] and many other long dolmen skulls show a more advanced type. These people in far distant ages migrated from the east into western Europe and from thence spread into our islands; southwards they passed into India, Persia and Arabia, Asia Minor and northern Africa. Over this vast area and far away in eastern Asia we find their remains with flint and stone implements of the early neolithic type, buried in long dolmens or barrows. The roots of many of the words used by this ancient people exist in most of the languages now spoken in Europe, and their religious sentiments, myths, and above all their racial mental and physical characters, as portrayed in the Rig-Veda and on the ancient monuments of Egypt, are pronounced features in the existing Teutonic and Anglo-Saxon people. From the form of the crania found in many of these long dolmens we know that this tall, fair, handsome, long-skulled race intermarried with the pre-existing short dark Ibèrian inhabitants of Europe. The fair tall race probably did not at any time, unless in the north of Europe, form a large proportion of the population; they were a dominating, fighting, and priestly caste who compelled the primitive small, dark (Iberian) inhabitants of western Europe to work as their slaves.

During the neolithic era, while the descendants of the proto-Aryan stock were slowly feeling their way from the East along the valley of the Danube into Europe, a very different race was passing from Northern Asia into the Baltic provinces. These people formed settlements on the islands of Denmark and westward as far as the north of Ireland. They were the first of the broad-skulled races of the human family who had entered Europe. Their skulls were brachycephalic in form with broad faces and noses, the latter being deeply concave at the base. Their remains are found in the islands of Denmark, especially that of Möen, also in Yorkshire and county Antrim, in which localities their descendants may still be recognised by their physical characters. These people belonged to the stone age of Europe, and by comparing their skulls with those of the Rodmarton or Cro-Magnon crania we see the great difference in form of the prehistoric long and the broad-headed races of men. Until the close of the neolithic epoch there were, therefore, three pure races who formed the sole human inhabitants of Europe, with the exception of those who were the outcome of the intermarriage of the people of these three races with one another.

Passing from the neolithic to the succeeding bronze age we find that Europe, including our islands, was overrun by a small, olive-coloured, broad-skulled people having characteristic Mongolian features. These were the lake-dwellers of Switzerland and other parts of Europe. They were traders in bronze, and probably, as Professor G. Mortillet and other authorities hold, they gradually replaced stone, horn, and bone with bronze instruments and weapons, effecting in this way a great revolution in the social and industrial habits of the pre-existing inhabitants of western Europe. In these far distant times deep mining operations were out of the question. Superficial copper ores were abundant in most parts of Europe and Asia, but alluvial tin was extremely scarce on our continent, and it is still only found in large quantities in south-eastern Asia. Cornwall, the Scilly islands, the south of Ireland, and some few other places also contained superficial ores of tin. It seems probable that the Mongolians inhabiting the highlands of south-eastern Tibet long before the commencement of the bronze age in Europe spread into Burma, the Malay Peninsula, and Cochin China, and there acquired the art of mixing copper and tin in such proportions as to form bronze, the weapons and instruments which they manufactured of this metal being a ready and profitable source of barter in Europe.[20] Together with the broad skulls and other remains of these people we find in the débris of the lake dwellings numerous ornaments made of jade, nephrite, and chloromelanite, minerals found in large quantities in south-eastern Asia but not in Europe; and, lastly, vases on which are depicted people in oriental costume and instruments used only by the south-eastern Tibetans have been discovered in connexion with the remains of the lake-dwellers and the round or oval barrows of Europe. These people, as a rule, cremated the bodies of their dead, and numerous cinerary urns containing their remains are found scattered over the Wiltshire and other ranges of hills in the south of England. Some of their skeletons, however, have been discovered in the round barrows which are so numerous in many parts of England, Ireland, and throughout Europe and Asia. With these remains bronze instruments have been found indicating, like the stone implements of palæolithic man, various stages of excellency in workmanship. One of the finest skulls in our museum was taken from a round barrow at Codford, Wilts. The form of this brachycephalic skull, together with its nasal bones and orbits, are characteristic of the southern Mongolian race, well known to us as the Gurkhas, and Burmese of our Indian empire; a lazy, bright, rollicking, fighting people, intensely superstitious and home-loving—"the Irish of the East" as they have been aptly called. In the course of many centuries the Mongolian people of western Europe have become absorbed into the pre-existing Ibero-Aryan population and a cross-breed has resulted, and from this stock the ancient British people of our islands were derived. Their skulls are mesocephalic (a combination of the long and broad skull) and are amply represented in our museum, the cephalic indices being about 78.[21] Subsequently to the bronze age the ancient Britons were well-nigh exterminated in England by Teutonic races who invaded our country from the north of Europe, the Anglo-Saxons taking the place of the pre-existing ancient British population of England

[18] The construction of these dolmens wherever met with is so similar that we conclude they were the work of one race, or at least of one special confederacy of races.

[19] History of Ancient Wiltshire, by Sir H. C. Hoare, vol. i., Plate XVII., p. 164.

[20] These people without doubt made bronze weapons both in the south of England and of Ireland, for clay moulds have been found there in which weapons of the early bronze period in Europe were cast.

[21] The Mongolian cephalic index is from 80 upwards and that of the Ibero-Aryan is 75 and below that figure.

and Scotland. Nevertheless, in some districts of England such as North Bedfordshire, a number of the descendants of the ancient British stock continue to flourish up to the present day. as also in the greater part of South Wales much of Cornwall, aud the south and west of Ireland, the upper classes in Ireland being clearly derived from the ancient Aryan stock who passed from Gallia into that country during the neolithic period.

We possess the measurements of the heads of some 25,000,000 of the present inhabitants of Europe and the United States of America. From these measurements we learn that a large proportion of the people now dwelling in the countries bordering on the Mediterranean Sea are a short, brunette, long-skulled race, descended, we believe, from those who, from the form of their skulls and other physical characters, occupied that part of Europe and the north of Africa in far distant ages—the Iberian race. Scandinavia and North Germany are inhabited by a tall, fair, long-skulled people derived from the proto-Aryan races who settled in that part of our continent in the neolithic epoch. A vast triangle having its base in eastern Russia and its apex on the Atlantic in south-western France is inhabited by a broad-skulled people derived from Mongoloid or Turanian ancestors. We do not for a moment affirm that these races, as such, have remained pure, far from it, but the results of the measurements of the heads of a great number of the existing inhabitants of Europe point to the conclusions above indicated; and this idea in confirmed by the indices of the splendid collection of crania which occupy so large a space in the museum of this College—a collection which was commenced by John Hunter and upon which a great amount of time and labour has been spent in describing and classifying the skulls which it contains; a work which in my opinion should be completed up to the end of the past century.

The characteristic physical type of palæolithic man may be still recognised among the inhabitants of western Europe, although their skulls have grown more capacious, especially in the frontal region. This change in the form of the cranium marks a corresponding advance in the capacity and organisation of the brain and consequently of the intellectual ability of man: it is in truth evidence of his inherent power to overcome the demand made on his mental capacity in order to cope successfully with his ever-increasing struggle for existence, consequent on the growth in number of his fellow-creatures and the more complicated social conditions of his surroundings. Doubtless the form of skull of a large proportion of the inhabitants of our island indicates a cross-breed formed by the intermarriage of the long and broad-skulled families of man who in distant ages met and intermarried in western Europe, thereby improving the stock of their descendants. Races of men such as the natives of Australia who have remained in an unchanged environment and without intermarriage with other people have made but little progress in their intellectual capacity, the form of their skulls continuing of the same type as those possessed by the palæolithic inhabitants of Europe.

The same causes to which we have referred, acting for long periods of time on people of the same race, has led not only to the hereditary transmission of their physical characters, such as those existing respectively among the northern, central, and southern inhabitants of Europe, but have also developed specialised areas of nerve structure in their brains, by means of which they have come to think, feel, and reason alike. In this way we are able to comprehend the source and the meaning of large bodies of men belonging to the same race being frequently moved to take common action on matters affecting the well-being of their race; they possess, in fact, like innate sentiments although separated from one another by great distances and living under diverse climates and environment. Their emotions and ideals harmonise because their progenitors existed for many ages under similar external conditions and consequently developed like specialised nerve-centres, which have been transmitted together with their physical characters to their successors and become crystallised in their laws and reflected in their conceptions of religion as well as in their social institutions.[22]

In illustration of our meaning we may refer to those revolting pages of history during which Belgium and the Netherlands passed under the dominion of Spain; the Iberian dominating for the time being over a thoroughly Teutonic race. Or we may contrast the existing condition of the Iberian population of South America with the Teutonic Anglo-Saxon inhabitants of the United States or between the latter and the negro population of America.

We have a chart here which shows the result of the recent general election held in this country; the question at issue was one in which the whole of the people in Great Britain were deeply interested. It is remarkable what a large proportion of the inhabitants of England and of Scotland, mainly of Anglo-Saxon origin, voted together on this subject; whereas a contrary opinion regarding this same question was held by the greater proportion of the people of Ireland, and to a large extent by the Welsh, most of whom are derived from Ibero-Mongolian ancestors. It is difficult to account for the diversity in the sentiments of the people above referred to unless we consider it due to their racial mental qualities.[23] Environment has doubtless played an important part in the evolution of these people, but their inherited racial character has had more to do with the position which the Anglo-Saxon race has gained in the world than the mineral wealth, climate, or protection afforded us by our seagirt coast.

The environment under which even a few generations of men exist would seem capable of influencing the structure of their central nervous system, as illustrated by comparing the mental qualities of our rural and urban population. The conditions under which the city-bred person, child and man, lives engender in the course of a few generations an unstable state of nerve structure, resulting in an excitable character, which if carried beyond a certain point leads to unsoundness of mind and may account for the increasing number of lunatics in this and the other large cities of Europe. General Sir Redvers Buller again, in speaking of the soldiers under his command in South Africa, refers to the fact that our city-born men have imperfect sight compared with men reared in the open plains of the Transvaal, thus affording us another example of the effects of environment on the race.[24] These are a few of the many interesting and important subjects which arise in connexion with the study of anthropology, including craniology; and the contents of our museum and library offer unrivalled opportunities to the student seeking for knowledge in those branches of science.

In conclusion, as already stated, much of Hunter's reputation was founded on the result of his labours in those branches of science which tend to elucidate man's nature; and during the past century a succession of English surgeons have carried on the work commenced by our great master, enriching our museum and endeavouring to make this College, not only an examining and licensing body, but, what it certainly should be, an Imperial Institution for the cultivation and diffusion of those departments of knowledge which bear on the art and science of surgery. The ideas entertained by John Hunter's immediate successors on this subject were ably stated by Sir William Lawrence in his lectures already referred to. He observes that "our own individual credit, and the dignity, honour, and reputation of our body, which we are bound to maintain, demand that surgeons should not be behind any other class in the possession either of the cultivation of branches of knowledge directly connected with surgery or in any of the collateral pursuits less immediately attached to it. It is only in reference to such views and objects that the Hunterian collection could have been accepted or can be of any use to this College." Hunter would, if he had still been with us, have thrown all his indomitable energies into the successful working of such an institution, and amidst the turmoil, strife, and competition going on around him would,

[22] The Origin and Character of the British People, by N. C. Macnamara, p. 192. See also the Westminster Review, December, 1900, p. 634.

[23] This idea is confirmed by the result of the elections that have lately taken place in Canada and the United States of America. The younger branch of our Anglo-Saxon race, forming as they do by far the larger proportion of the inhabitants of these vast and flourishing dominions, had to solve a similar question to that placed before the people of Great Britain, and they have responded by a vast majority to this call on precisely the same lines as those followed by Englishmen, moved, we believe, by common racial inherent sentiments.

[24] Sir Redvers Buller in one of his speeches is reported to have stated that: "In the first instance many of our men are city born, and England is not a very large country. We went out to a region where the principal number of our enemies were born in a very open country, a very large country, and it is not untrue to say that practically the vision, the ordinary sight, of our enemy was two miles at least further than the average sight of the English who were fighting against them. That is a matter of actual fact. An ordinary Dutchman or African can see a man coming towards him two miles before the man approaching can detect him."

as we see him in this picture, have been engaged in the earnest, accurate, patient study of nature. It remains for our younger members to emulate the example set them by John Hunter and by such service to secure for themselves lasting satisfaction, and beyond that add to the real dignity and utility of their College and their profession.

Three Lectures
ON
THE SURGERY OF PREGNANCY AND LABOUR COMPLICATED WITH TUMOURS.

Delivered at the Medical Graduates' College and Polyclinic on Jan. 11th, 18th, and 25th, 1901,

BY J. BLAND-SUTTON, F.R.C.S. ENG.,
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LECTURE II.[1]

Delivered on Jan. 18th.

WHEN PREGNANCY AND FIBROIDS CO-EXIST.

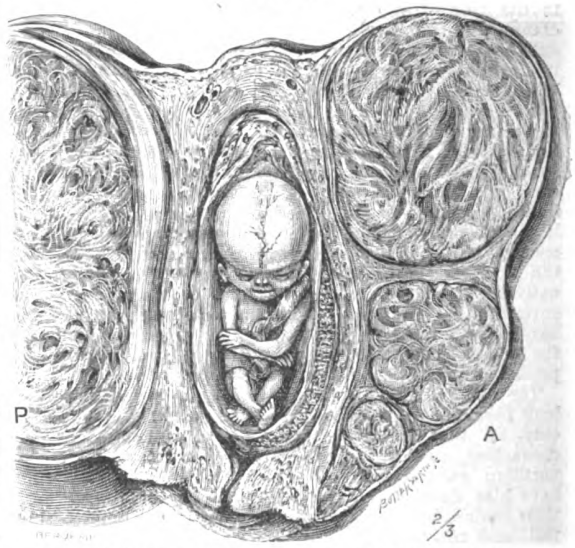
GENTLEMEN,—My object in this lecture is to set forth the perils which beset a woman when with her uterus occupied by fibroids she is so unfortunate as to conceive. This is a matter which has not received adequate consideration from the standpoint of modern surgery, and although many cases of this unlucky combination have been recorded no serious attempt has been made to deal with it in a comprehensive manner and in the light of the recent extraordinary advances in the surgery of the uterus. It will be useful to indicate the danger attending pregnancy, travail, and the puerperium complicated by uterine fibroids by some actual records.

CASE 1.—In 1897 I saw in consultation a woman, 40 years of age, who had been married 14 years. Ten days before I saw her the patient had been delivered of a child at term. Coincidently with the expulsion of the placenta an oval body, in shape like a fœtal head, presented at the mouth of the womb; this was at first regarded as the head of a twin and efforts were made to draw it forth, but careful examination revealed some nodular outgrowths on the uterus and no further attempts were made to extract this mass. When I saw the patient there was no difficulty as to the nature of the condition because a large submucous and septic fibroid protruded from the uterus into the vagina. The woman died three days later, being the thirteenth day after delivery. No operation could be entertained, the patient being too ill.

The practitioners in this instance were not the first to be puzzled by a large submucous fibroid in process of extrusion in a parturient woman. Yeld recorded a case[2] in which a woman, the mother of nine children, was delivered of a hydrocephalic child which had been dead for three days. A sessile tumour mistaken for the placenta was removed with the help of a blunt hook and three medical men. The woman died from shock two hours later. The tumour was nine inches in circumference and weighed four and a half pounds. Yeld ends his account of this dreadful case with the observation that "one similar to which has not, I believe, been recorded in the annals of midwifery practice." Even practitioners well experienced in midwifery, theoretical as well as practical, are occasionally puzzled by these complicated pregnancies, and a case recorded by such a well-qualified observer as Dr. F. H. Champneys may be used to illustrate this point. In 1877 he was called by the resident midwifery assistant at St. Bartholomew's Hospital to a woman, 25 years of age. The assistant, Dr. Maberley, recognised the case to be one of labour complicated with a fibroid and he determined to dilate the mouth of the womb and attempt delivery, but this being impracticable and thinking that craniotomy or perhaps Cæsarean section might be required he sent for Dr. Champneys who was acting for the physician accoucheurs. Dr. Champneys could not at first satisfy himself whether he had to deal with an extra- as well as an intra-uterine twin, an ovarian tumour, or a fibroid. He succeeded in pushing the tumour out of the pelvis and as it could then be felt above the pubes he punctured it through the hypogastrium with a trocar; as no fluid issued Dr. Champneys decided that it was a fibroid. Chloroform being administered a still-born child was, after some difficulty and "the expenditure of unusual force," extracted. This happened on Jan. 10th. A few days later the tumour was septic and sloughing and the patient continued so ill that she was conveyed into St. Bartholomew's Hospital. On Feb. 19th, exactly five weeks after her terrible delivery, a sloughing fibroid escaped from the uterus. She now began to improve and left the hospital eight weeks after delivery. This case is recorded in the St. Bartholomew's Hospital Reports, 1877. Dr. Champneys also took pains to collect from the current literature of that period quite a large number of records which show that fibroids often complicate labour *and frequently cause death.*

A comprehensive study of the cases in which fibroids complicate pregnancy indicates quite clearly that the life of the woman is in jeopardy not only so long as the fœtus remains within the uterus but also when it is expelled, whether this occurs prematurely or at the full time. The dangers may be set down in the following order. 1. The presence of the tumour not only leads to impaction but tends to produce abortion. In this event the mother sometimes dies from hæmorrhage. 2. A submucous fibroid may become septic and slough. More rarely a submucous fibroid may be driven out before the presenting part; more frequently it is extruded about five or six weeks subsequently to the delivery of the child. 3. A submucous fibroid may become œdematous and when the uterus empties itself the tumour may inflame and lead to peritonitis or the formation of extremely vascular adhesions. 4. Occasionally a pedunculated subserous fibroid possesses such a long pedicle that it will become incarcerated in the pelvis and simulate an ovarian tumour. This condition is fortunately rare. It will be an advantage to illustrate some of these conditions by the details of actual cases. An early (if not the earliest) sign to lead a pregnant woman with a fibroid in the uterus to seek relief is pain. This is in the majority of cases due to impaction.

FIG. 3.



A gravid uterus, with fibroids, in sagittal section. At the beginning of the third month impaction occurred; this was relieved, and as the uterus with its tumours was too long to lie in its natural position axial rotation occurred. The antero-posterior length of the distorted organ was 20 centimetres. Only a portion of the large tumour is shown in the figure. A, Anterior aspect of the uterus. P, Posterior aspect of the uterus.

CASE 2.—A woman, 30 years of age, married in October, 1897, and after missing three menstrual periods was seized with severe pain in the pelvis and retention of urine. Dr. Mills found a mass in the pelvis which he regarded as a

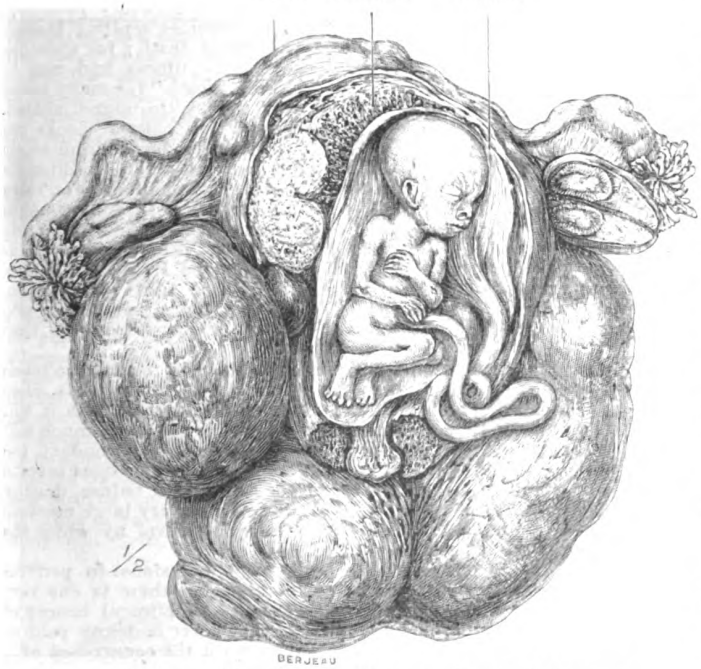
[1] Lecture I. was published in THE LANCET of Feb. 9th, p. 382.
[2] Brit. Med. Jour., 1871, vol. i., p. 586.

retroverted gravid uterus. With the aid of an anæsthetic he succeeded in pushing the mass out of the pelvis but found that a "swelling" had appeared in each iliac fossa. These "swellings" were very tender and the patient complained of great pain. It was clear that either a fibroid of the uterus or an ovarian tumour was complicating pregnancy. Prompt measures were taken and next morning I performed cœliotomy and found a fibroid growing from the posterior wall of the uterus lying in the right iliac fossa, and a smaller tumour in the anterior wall occupied the left iliac fossa. I removed the uterus and the left ovary and Fallopian tube. The patient recovered and was in excellent health in 1900.

A study of the uterus after its removal is very instructive. It will be seen on reference to Fig. 3 (which was drawn from the parts after they had been carefully hardened and bisected) that the total antero-posterior length of the uterus

FIG. 4.

Tube. Placenta. Amnion.



A pregnant uterus, with multiple fibroids, removed from a single woman, aged 31 years. The operation was undertaken because the tumour had undergone rapid enlargement. The patient absolutely denied the probability of pregnancy. (Museum of St. Mary's Hospital.)

is 20 centimetres. The average conjugate diameter of a pelvis with the soft parts in position is about 10 centimetres, so that it was quite impossible for this uterus to be accommodated in its normal position in the pelvis. It appeared to me that the fibroid on the posterior wall of the uterus became gradually impacted in the pelvis as the uterus enlarged after conception, and at last induced retention of urine by compressing the urethra. When Dr. H. H. Mills relieved the impaction axial rotation took place to the extent of a quarter of a circle, due to the accommodation of the fibroids in the iliac fossæ, hence the pain and acute suffering which supervened after the uterus was pushed out of the true pelvis.

The study of this case induced me to look very carefully into the clinical records of cases where trouble arose early in the course of pregnancy associated with uterine fibroids, and there is one fact which stands out in a very significant manner—in quite a large number of instances the patient seeks relief because her tumour has increased rapidly and causes pain, but she rarely suspects that she is pregnant. It is important to remember this even in cases where women have lived in sterile wedlock many years. The following case will serve as an example.

CASE 3.—A woman, 44 years of age, had been married 14 years and had never been pregnant. On examination an abdominal tumour was found which caused great pain and as it seemed to be quickly increasing in size the patient sought admission into the Middlesex Hospital. Mr. Andrew Clark performed hysterectomy as the uterus was occupied by two large submucous fibroids. The uterus also contained a fœtus of about four and a half months. The patient made an excellent recovery.[3]

The museum of St. Mary's Hospital contains a specimen which illustrates in an unmistakeable way the futility of relying on the statements of unmarried women when pregnancy is concerned. The preparation (Fig. 4) is a uterus deformed by fibroids and occupied by a fœtus of about the fourth month of gestation removed from a single woman, 31 years of age; the operation was undertaken because the "tumour" had undergone rapid enlargement and the patient absolutely denied the probability of pregnancy.

In each of these cases the fact of the uterus being gravid was overlooked. The line of treatment adopted probably saved each patient a serious illness.

The impaction of a uterus with fibroids secondary to conception is not only responsible for pain, and in a certain proportion of cases to retention of urine from direct pressure on the urethra, but it probably accounts for the frequency with which abortion occurs under these conditions, and it is interesting to observe how even a relatively small fibroid will impede the ascension of the uterus as it enlarges during pregnancy and give rise to great trouble. For example, a woman under my own care four months advanced in pregnancy complained of pain due to a "lump" in the left iliac fossa. This lump elicited a variety of opinions at a consultation held to determine the course of treatment. I regarded it as a sessile fibroid of the uterus near the brim of the pelvis. At the operation this was found to be the case. The tumour in shape was something like a kidney and about as big, and had grown from the anterior wall of the uterus near the left cornu; as the uterus increased this fibroid became impacted under the pelvic brim. The uterus continued to rise out of the pelvis as the pregnancy progressed, but the fibroid remained fixed, and as a result the uterus slowly rotated, and at the time of the operation the degree of rotation amounted to rather more than a quarter of a circle. I enucleated the tumour. The patient recovered, the pregnancy went to term, and she was successfully delivered of a living child.

CASE 4.—In December, 1900, a woman, 32 years of age, was placed under my care with the following story. She had been married four years and had twice miscarried, and was now pregnant for the third time; the pregnancy had advanced to the fourth month when she began to experience great pain in the pelvis, but being particularly anxious to possess a living child, Mr. L. E. S. Beer had kept her in bed for a month. As the uterus rose in the abdomen a tumour became obvious, but we could not determine its precise character. As it was clearly the source of her pain I explored it through an oblique incision to the right of the linea alba and found a subserous fibro-myoma growing from the uterus and adherent to the bladder. The tumour was of about the size of a tennis ball and I succeeded in peeling the bladder from it without opening its cavity. The patient made an uninterrupted recovery, the pregnancy continues undisturbed, and I am full of hope that the gestation will end in success.

I have subjoined some cases in the form of a table, because I think few surgeons really appreciate the way in which the uterus tolerates surgical operations even when pregnant. In Dr. W. H. Fenton's case I was present at the operation, which was undertaken with the impression that the tumour was of ovarian origin and had probably undergone axial rotation. The fibro-myoma in that case was larger than a cricket-ball. An important clinical point and one that requires emphasising is this: in all the cases

[3] Middlesex Hospital Reports, 1897, p. 218.

in the table the patients complained of great and continuous pain, and it was for the relief of pain that the operations were undertaken. In nearly all the

TABLE I.—*Cœliotomy for the Removal of Subserous Fibroids during Pregnancy.*

Operator.	Month of pregnancy.	Result.	Reference.
Thornton	Seventh.	Died.	Transactions of the Obstetrical Society of London, vol. xxi., p. 163.
Bland Sutton	First.	Went to term.	Clinical Journal, vol. xi., p. 305.
Bland-Sutton	Fourth.	Went to term.	Ibid., vol. xvi., p. 404.
Morris	Fifth.	Went to term.	Transactions of the Obstetrical Society of London, vol. xl., p. 256.
Fenton	Fifth.	Went to term.	Unpublished.
Bland Sutton	Fifth.	Undisturbed.	This lecture.

cases the operation was undertaken on an erroneous diagnosis. In my first case the swelling was thought to be a pyosalpinx. Knowsley Thornton considered the tumour in his case to be an ovarian cyst, and Morris diagnosed the swelling in his patient to be of renal origin.

I have often recognised pedunculated and sessile fibroids in a pregnant uterus that caused no inconvenience, but when a fibroid interferes with the bladder or the bowel it will cause pain, and should it become incarcerated in the recess of the sacrum or under the brim of the pelvis and prevent the uterus rising into the abdomen it will also cause pain, but, what is more significant, it will provoke abortion.

Fibroids when they complicate pregnancy are not only dangerous in that they frequently cause abortion but may obstruct delivery when the pregnancy goes to full time; the duration of pregnancy may be absolutely normal and the child may be born without any hindrance, but the fibroid itself is inimical to the life of the mother.

One of the great dangers which surround all women during their lying-in is septic endometritis, and this is a serious sequel to delivery with a normal uterus, but it is a more serious matter when an infected uterus contains fibroids. This is a subject to which I have given close attention and it is worth our careful consideration. Every fibroid is completely invested by a covering of fibrous tissue which not only isolates it from the tissues of the uterus but also supplies it with blood, for the vessels on which the fibroid depends for its nourishment and growth are derived from those ramifying in the capsule. When this capsule is damaged the fibroid invariably dies, and if septic organisms gain access to it gangrene is the inevitable result. This is always a dangerous condition and in many instances entails the death of the individual.

Necrosis and subsequent gangrene of a fibroid arise usually from injury, and this may be due to the examination of the uterus with a sound, dilators, curette, or the forceps of the accoucheur. Occasionally it happens as a result of the efforts of the uterus itself to expel a pedunculated fibroid. It will serve our purpose to study a case of this kind in detail, as it will enable us to appreciate more readily what happens when a fibroid is injured in the course of a labour.

CASE 5.—Some years ago I saw a woman with a large black mass protruding from the vagina; blood oozed freely from it and she was extremely weak and ill, with a temperature of 103° F. and a pulse-rate of 120 to the minute. This mass was a pedunculated fibroid which had been extruded from the uterus and had become septic; its capsule had been destroyed and the whole tumour was in reality a stinking slough. Under chloroform it was removed and the uterine cavity was thoroughly irrigated with sublimate solution (1 in 2000). For a few days all seemed well, there was no pain or tenderness; on the evening of the third day after the removal of the slough the patient complained of sudden abdominal pain followed by the signs of shock; this gradually passed off and severe peritonitis followed and she died two days later. At the post-mortem examination the uterine cavity was found to be occupied by sloughs of endometrium and the mucous membrane of the Fallopian tube had also sloughed; fragments of it were projecting through the unclosed cœlomic ostia of the tubes and septic fluid had also leaked in the general peritoneal cavity and set up fatal peritonitis. This instructive specimen is preserved in the museum of the Royal College of Surgeons of England. It formed one of the series of specimens which accompanied my essay for which that College awarded me the Jacksonian Prize in 1892. This specimen illustrates extremely well the pathological changes which arise in fibroids subsequently to abortion or delivery. The expulsive efforts of the uterus force out the fœtus and in a fair proportion of cases they will cause the fibroid to extrude into the vagina, where it becomes septic and initiates a condition of things such as existed in the case just described. When the tumour is small and sessile the nature of the case is not always suspected until profuse bleeding from the uterus, and the occurrence of urgent clinical signs of sepsis lead to a physical examination of the uterus.

It does not necessarily follow that in every parturient woman with a fibroid the tumour becomes septic. Indeed, a septic fibroid does not always cause death; for example, Dr. Champneys's patient had a grave illness and may be described as being in the "jaws of death" for many weeks until the sloughs escaped and the septic signs abated. There is a wonderful means by which nature blocks one avenue by which lethal effects are produced from septic processes arising in the uterine cavity. When the infective process extends from the endometrium to the Fallopian tubes it often leads to occlusion of the cœlomic ostium of the tube and thus prevents the direct leakage of septic matter into the peritoneal recesses of the pelvis. This happens more frequently than many of us suspect and I have on several occasions drawn attention to the fact that septic endometritis after labour is responsible for a far larger proportion of cases of acute and chronic salpingitis than gonorrhœa.

I am anxious not to be misunderstood in relation to sepsis and fibroids. It does not by any means follow that when a parturient woman has a fibroid in her uterus that it will of necessity become septic during her puerperium, much will depend on the care and skill of the medical attendant, the midwife, and the nurse; and even if the tumour does become septic and slough it need not, as I have said before, destroy the patient, the ultimate effect will in a very large measure depend upon the variety of the micro-organism by which the patient has become infected.

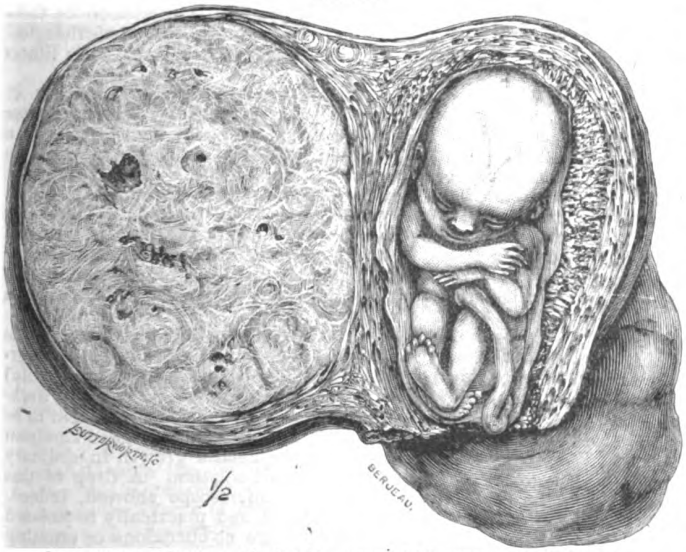
It has happened to me on many occasions to perform hysterectomy on account of fibroids, and there is one very important feature which comes out in the clinical history of the patients: many state that they never had any pain or suspected the existence of a tumour till the occurrence of a miscarriage; since then good health has been denied them. When one gets a definite statement of this kind it generally happens at the operation that one or both Fallopian tubes have the cœlomic ostium occluded and the tube distended with sterile serum and sometimes with pus. These distended tubes are the legacy of a septic endometritis supervening on the abortion. On one occasion I had an excellent opportunity of studying the early stage of septic infection in a fibroid.

CASE 6.—A woman, 35 years of age, had conceived and, as far as she could reckon, the pregnancy had advanced about three and a half months when such disturbance ensued as led the medical man in charge to fear the existence of tubal rather than uterine pregnancy. We could not decide whether the pregnancy was uterine or tubal, but we also determined that it was complicated with a tumour; the same evening abortion occurred. Dr. Champneys also saw the patient with us, but could not decide whether the tumour was ovarian or a fibroid, and we decided to leave the tumour until after the puerperium unless dangerous symptoms supervened. A few days later the abdominal signs were ominous, and on the ninth day of the puerperium I performed cœliotomy and removed a pedunculated subserous fibroid as big as a cocoa-nut. This fibroid adhered to the adjacent bowel, the omentum, and the peritoneum, it was very soft and œdematous, and the abdomen contained a quantity of yellow glutinous lymph. Microscopic examination showed the tumour to be thoroughly infiltrated with inflammatory cells. The patient made an uneventful recovery and 30 months afterwards became the mother of a fine infant.

The condition of the tumour in this case furnished me with some interesting points. It has happened to me whilst operating on subserous fibroids, and also in watching operations by other surgeons, to find the tumour adherent to the great omentum and this structure had the epiploic arteries and veins enormously developed, the arteries being in many instances as big as the radials; thus the whole of the omentum connected with the tumour resembled an enormous rete composed of large tortuous arteries, veins, and occasionally lymphatics as big as the cephalic vein; the dilated lymphatics contained fluid of a pale straw colour. The contrast of the maroon tint of the blood in the arteries, the deep blue of the veins, and the light yellow of the lymphatics with their very thin walls, formed an anatomical picture scarcely likely to be forgotten by those who have had to deal with such a condition. The interest in relation to our present study is this: all the cases in which I have met with this great development of the blood-vessels in the omentum have occurred in patients who have been pregnant, and they have always furnished the definite statement that the tumour began to trouble them after a confinement or miscarriage, and that they had a long illness. This I would interpret in the following way. Labour or abortion was complicated with a fibroid. The endometrium became infected and this extended to the fibroid and led to the formation of adhesions and their gradual vascularisation from the omental vessels; eventually free anastomosis arose between the vessels in the capsule of the fibroid and the epiploic arteries. The most extraordinary example of a pathological arterial rete of this kind I have ever seen was in a case of tubal pregnancy which went to term and the placental vessels directly anastomosed with the enlarged vessels in the great omentum.

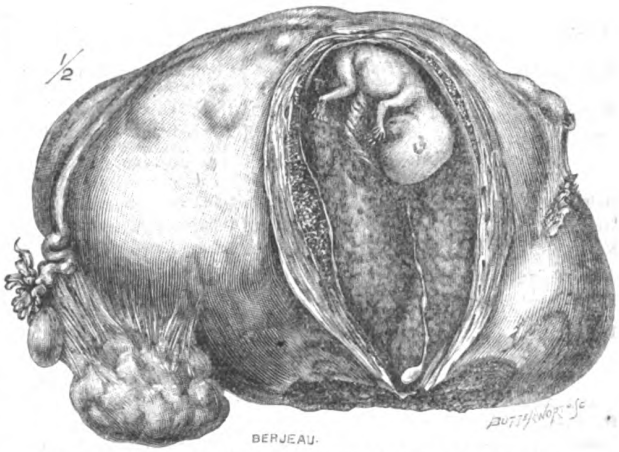
The facts at our disposal indicate very certainly that uterine fibroids, even more than ovarian cysts, are a grave menace to successful pregnancy and in a large number of cases are directly responsible for a premature termination of the pregnancy, and when abortion happens the patient requires to be safeguarded most strictly against infection, for it may involve the fibroid, and in this event the patient not only runs a very great risk of losing her life, but she certainly will have a long illness, and in many instances a serious operation may be necessary to prevent her from becoming a chronic invalid. We must not forget that a woman may have one and indeed several fibroids in her uterus and yet be the happy and healthy mother of children, but no one will deny that the presence of a fibroid in a gravid uterus is an additional peril to those which are proverbially associated with pregnancy. It occasionally happens that a woman comes under observation known to be suffering from a combination of pregnancy and fibroids and a careful examination discloses the fact that if the pregnancy goes to term delivery by the natural passages would be impossible. In these circumstances hysterectomy is justifiable. This is illustrated by a specimen in the museum of St. Bartholomew's Hospital (Fig. 5). It is a gravid uterus with a large fibroid in its wall removed by cœliotomy from a woman, 44 years of age, under the care of Dr. W. S. A. Griffith. He found that the fibroid so blocked the pelvis that delivery would be impossible. It was removed by Mr. Harrison Cripps.

FIG. 5.



A pregnant uterus, with fibroids, removed by supra-vaginal hysterectomy from a woman, aged 44 years. The fœtus is about four and a half months. (Museum of St. Bartholomew's Hospital.)

FIG. 6.



A pregnant uterus, with fibroids, removed from a woman who five years previously had nearly lost her life from the obstruction the fibroids offered to the passage of the fœtus. Case 4 in Table II.

CASE 7.—A married woman came under my care in great distress because she knew that she had fibroids and feared that conception had also occurred. Her distress was due to the fact that five years previously she had been in the same straits and though prematurely confined had been so ill and ran such a narrow risk of dying that she wished to avoid such a contingency if possible. At a consultation it was decided that one of the fibroids so blocked the pelvis that if the pregnancy continued the fœtus could not be born through the natural passage; after very careful consideration hysterectomy was advised and successfully carried through (Fig. 6).

We may now turn our attention to cases where, in spite of the fibroid, pregnancy has continued uninterruptedly to term and where labour is imminent or actually in progress when the accoucheur finds the way barred by a tumour which he regards as a fibroid. A study of the literature indicates that in Great Britain the principles which used to guide the conduct of such labours were as follows. Attempts should be made to push the tumour out of the pelvis and then extract the fœtus by version or with the aid of forceps. If the tumour cannot be pushed out of the pelvis then Cæsarean section should be performed. In recent years, however, when the impaction cannot be relieved it has become the practice with many obstetric surgeons to perform Cæsarean section and then to remove the uterus, a method which has been eminently successful. It is also a practical fact well worth bearing in mind that when the uterine tissues are softened by the pregnancy and the ligaments are stretched by the growing uterus hysterectomy is a simpler operation and the convalescence is usually quicker than when performed for fibroids alone. In order to show that this improved method of dealing with fibroids complicating pregnancy and labour is finding favour I have added a list of some recently recorded operations which have been

performed in London with the hope that other operators may be induced to record their experience.

TABLE II.—*Hysterectomy for Fibroids complicating Pregnancy and Labour.*

Operator.	Month of pregnancy.	Result.	Reference.
Cripps, H.	Fourth.	Recovered.	Museum of St. Bartholomew's Hospital.
Clark	Fourth.	Recovered.	Middlesex Hospital Reports, 1897, p. 218.
Bland-Sutton	Third.	Recovered.	Clinical Journal, vol. xi., p. 305.
Bland-Sutton	Second.	Recovered.	Ibid., vol. xvi., p. 404.
Gow	Eighth.	Recovered.	Transactions of the Obstetrical Society of London, vol. xxxix., p. 7.
Galabin	Sixth.	Recovered.	Ibid., vol. xlii., p. 258.
Horrocks	Fifth.	Recovered.	Ibid., ,, ,, p. 242.
Routh	Ninth.	Recovered.	Ibid., ,, ,, p. 244.
Spencer	Ninth.	Recovered.	Ibid., vol. xxxvii.
Duncan	Second.	Died.	Middlesex Hospital Reports, 1897, p. 182.
Duncan	Fourth.	Recovered.	THE LANCET, March 3rd, 1900, p. 613.

It cannot to my mind be too strongly set forth that in cases where a fibroid has obstructed labour and has been successfully "pushed up," as the phrase goes, if any dangerous symptoms supervene during the puerperium then cœliotomy, followed by myomectomy (or hysterectomy if the need be), should be carried out without delay. That myomectomy and enucleation are successful during the puerperium I have already testified in this lecture (Table I.).

I am well aware that in a very large number of instances fibroids and pregnancy coexist and no harm ensues, for though the tumour occupies the pelvis in the early stages it is so much "part and parcel" of the uterus that, as the enlarging organ rises out of the pelvis, it carries the fibroids with it. In the case of an incarcerated ovarian tumour it is different, for the more the fundus of the uterus ascends the more the ovarian pedicle elongates and the more perfect the incarceration becomes.

From a very broad survey of this question I have arrived at the following deduction: ovarian tumours have given more trouble to pregnant and parturient women than fibroids, but fibroids have been far more lethal as they so frequently destroy puerperal women from sepsis. The whole subject is an instructive study of the baleful effects which environment often imposes on so-called innocent tumours.

REMARKS ON AGGLUTINATION BY PLAGUE BLOOD.

BY E. KLEIN, M.D., F.R.S.

VARIOUS observers have stated that the blood of persons convalescent from plague possesses the power of agglutinating plague bacilli of culture. To mention a few only of these observers, the late Dr. Leumann in several reports of the Bombay Plague Laboratory found that the blood not only of persons convalescent from an attack of plague, but also of those who had been injected with the Haffkine plague prophylactic, possesses marked agglutinating action; Zabolotny,[1] as also other observers, speaks of a similar agglutinating power of the blood of plague convalescents; and Dr. A. K. Chalmers, at the meeting of the Incorporated Society of Medical Officers of Health on Nov. 10th, 1900, mentioned that in Glasgow this agglutinating action of the blood of plague convalescents was also ascertained.

Now, without in the slightest degree intending to cast any doubt whatever on the correctness of these observations and statements, it may be permissible to point out that unless the method according to which the experiments were made is mentioned in detail the nature of these observations is not easy of comprehension. All those who have worked on specific agglutinations and all those who are constantly using this most valuable diagnostic method—to wit, in typhoid fever—are agreed on this, that all agglutination experiments must start with a good emulsion of the microbes on which the agglutinating action of blood has to be tested. Unless a good emulsion is used in which the bacilli are isolated and evenly distributed no conclusion can be drawn; indeed, no reliable experiment at all can be started. If, for instance, a distribution of the bacilli is employed in which already at starting the bacilli are aggregated in larger and smaller clumps, the experiment of testing the agglutinating action of blood, serum, or any other fluid on such an emulsion can be of little value. It is well known that of the typhoid bacilli, cholera vibrios, and other microbes a good emulsion—i.e., a uniform distribution of the microbes either as a broth culture, or as a bouillon, or salt emulsion made from the growth on agar or gelatin—can easily be prepared, and therefore no difficulty is experienced or apprehended in starting without further precautions the required agglutination experiments. But this, unfortunately, is not the case with the plague bacilli. The plague bacilli in a broth culture form naturally at the sides and the bottom of the broth granular and floccular aggregations—masses of chains of bacilli intimately bound together—the main part of the broth remaining clear. However much such a broth culture is shaken there are always present, when a droplet is examined under the microscope, a sufficient number of clumps to vitiate all further proceeding in the agglutination test. On agar, glycerine-agar, or serum the plague bacilli form a characteristic sticky viscid growth, due to the fact that the bacilli produce on these media a gelatinous, sticky, interstitial substance, by which the bacilli remain coherent. If a particle of such a growth is placed in bouillon no amount of shaking can produce a workable emulsion, microscopic specimens show numerous clumps and coherent masses, and therefore no reliable test can be made with such a distribution. This will be sufficient to show that to perform the agglutination test with plague blood on plague culture the initial desideratum of having a good emulsion of plague bacilli meets with great difficulties. These were the difficulties I met with in trying to repeat the observations recorded by the above-named authors, for, unfortunately, the method of preparing the required emulsion was not stated by them. A positive agglutination test of plague bacillus might not only be of theoretical value, but, as must be obvious, would possess great practical importance in those cases of convalescent persons in whom the bacteriological or other evidence did not directly demonstrate their illness to have been plague.

It was known to me that gelatin surface cultures of plague bacilli do not possess the viscidity and stickiness characteristic of agar or serum cultures; they appear of a drier character, and therefore I tried to obtain a workable emulsion from such a gelatin culture. Consequently a particle of the growth was distributed in bouillon and by shaking this it was attempted to produce a workable emulsion. But this was of no avail; the bacilli, although in many places in an isolated condition or in small masses, remained sufficiently numerous in bigger clumps, and therefore made this distribution unfit and unsatisfactory for a reliable experiment.

It occurred to me, however, that by distributing the gelatin growth in physiological salt solution—a fluid otherwise known to be capable of dissolving interstitial (globulin) substances, it might be possible to obtain a good and workable emulsion. The experiment proved this contention to be correct. There was no difficulty in making a good emulsion by shaking up a particle of the gelatin growth in ordinary (0·75 per cent.) physiological salt solution. A drop of this emulsion examined under the microscope showed, indeed, the bacilli uniformly distributed and practically in isolated condition; at any rate, there were no obnoxious or vitiating clumps. And such a microscopic specimen shows (sealed up) even after being kept for 24 hours, the same isolated condition of the bacilli. The first and important difficulty of having a good emulsion of plague bacilli was thus overcome. It was now possible to proceed to test on such an emulsion the agglutinating action of plague blood or of any other substance.

I had already from a number of previous indications the

[1] Archives des Sciences Biologiques de St. Pétersbourg, vol. viii., N. 1, referred to in the Centralblatt für Bakteriologie und Parasitenk., Band xxviii., N. 25, p. 881.

suspicion that bouillon *per se* is not without effect in causing agglutination of plague bacilli, and the first experiments were therefore made with sterile alkaline bouillon. The result was sufficiently striking. If to a good salt emulsion of plague bacilli (taken from the gelatin surface) bouillon is added in the proportion of 1 of bouillon to 20 of emulsion the result of positive agglutination is evident already in from 12 to 15 minutes. Instead of the uniform distribution of more or less single bacilli there is now everywhere a general massing of the bacilli into larger and smaller clumps and a corresponding disappearance of the previous single bacilli. Even when the dilution is 1 in 40 the same clumping is noticeable, though somewhat later (in from 15 to 30 minutes). From this it is evident that for the performance of the agglutination experiment with plague bacilli the method of making an emulsion of the microbe in bouillon generally used for other bacilli—e.g., typhoid and cholera—is not applicable.

The next experiments were made with normal human blood and with normal mouse's blood. In all instances a good salt emulsion of plague bacilli from a gelatin culture was made and to this the blood was added in the proportion of 1 in 20 and 1 in 40. Not even after 24 hours was there any difference noticeable between the control (emulsion) specimen and the specimen made with emulsion *plus* blood.

The next experiments were made with blood of rats which had been injected first with Haffkine's prophylactic, then with small doses and finally with large doses of living plague culture. These latter injections produced slight bubo and general illness, but after a few days the animals recovered, whereas the control (normal) rats injected at the same time and with the same amount of the same living culture succumbed. The blood of two such rats which had recovered was used for the agglutination test, three and five weeks respectively after the last injection. The proportion of blood added to the salt emulsion of plague bacilli was 1 in 20 and 1 in 40 and the result was distinct agglutination in 10 minutes; by the end of 15 minutes or so all bacilli had clumped into smaller and larger clumps, leaving the intervening parts practically free of isolated bacilli Such rats' blood produced not only sooner the agglutination but the clumps were larger than in the case of the bouillon experiment. From this, I think, it follows that the blood of the rat, convalescent from plague, has positive agglutinating action on an emulsion of plague bacilli. Whether tested by this method also the blood of a human being convalescent from a mild attack of plague or after infection with Haffkine prophylactic has, as might be expected, this agglutinating action, I am from my own experience unable to say.

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WHY ARE BOTH LEGS OF THE SAME LENGTH?

BY GEORGE E. WHERRY, M.C.CANTAB., F.R.C.S.ENG.

THE poet Pope must have been easily satisfied when he wrote the lines—

> "Why has not man a microscopic eye?
> For this plain reason—man is not a fly."

Here we are reminded of the tailor who thought that man had two legs in order that he might wear breeches. In this new century we are more persistent in our inquiries, less satisfied with our answers, and some of us even wish to interfere or try to mend. For these body-cobblers all simple mechanical influences become of the utmost importance as being to some extent under their control. Man cannot meddle with the mechanism of the sun, and we have therefore the more confidence in daylight; nevertheless we may watch the effects of great laws, as of symmetry or heredity, and help ourselves by the study.

The general question whether "a *man* by taking thought can add one cubit to his stature" is not now much to be considered, but rather whether a *child* has chances of gaining length of limbs apart from inherited potentiality. Though much would depend on heredity, something would depend on conditions during growth. The Eton boy is taller than the workhouse boy of the same age; and Frederick William's tall guardsmen with selected tall wives may still stamp the present generation with a tall progeny. Grogan found a long-legged people living on the Nile sudd who may have developed from mudlarks to storks by the unusual conditions of their life for generations, and I am prepared to believe that individuals and peoples may be stunted in stature by weight-carrying and over-walking in youth.

As a fact, our lower limbs are not usually both of the same length, though they are so for all practical purposes. There are slight differences in length, usually an excess in the left, which does not influence the gait or in any way limit the usefulness of the legs in progression. That the lower limbs are longer than the upper is an advantage; but it is interesting to note that they are not born so, and the short helpless lower limbs of the infant are rather prehensile than ambulatory. With regard to the upper limbs of the adult these prehensile organs are shorter and smaller than the lower limbs, and the right arm is almost always longer than the left. The right humerus and radius taken together will be from one-third to three-fourths of an inch longer than the left. This is not so at birth, but becomes so during growth, and the increased development is probably associated with the use of the right arm and hand. In the gorilla and anthropoid apes, the adult skeletons which I have measured in the Cambridge museum show no such difference. It interests me to note that the right arm of man gains on the left not only in size and strength but also in length by excessive use. The gorilla, having no need to use one limb more than the other, is ambidextrous or ambisinistrous. A climbing monkey has been seen to swing from bar to bar across a space of 20 feet and in the transit to catch a bird in the air with wonderful precision, assisting itself with five prehensile organs—four limbs and a tail.

The length of the arms in the anthropoid apes is very striking and one would like to train a baby gorilla to stand and walk upon its legs expecting that it would grow longer in the legs than other gorillas. It may be if a child were trained to walk upon its hands, and the feet were used like those of the Brussels painter with prehensile toes, the arms might then grow as long and as strong as the legs. About legginess generally it may be stated that we are not born leggy like the foal or the kangaroo, but we gradually achieve legginess. At about 15 years of age the human boy shows what he can do in that direction and develops this strikingly human characteristic. What an extraordinary difference in this aspect from the foal, who has to follow the mare about the field, and is born with limbs well adapted for that purpose.

The kangaroo is an example of an animal with disproportionately long hind limbs. In the development of this creature after an intra-uterine life of less than six weeks the mother by means of its mouth then takes from the womb the tiny one-inch fœtus and places it inside the pouch, where the fœtus finds, and hangs on to, the teat of the mother's mammary gland; by the time the baby kangaroo leaves this second uterus, in about nine months, its hind limbs have acquired their adult proportions and become serviceable for hopping about. After this the infant kangaroo occasionally returns for food and shelter to the marsupial pouch always to its own teat though younger infants are in possession of other teats.

In organs which grow continuously through life it is necessary for healthy development that natural resistances should be continually offered to the growing organ. Without this opposition the individual suffers, as in the case of the rat when, a tooth being lost, the unopposed tooth tacks the jaws together or seriously hampers the bite by its increased length.

With regard to mechanical causes which influence growth it is difficult to avoid the speculation that the direction of a spiral often depends upon some outside resistance so applied as to determine a right or left helix, even if the spiral itself be not so made. That this direction is so determined is made probable by considering a carpenter's shaving. The reason of the spiral form of a right-handed screw which is usually seen in shavings is because the workman tends to drive his plane slightly to the left. He plays, as a cricketer would say "a little to the on"; if he made a perfect stroke fore and aft a simple coil would result; in "playing to the off" or standing on the wrong side of the bench he would make a left-handed twist in his shaving. The carpenter is usually all unconscious of the twist that he makes and

imparts to the shavings and it is a pretty piece of evidence of how slight and subtle force determines the direction of a spiral.[1]

In the rare specimen in the Cambridge museum of a narwhal with two tusks both the tusks have a sinistral spiral. In the usual one-tusked specimen the left is always developed and also carries throughout a sinistral twist, but the unerupted tusk, 10 inches long, which is buried in the bone, exhibits a perfectly straight fibre and no spiral is to be found. This suggests that the spiral is formed and its direction determined after it leaves the bone and becomes opposed to the waves during growth. The creature ploughs or planes (as does the carpenter) and plays to one side so as to give a sinistral direction to the spiral which develops in growth. When by rare chance a double tusk appears the creature still from habit carries its head to one side and both tusks show the sinistral spiral. The spiral horns of animals such as the koodoo are symmetrically arranged, are right and left by certain rules to which few exceptions[2] only are found. These horns keep approximately of the same length, partly by being exposed to equal resistances and like conditions during growth. The hoofs of a sheep which had lived among the boggy soil of the Falklands show the necessity of suitable resistances as well as the effect of undue moisture. Each portion of the cloven hoof is of enormous size and length, twisted and intertwined in a complicated twirl.

To return to the question of the length of the lower limbs, it is important to consider the fact that bones increase in length not so much by interstitial deposit as by addition to their ends; that is, by progressive ossification of the layer of cartilage which intervenes between the end of the shaft and the epiphysis Ossification goes on till the component parts of the bone are all united by bony matter, and thus the stature of the individual is determined. If from inflammation or injury an epiphysis be damaged one limb may be shorter than the other, or inflammatory stimulation may even induce an increased length in the bone affected. The skeletons of tortoises, not being subjected to sudden jars, have no epiphyses at the ends of the long bones. Whereas in the leaping frog the extremities of the humerus and femur long remain as separate epiphyses.

The continuous concussions to which the ends of the bones of the lower limbs are exposed, when a vigorous child is excited by its own natural spirit to run about, are doubtless of great value in assisting the growth in length of the lower limbs, which soon lose their infantile character, and become adapted for running and walking. By exposing the lower limbs to the same influences and resistances during their entire growth we manage to maintain them of the same size and of the same length, and gentle jars upon the epiphyses at the joints may be considered favourable to growth.

If, then, by any evil chance one limb be shorter than the other in a growing child, we must find the cause of that shortening, and if there be nothing against the rational plan of treatment—after study of the epiphyses and joints of the child—it will not suffice merely to put a boot with a thicker sole on the shorter limb so as to avoid a tilted pelvis and a crooked spine. In such a case carefully planned exercises will be needed, especially directed to the shorter limb, during all the period of growth. The punishment must be made to fit the crime, and, so soon as the limb can be trained to a sufficient standard of strength, one-legged balancing and hopping exercises will encourage the growth of the weak limb.

It is probable that sometimes when the heel can be brought down in the short leg that there is more shock to the limb on that side during progression until the boot be worn, and if intermittent pressures and succussions are of any value in respect of gaining length this boot may actually retard growth by lessening the shocks, unless suitable exercises be performed with the short limb. No doubt the short limb will require all care to give it rests as well as resistances but the hopping (as at hop-scotch) or one-legged exercises (like the one-legged knee-bender) gradually taken will give a power of poise or balance which is of great advantage.

A child may have quite a strong limb and yet a poor balance, defining balance as the power of maintaining the equipoise under all conditions with the minimum of muscular effort. Continual standing about and long walks are bad for growth and are to be avoided; cycling should only be used to save fatigue in going to or from the playing-field or gymnasium. Long-continued cycling is bad and resembles walking on air-cushions which would give no judicious stimulation of the joints. Much cycling for a female child would run some risk of narrowing the pelvis, yet the cycle could be wisely used on the way to the dancing class or school. The natural gait of the child is a hop, skip, and jump, and not the walk two by two of the old-fashioned girls' school.

The difference between the bone-setter and the surgeon is nowhere more apparent than in cases demanding exactly opposite plans of treatment. In cases of disordered joints and epiphyses rest is imperatively demanded, whether in bed or on Thomas's splints, whereas with sound joints and epiphyses the limb must be actively used under supervision of the surgeon. In such a common case as that of a child with one lower limb shorter than the other after an attack of infantile paralysis the nerve-storm has been long past, and it is necessary to remove the effects of the storm on the limb. After tenotomy, passive movements, and massage have been considered or used, then the child with a suitable boot should begin and continue the one-legged exercises which have been chosen as most helpful, and these must be watched and worked hopefully during the time of growth. The exercises chosen must include those which give gentle natural shocks to the joints. The effect on the local circulation of stamping and beating the feet is valuable, and is immediately felt when an Alpine guide beats the half frozen feet of his Herr.

In the foregoing remarks it will be easy to separate the facts from mere speculations. The practical suggestions are founded, I hope, on the facts, and they are set forth in the belief that, with all the care taken to fix and set at rest the joints and limbs, it is easy to neglect stimulation and encouragement of growth when active treatment is needed. The period of growth in the human subject is so prolonged that a surgeon past middle age may not hope to live to see the results of his advice.

Cambridge.

[1] "On Spiral Growth," THE LANCET, Jan. 1st, 1898, p. 24.
[2] Nature, Jan. 10th, 1901.

A CASE OF SUBACUTE GLANDERS.

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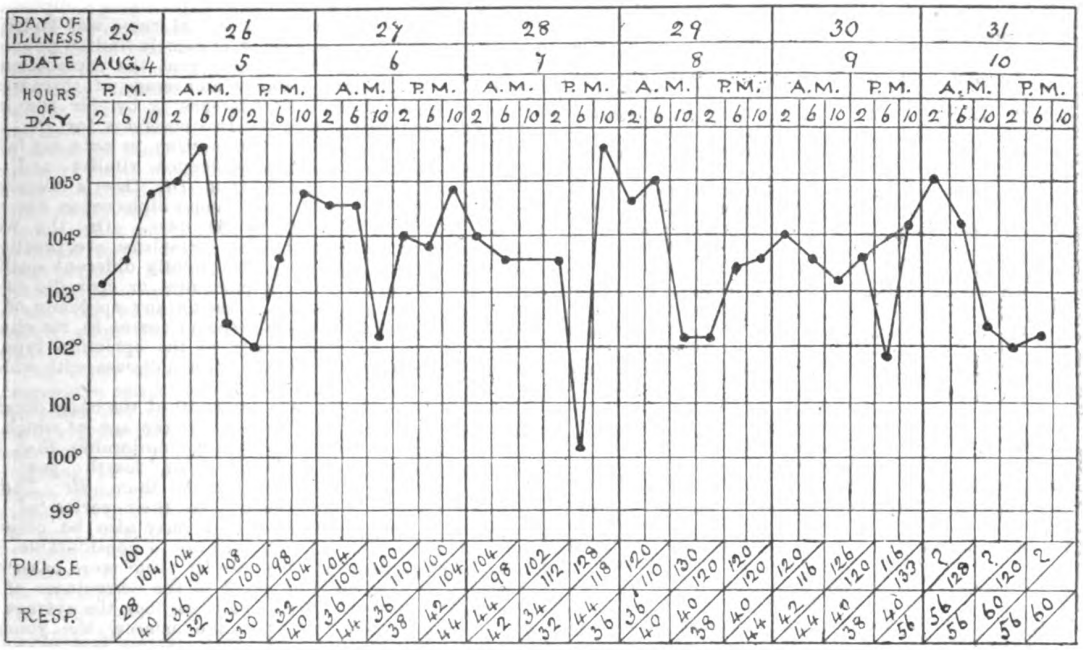
A MAN, aged 45 years, a cab proprietor, was admitted into Guy's Hospital on August 4th, 1900, under the care of one of us. Three weeks before he was taken ill a horse in his stables, supposed to have been suffering from glanders, had been killed. The patient first felt ill on July 9th, and between this time and the date of admission he had a small abscess on the left forearm, which was opened, and elsewhere on the body several other swellings which did not suppurate. During this period the patient was so ill that he had to remain in bed, his temperature being raised throughout, and on several occasions reaching 104° F.

On admission the patient, a big stout man, was obviously very ill. He was very tremulous, but breathing comfortably. His temperature was 103·2°, his pulse was 100, and his respirations were from 30 to 40 per minute. On the left forearm was a shallow sinus which led into the above-mentioned abscess cavity and from which exuded a little thin discharge. Over the back of the right elbow there was some cellulitis and also over the back of the first and second right metacarpal bones. A similar swelling was present on the inner side of the left knee. These swellings somewhat resembled patches of erythema nodosum No fluctuation was detected in them nor any œdema of the surrounding tissue. A few mucous râles were heard over the bases of the lungs posteriorly. No physical signs were present on examination of any other of the organs. The urine did not contain albumin. There was no glandular enlargement and rhinorrhœa was not present. There was a small furuncle on the buttock, from which a cultivation was made. For the first three days after admission the condition of the patient did not materially alter, but on August 7th he

became distinctly worse and had recurrent attacks of difficulty in breathing, saying "he was sure he would be choked." On the 8th a crop of small papules, which became pustular appeared on the back. On the 9th there were a few fresh papules on the right thigh. The left knee-joint was found to contain some fluid. During this day and the next the attacks of difficulty in breathing became more marked and the patient, becoming gradually worse, died on the 10th. The course of the temperature and pulse is shown on the accompanying chart. Cultivations were made from the furuncles, but up to the time of death no positive result had been obtained.



Necropsy.—The lungs were œdematous, but there were no nodules or any pneumonic areas to be seen. All the other viscera appeared normal to the naked eye and no foci of inflammation or suppuration were present anywhere in, or among, the viscera. The left knee-joint contained a thin, yellowish, glairy fluid and over the right elbow the tissues were infiltrated with a similar oily fluid. Cultivations were made from the heart blood, the spleen, and from the fluid in the region of the elbow and from the left knee-joint.

Remarks.—The case was one of subacute glanders of a month's duration. During life, although the history and some of the signs and symptoms suggested the possibility of glanders, yet the clinical evidence, in the absence of bacteriological proof, was not sufficiently clear to allow of a positive diagnosis of glanders being arrived at. Although the patient was very ill the local manifestations of the disease were slight and might have been those of a subacute pyæmia of other origin. They were (1) subcutaneous swellings. (2) a few small furuncles, (3) a small abscess in the left forearm, and (4) the presence of fluid in the left knee-joint. There were no typical ulcers of the skin, no well-marked bullous or pustular eruptions, no rhinorrhœa, and no intra-muscular abscesses, the presence of any of which would have helped to distingush the case with more certainty as one of glanders.

Bacteriology.—The small furuncle upon the buttock was examined microscopically and culturally. Bacilli were seen in the pus which resembled the bacillus mallei, but the cultures were full of staphylococci and no bacillus mallei was found upon them. The heart blood, the spleen, and the fluid from the knee-joint were examined and mixed cultures containing a glanders-like bacillus were obtained. These were plated and pure cultures of the bacillus were obtained. The bacillus had all the typical morphological appearances and gave the staining and cultural reactions of the bacillus mallei. A small quantity of a glycerine-agar culture was inoculated into the peritoneum of a male guinea-pig and after 48 hours its testicles were distinctly enlarged and inflamed. It was killed after four days and pus containing bacillus mallei was found inside the tunica vaginalis and small abscesses in the body of the testicle which on section were seen to contain characteristic bacilli. There can be no doubt, therefore, that the case was one of glanders. It was suspected before death that the bacilli which had been found were really glanders bacilli, but owing to the contamination with other bacteria it was not proved. There would appear to be little doubt that had the abscess upon the forearm been examined bacteriologically the bacillus mallei would have been found. There seems also to be little doubt that had it not been for the bacteriological examination the case would not have been certainly diagnosed as one of glanders.

POSTERIOR BASIC MENINGITIS.

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THE disease which is known in this country by the name of "posterior basic meningitis" has always attracted much attention at the Hospital for Sick Children, where the names of Dr. S. J. Gee, Sir Thomas Barlow, Dr. D. B. Lees, and more recently of Dr. Still, are always associated with it. The last-named, while holding the post of registrar and pathologist, described a diplococcus which he had found constantly present in the meningeal exudations—a diplococcus which in most respects resembles the diplococcus intracellularis of Weichselbaum, the chief differences being the greater vitality of the organism found by Still and the fact that it grew well in broth media, whereas Weichselbaum's diplococcus did not grow at all or very slightly in such media. In the period, July, 1899, to August, 1900, there have been 17 cases of this disease in the medical wards at Great Ormond-street, or at least diagnosed as such, in 12 of which the diagnosis was verified by post-mortem examination. Of the remaining five patients two recovered; in two leave to make an examination was refused, and the fifth contracted diphtheria while in the ward and was transferred, owing to pressure upon our available beds, to the fever hospital. These cases, as will be seen later, do not all of them correspond to the

ordinary type of the disease, four of them being children much older than the average age, which Barlow and Lees state as 11 months.

List of Cases.

No. of case.	Age.	Result.	Remarks.
1	2 years.	Death; necropsy.	No bacteriological examination made.
2	5 months.	,, ,,	No bacteriological examination made.
3	4 ,,	,, ,,	Diplococci in exudate; no cultivations.
4	9 ,,	,, ,,	Diplococci in exudate and in cultivations.
5	4 years.	,, ,,	Diplococci in exudate and in cultivations.
6	11 months.	,, ,,	Nothing found in exudate; cultures sterile.
7	4 years.	,, ,,	Diplococci in exudate and in cultivations.
8	4 ,,	Recovery.	—
9	4 months.	Death; necropsy.	Diplococci in exudate; no cultivations.
10	8 ,,	,, ,,	No bacteriological examination made.
11	6 ,,	,, ,,	Diplococci in exudate and in cultivations.
12	8 ,,	Death; no necropsy.	—
13	9 ,,	Discharged *in statu quo*.	—
14	3 years, 6 months.	Recovery.	—
15	4 months.	Death; necropsy.	Diplococci in exudate; no cultivations.
16	1 year, 4 months.	,, ,,	Diplococci in exudate and in cultivations.
17	8 months.	Death; no necropsy.	—

Bacteriology.—Of the 12 cases in which a post-mortem examination took place three were not examined bacteriologically; in two cases the post-mortem examination was performed in my absence, and in the third the brain was hardened and preserved. In the remaining nine cases the meningeal exudation was examined by means of films of lymph taken from the collection at the base of the brain and from the lateral ventricles. An intracellular diplococcus was discovered in eight of these cases; in the ninth no organism of any description could be found. In all cases the diplococcus appeared to be the only organism present; no streptococci or pneumococci were discovered. In six cases cultivations were made on agar-agar and glycerine-agar media. Five of these proved successful, the diplococcus growing, however, scantily in all cases. The unsuccessful case was that in which microscopical examination had shown an absence of organisms; in this instance nothing grew upon the culture media. In Case 4 a lumbar puncture was performed during life, and the fluid was inoculated upon gar-agar. This gave a fairly typical growth of the diplococcus. Thus out of the nine cases examined in eight the diplococcus intracellularis was demonstrated in the exudate, and in five of these it was found in cultivations, being present in pure culture in four; the fifth was, I believe, accidentally contaminated, for it contained, besides typical colonies of the diplococcus, large growths of staphylococcus pyogenes aureus and streptococcus pyogenes.

Vitality.—The vitality of the organism in the meningeal exudation would seem to be very variable. Thus in one patient dying on the forty-second day of the disease it was found very scantily in the coverslips examined and grew in the culture-tubes in very few colonies, while in two other patients dying respectively about three months and eight months after the onset of the disease it was found in considerable profusion; in the second of these, however, it is possible that the patient died in a second attack, or a recrudescence of the original infection. In cultivations the organism did not live; in one case sub-cultures made from a 48-hours growth proved quite sterile, and in no case did there appear to be any vitality left in the colonies at the end of a week. Looking at Dr. Still's results I feel sure that mine are not trustworthy in this point, probably because the inoculations were not made with sufficient freedom; further, I have not employed a blood-agar medium, on which he found the organism to persist longest. In Case 4 the fluid obtained by lumbar puncture during life gave a fair growth of the organisms, but at death 15 days later there were very few colonies indeed in the cultivations, and I had to hunt through several films before discovering typical diplococci, so that the organism had apparently lost much of its vitality between the twelfth and the twenty-eighth days of the disease.

This question of the vitality of the organism is, of course, one of great importance, for Weichselbaum's diplococcus isolated from epidemic cerebro-spinal cases was stated by its discoverer to be possessed of extremely limited powers of endurance, while Dr. Still found that the diplococcus of posterior basic meningitis lived an average of three weeks, and, as he remarks, this difference is by far the most striking. In other points the two observers for the most part agreed. It is therefore interesting to note my failure in these cases to obtain a prolonged vitality and also Netter's statement, quoted from Dr. Osler's Cavendish Lecture of 1899, that Weichselbaum's diplococcus has been found living at the end of 60 days. On the whole it seems most probable that the organisms are practically identical, though apparently with slightly different qualities according as they occur in epidemics or sporadic cases.[1] I have had no opportunity of seeing any epidemic of the disease, though one of the series of cases in its clinical aspect approached more nearly to the epidemic type, as described by Osler, than to the chronic disease with which I am familiar.

Clinical features.—In this series 10 of the cases occurred in males and seven in females. Of the age at which the disease made its appearance it is noticeable that four of the 17 patients were in their fourth year and over, a much larger proportion than Sir Thomas Barlow and Dr. Lees found. In their series of 110 cases seven only were as old. It may also be observed here that these four cases all gave rise to considerable difficulty in diagnosis, and that two of them were cases that recovered, so that absolute proof of the correctness of the diagnosis is wanting. Excluding these four the average age of the patients attacked was nine months, the youngest being just three months old. The previous history and the family history of these cases bear out the statement of Barlow and Lees that there is no other affection which bears any constant relation to this disease. In the majority of cases it appears without any previous ill-health either in the patient or in those who surround him.

As regards the first symptom of the disease this series corresponds exactly with the analysis given by Sir Thomas Barlow and Dr. Lees. Vomiting occurred first in nine cases, convulsions in four, and head retraction in three. Bulging of the fontanelle is noted early in the course of the illness in six cases. Retraction of the head is one of the cardinal signs of the disease, and sooner or later appears in all cases. It occasionally, however, appears too late to be of much service in diagnosis and in two of these cases, Cases 1 and 5, it was not noted at any time. Further, there has been in the hospital during the period of time covered by this series a boy, aged 10 months, in whom retraction of the head to an extreme degree was constant, though at the necropsy there was no trace whatever of meningitis. It is also worthy of remark that this symptom was well marked in only one of the four older cases, whereas it was obvious in all but one of the remainder.

Ocular symptoms.—Strabismus was a fairly frequent and early symptom, as also was nystagmus, occurring in about half the cases; but the chief ocular symptoms, with one exception to be mentioned later, are to be sought by means of the ophthalmoscope, for 13 of these 17 cases showed definite changes in the fundus. In five cases there was pronounced swelling of the optic discs, which was very easily recognised and indeed could not be overlooked; in one of these there were in addition several flame-shaped retinal hæmorrhages. In four cases there was a peculiar grey discolouration of the optic disc, which appears to me to be peculiar to this disease. At any rate, I have never met with anything similar in any other illness. It is not atrophy, I venture to think, for the retinal vessels retain their normal size, and the disc does not appear hollowed, but it has an unusual opaque grey appearance quite unlike a normal disc. In the remaining four cases the changes were

[1] Since the above was written I have been successful in maintaining the vitality of the diplococcus up to the thirty-eighth day, at which period subcultures proved sterile.

such that I have not ventured to call them papillitis, yet they are of that nature. In looking at these eyes with the ophthalmoscope regularly week by week, the optic discs which were at first absolutely normal became slowly more and more obscure, and in focussing accurately one could see that at the edge the finer vessels took a sharp curve, so that there was obviously some swelling, rarely more than 1 D, of the papilla, though the edge of the disc still remained distinct. This change, I believe, might easily have been overlooked if the discs had not been frequently examined.

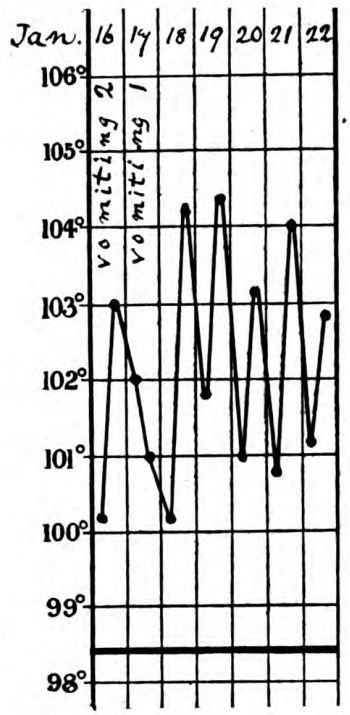
Amaurosis was noted in seven cases and was probably present in several others, but it is a symptom which is extremely difficult to ascertain with precision in young infants. The other important ocular symptom mentioned previously is retraction of the upper eyelid which occurred in seven of these cases. It is extremely characteristic of posterior basic meningitis, and, so far as I have been able to observe, extremely rare in any other form of meningitis. It is certainly very uncommon in tuberculous meningitis, for I can neither recollect nor find any record of its occurrence in the 26 cases of that disease which have occurred in the given period. Indeed, one might venture on an antithesis: in tuberculous meningitis there is photophobia and closure of the eyes, while in posterior basic meningitis the eyes are widely open with retracted upper lids as if seeking the light.

The other chief features of the disease—vomiting and progressive emaciation—were present in all cases, though in six cases the vomiting was slight. The emaciation was always pronounced and rapid even in the two patients who recovered, and apparently it is largely independent of any vomiting or diarrhœa that may be present, for in cases where these are absent the emaciation still progresses steadily. One month's duration will reduce the patient to mere skin and bone, in striking contrast to cases of tuberculous meningitis, which are not infrequently found possessed of considerable quantities of subcutaneous fat at the necropsy. The remaining features of the disease are with one or two possible exceptions those which are common to nearly all forms of meningitis; and though in nearly all of them there is some special point, which I believe to be to a certain extent indicative of the special form, yet these points are too uncertain to permit of any stress being laid on them. Thus there are the "champing" movements of the lips and jaws described by Sir Thomas Barlow and Dr. Lees, which are certainly more commonly seen in this form of meningitis than in any other, and yet are sufficiently often observed in tuberculous meningitis to render them devoid of any diagnostic significance. Hyperæsthesia of the skin, on the other hand, is distinctly more common in the tuberculous than in the posterior basic form. There are, however, two phenomena observed in the latter which do not, I believe, occur in the former. These are hydrocephalus and a joint affection. Hydrocephalus, of course, in a pathological sense is present in most cases of meningitis of whatever form, but in a few cases of posterior basic meningitis the head enlarges progressively and post mortem there is a very considerable excess of fluid. In only one, however, of the present series was there a clinical hydrocephalus. Careful measurements of the size of the head from time to time failed to show any enlargement. The joint affection has been fully investigated by Dr. Still who cultivated from the pus in the joints the same diplococcus which he found in the brain. None of the present series have had any joints involved.

It will be obvious from the foregoing brief summary of the symptoms that the diagnosis in the majority of cases is easy. The sudden onset, the characteristic head retraction, the chronic course, and the progressive emaciation render the disease, as a rule, easily recognisable. Yet of the present series seven of the cases presented difficulties more or less serious. The patient in Case 1 was supposed at one time to have a cerebral tumour, a diagnosis supported by the extensive optic neuritis and retinal hæmorrhages, combined with the absence of any head retraction. The necropsy showed the typical lesions of posterior basic meningitis and no trace of tumour formation. Case 5 was diagnosed confidently as a case of tuberculous meningitis, and the discovery of the true condition at the post-mortem examination was a surprise. Typhoid fever was suspected in Case 7 and Case 12, and in Case 4, Case 8, and Case 14 the diagnosis was delayed for some time. Three of these cases are worthy of a little further consideration.

CASE 7.—A girl, aged four years, previously in good health, was taken suddenly ill with headache and a "fit" on Jan. 8th, 1900. On the 9th she had a smart epistaxis. On admission on the 16th she was feverish, irritable, and decidedly ill, but apart from a slight stiffness in the cervical muscles had no sign of disease. Her temperature chart (Chart 1) was

CHART 1.



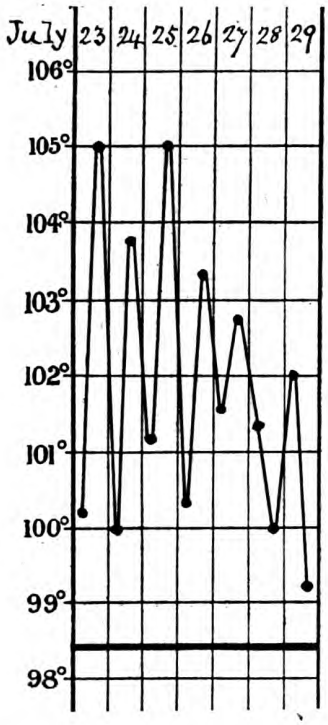
remarkably unlike that usually associated with posterior basic meningitis, in which disease, as a general rule, the temperature remains below 100° F., with occasional rises at very irregular intervals. It was not till two days before her death that the diagnosis was made with any certainty, though retraction of the eyelids had been noted on Feb. 2nd, a fortnight earlier. In this case typhoid fever was suspected, but repeated trials of Widal's serum reaction all proved negative. The course of the fever, the absence of any positive physical signs of disease, and the age of the patient all, I venture to think, combined to make earlier diagnosis impossible.

With this case Case 4 is comparable. This was a girl, aged nine months, who was brought to the hospital for diarrhœa and vomiting which began on July 16th, 1900. She was admitted on the 23rd and the only objective sign of disease was a slight stiffness of the neck and some retraction of the head, which had completely disappeared three days later. In this case the results of a cultivation made from the fluid obtained by lumbar puncture established the diagnosis at the end of the first week; but without this aid it would not have been possible to be sure of one's ground until the middle of the following week when the clinical picture was characteristic. The temperature chart (Chart 2) has at least a family resemblance to that of the preceding case.

The third case was, if possible, still more puzzling. A boy, aged eight months, was taken suddenly ill with "convulsions" on Dec. 31st, 1899. These were repeated on Jan. 1st and 2nd. He was admitted on Jan. 3rd and no diagnosis was made till near the end of the third week. Typhoid fever was again suggested and several other diagnoses were discussed. The child had no objective signs of disease except the fever and a slight rigidity of the cervical muscles. At the end of the third week, however, he presented the typical retraction of the head, and the subsequent course of the illness confirmed the diagnosis then made. His temperature chart (Chart 3) again illustrates a wide departure from the ordinary course of the disease.

As regards the temperature in these cases it is significant that they were all three admitted before the end of the first week of the illness. The majority of the cases come to the hospital much later, and it is possible that if they could be seen at an earlier period such charts would be far more common than they are at present. It is particularly interesting to compare the first two of these charts with that given by Dr. Osler in his Cavendish lecture, numbered Chart 4. That was obtained from one of the cases occurring in an outbreak of epidemic cerebro-spinal meningitis and the resemblance to the type here illustrated is extraordinarily close.

CHART 2.

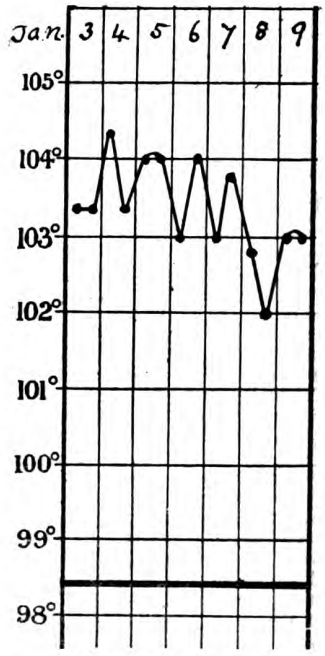


CASE 8.—This case was that of a boy, aged four years, and ended in recovery. He was admitted with a history of a sudden onset of vomiting and head retraction nearly a month previously. He had slight retraction of the head, well-marked optic neuritis, hyperæsthesia of the skin, and retracted abdomen with a well-marked tâche. He was quite conscious and even intelligent. His temperature was intermittent with a range of from four to five degrees for a week and then became very unsteady. Towards the end of the third week it became normal and he went out a few days later quite well. I have seen this patient three months later; he is very healthy and his intelligence seems in no way impaired. He still has a slight blurring of the optic discs, but there is no swelling, no loss of vision, and no evidence of atrophy.

The patient in Case 14, the other patient who recovered, has, I am afraid, left the country. He came over with his father from South Africa soon after the outbreak of the war, was suddenly taken ill with "convulsions" about Jan. 30th, 1900, and was admitted three weeks later. This case corresponded almost exactly in its clinical symptoms to the description given of epidemic cerebro-spinal meningitis, but was, so far as we were able to learn, quite an isolated case. He had irregular pyrexia, marked head-retraction, slight strabismus, marked hyperæsthesia, great irritability, and much tremor. He was never wholly unconscious, but he always knew his relations and even made efforts to speak to them. He had marked optic neuritis also and was the only patient in any one of these cases who had any skin eruption, having herpes covering both legs, portions of the thighs, and the lower part of the abdomen. His temperature came down rather suddenly to normal in the sixth week of his illness and remained there. The boy was discharged quite well at the end of the ninth week.

Before leaving the question of the diagnosis of the disease there are a few negative points to be mentioned. Blood-counts were made in several of the cases and in the early stages of the disease there was always a considerable leucocytosis; in the more chronic forms the white corpuscles have regained their normal standard. Of the different forms of meningitis the posterior basic form certainly in its active stage gives rise to a higher leucocytosis than tuberculous, but I have not yet had an opportunity of comparing it with pure pneumococcic meningitis. Kernig's sign, the rigid contraction of the flexors of the thigh, is, I believe, present in nearly all cases of posterior basic meningitis It is, however, present also in cases in which there is no cerebro-spinal meningitis. I have recently found it well marked in two cases of lateral sinus thrombosis in which post mortem there was no meningitis at all. Lumbar puncture was used only once and then as a diagnostic measure. It is, to judge from the reports of our American and Canadian visitors, largely employed as a therapeutic measure in the United States and Canada, and with success. Osler, however, found that his epidemic cerebro-spinal cases derived no benefit from the procedure, and his experience seems to coincide with that of others. It is obviously quite useless late in the disease, and the only time at which removal of the cerebro-spinal fluid would appear to have any possible benefit is during the first week. It is possible that if tried only in cases which have not yet passed the seventh day from the onset the results may be more encouraging, and at any rate in such a disease any means of benefit is worthy of trial. All treatment of other kinds seems quite inefficacious, and pending the discovery of an antitoxin, lumbar puncture in a selected class of cases seems to hold out some faint promise. At the same time, it must be admitted that the pathological lesions found at the post-mortem examination are usually of such a character and in such situations that drainage by the spinal canal seems a wholly futile measure.

CHART 3.



In conclusion, it will be obvious from the foregoing account that posterior basic meningitis presents a considerable variety of clinical characters. In the majority of the cases which occur in children of under 12 months it is a very distinct and easily recognisable disease, but this rule does not hold invariably. On the other hand, a disease occurring in older children with many of the same symptoms and possessing the same pathological and bacteriological features, yet has certain characteristics which make it resemble very closely epidemic cerebro-spinal meningitis. Are the two identical, and are the special features of the epidemic disease

due merely to an exaltation of virulence in the organism? On the whole, and judging from the cases which I have seen, which unfortunately include no epidemic cases, I think the answer must be in the affirmative. The clinical symptoms obviously differ considerably without any corresponding alteration in the pathological or bacteriological features, and the main differences between the organism of Weichselbaum and the organism found in these cases in England seem to be quite insufficient to establish them as distinct species. If this view is accepted we shall henceforth look upon posterior basic meningitis as a disease comparable in certain points to pneumonia, which, while as a rule a sporadic disease, occasionally presents itself in epidemic form. The causes which determine this variation are in both cases still to be discovered. I have to thank Dr. Lees, Dr. Penrose, and Dr. Garrod for permission to make use of the cases which have occurred in their respective wards; and I also owe thanks to Dr. Still for much help and many suggestions.

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PRIMARY SARCOMA OF THE STOMACH

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DURING the last few years the opinion has been steadily gaining ground that many of the morbid growths of the stomach which have hitherto been regarded as carcinomata are really sarcomatous in character and that the clinical description of malignant disease of the viscus requires to be revised from a new pathological standpoint. This opinion is founded partly upon the discovery that many specimens which are described in museum catalogues as examples of carcinomatous or fibroid tumours present the characteristic features of round-cell or spindle-cell sarcoma when examined with the microscope, and partly upon the large number of cases of sarcoma of the stomach which have been published since special attention was directed to the subject. Thus, Perry and Shaw found four instances of sarcoma among 50 specimens of malignant disease of the stomach, while in the course of 23 consecutive necropsies upon persons who had died from primary neoplasms of the organ I observed two well-marked examples of round-cell sarcoma. It may also be noticed that whereas Schlesinger in 1897 was only able to collect 30 cases of the disease, in November, 1900, the number of published cases exceeded 60, of which 53 possessed sufficient details to permit of analysis. Although it is impossible to make any absolute statement as to the relative frequency of the disease it is probable the sarcomata constitute from 5 to 8 per cent. of all primary neoplasms of the stomach.

Gastric sarcoma may appear either as a primary growth or as a secondary deposit. The former is by far the most common if exception be made of those not infrequent cases where the organ is involved by a lympho-sarcoma Six varieties of the primary affection have been described up to the present time—namely, round-cell sarcoma, spindle-cell sarcoma, fibro-sarcoma, myo-sarcoma, myxo-sarcoma, and angio-sarcoma. Of these the spindle-cell and the fibro-sarcomata are probably identical, while the single example of myxo-sarcoma appears to have been originally a case of the round-cell type which had undergone degeneration.

MORBID ANATOMY.

1. *Round-cell sarcoma*.—Round-cell sarcoma, or as it is often termed "lympho-sarcoma," is the variety most usually met with and was observed in 33 out of 53 cases, or in about 62 per cent. of the entire number. As a rule it presents itself in the form of a dense infiltration of the pyloric third of the stomach, which transforms the coats of this portion of the viscus into a homogeneous, yellowish-white mass of rigid consistence and considerable thickness. The peritoneal aspect is often covered with recent lymph, while the inner surface may be slightly uneven or distinctly nodular and is occasionally superficially ulcerated. If the pylorus is greatly thickened its orifice may be partially stenosed, as in cases of spheroidal-cell carcinoma, but as a rule the rigidity of its tissues renders it patent and the valve incompetent rather than contracted. The growth gradually shades off as it approaches the centre of the organ, but it is often prolonged for some distance along the curvatures in the form of thick striæ or bands. In almost every instance, whether the pylorus is stenosed or not, the cardiac portion of the stomach is dilated and its mucous membrane shows signs of chronic inflammation. In about one-sixth of the cases the entire organ was infiltrated by the new growth, which also tended to invade the first part of the duodenum and the lower end of the œsophagus. The walls of the viscus were greatly thickened and its cavity contracted, and its inner surface was sometimes extensively ulcerated. In only two instances out of the entire number did the disease appear as a circumscribed tumour in the wall of the viscus, with secondary nodules in the surrounding mucous membrane. On microscopical examination the disease is found to commence as a round-cell infiltration of the sub-mucosa, which subsequently spreads into the muscular coat through its interstitial connective tissue and finally destroys and replaces the contractile fibres. At first the mucous membrane is merely stretched by the subjacent growth and atrophies from pressure, but at a later stage it is often invaded by the disease and may undergo ulceration. Schlagenhaufer and Redtenbacher have shown that a diffuse infiltration of round cells in the mucous membrane may extend far beyond the apparent confines of the disease. Like the other forms of sarcomata, this variety is prone to undergo softening and degeneration, with the formation of small cavities in its substance or perforation of the wall of the stomach.

2. *Spindle-cell or fibro-sarcoma*.—This comes next in frequency of occurrence and constituted 12 out of the 53 cases, or 22 per cent. It presents itself as a round or oval circumscribed tumour of the wall of the stomach and it is usually situated near the great curvature. As it grows it projects more and more beneath the serous coat and exerts so much traction upon its point of origin that it not only drags the whole stomach downwards but often acquires a pedunculated appearance. These tumours sometimes grow to an enormous size (12 lb., Cantwell), and may fill the greater part of the abdominal cavity. When small they are smooth and firm on section, but as their bulk increases they often become knotty and irregular in shape, and their tissue undergoes cystic degeneration. These latter changes are seldom accompanied by the formation of adhesions, but occasionally give rise to perforation of the stomach (Ewald).

3. *Myo-sarcomata*.—These are much rarer than either of the preceding, only five examples having been recorded up to the present time. They form smooth or slightly nodular masses in the substance of the gastric wall near the great curvature and frequently show signs of cystic degeneration. Like the fibro-sarcomata, they may attain enormous dimensions, Brodowski having met with one which weighed 12 lb.

4. *Angio-sarcoma*.—This has been recorded twice (Bruch and Kosinski). In one case it formed a tumour of the size of an infant's head with many cysts due to interstitial hæmorrhages scattered through its substance.

Each variety is apt to give rise to secondary growths in organs more or less remote from the primary disease, but the round cell is by far the most malignant. Thus out of 23 cases of the latter in which full details are given, 16 or 70 per cent. are stated to have exhibited metastases. In almost every instance the lymphatic glands immediately connected with the stomach were enlarged and in nearly 50 per cent. they were sarcomatous; while in a few cases the retro-peritoneal, mesenteric, and even the mediastinal, cervical, and supra clavicular glands were affected. One or both kidneys presented secondary deposits in 28 per cent.; the liver, ovaries, pancreas, adrenals, and omentum each in 14 per cent.; and the lungs, diaphragm, pleuræ, œsophagus, intestines, and mesentery in about 7 per cent. of the cases. It is also important to notice that nodules of growth were present in the skin of the abdomen, thorax, or back in about 12 per cent. of the entire number. The spindle-cell variety was accompanied by metastases in the perigastric glands in 37 per cent. of the cases, and in the skin, liver, and diaphragm in about 12 per cent. of the cases, while in two out of the five cases of myo-sarcoma secondary growths were found in the liver.

A further study of the morbid phenomena of gastric sarcomata brings to light several other points of distinction between them and the carcinomata which may prove of service in their clinical differentiation. Owing to the infrequent infection of the peritoneum there is usually a notable

absence of the elongated and nodular epigastric tumour which is so often present in cancer of the stomach, owing to infiltration and adhesion of the great omentum. Again, in about 15 per cent. of the cases of round-cell sarcoma the spleen is so much enlarged as to project below the costal margin. This increase in size is not due to the existence of a morbid growth in its substance, but to congestion and hyperplasia of the splenic pulp—a condition which never occurs in carcinoma. Kundrat observed enlargement of the tonsils with occasional swelling and ulceration of the follicles of the tongue, and laid considerable stress upon their diagnostic significance. Perforation of the stomach followed by general peritonitis occurs far more often than in cases of cancer (11 per cent.), owing probably to the frequent softening of the morbid growth and to the absence of protective adhesions. On the other hand, localised perigastric abscess has not been observed up to the present. Death from hæmorrhage has only been recorded once (Robert), and in one instance the disease gave rise to a gastro-colic fistula (Chernjaeff). True carcinoma was twice found associated with round-cell sarcoma.

Secondary sarcomata of the stomach are usually lympho-sarcomatous in their nature and have been observed as the result of disease in the retro-peritoneal glands (Maier, Perry), cæcum (Beck), neck, pharynx, gums (Kundrat), rectum, superior maxilla, and in cases of general sarcomatosis (Malmsten, Carry). When the mischief spreads by contiguity the pyloric region is often affected in the same manner as in the primary affection, but when the original growth is more remotely situated the metastases usually appear as rounded tumours or thick wheals in the submucous tissue. These deposits often soften and ulcerate and may even undergo partial cicatrisation.

ETIOLOGY.

At present there are few facts that bear directly upon the etiology of the disease. The round-cell sarcoma seems to affect both sexes with equal frequency and to develop at any age. Nevertheless, there is a distinct tendency for it to occur at an earlier period of life than carcinoma, since the mean age of 29 cases was only 34 years. The spindle-cell variety, on the other hand, is five times as frequent in women as in men, the average age of the collected cases at the time of death being 51 years. The one recorded by Finlayson of sarcoma in a male child, three and a half years old, appears to be an exception to this rule, but the description of the microscopical features of the tumour is somewhat vague. The myo-sarcomata were usually met with in men in the prime of life. That a sarcoma, like carcinoma, is prone to attack scar-tissue in the stomach is well illustrated by a case published by Brooks, where a round-cell growth developed in the cicatrix of an old bullet wound of the lesser curvature. In a case which came under the writer's observation a large secondary melanotic growth was found in the base of a simple chronic ulcer situated near the pylorus.

SYMPTOMS.

The general symptoms of sarcoma of the stomach are essentially the same as those which accompany other forms of malignant disease. One of its earliest and most striking features is progressive emaciation with failure of physical power. This is usually most conspicuous in young persons and in cases where the growth causes early contraction of the pyloric orifice. When the neoplasm only affects a comparatively small portion of the viscus, as in the spindle-cell and myo-sarcomata, the loss of flesh is chiefly observed in the later stages of the complaint or after ulceration has taken place. Anæmia is always present and gradually becomes profound, but if there is continued fever or repeated hæmorrhage its progress is very rapid. It is characterised by a great diminution both of hæmoglobin and red corpuscles and in one of the cases recorded the colouring matter only amounted to 15 per cent. of the normal. Slight leucocytosis may sometimes be observed, but the increase of white corpuscles which normally occurs after meals (digestion-leucocytosis) is usually absent. As a rule the appetite is greatly diminished and there is a special distaste to meat, but occasionally the desire for food continues unimpaired throughout (Rasch, Baldy) or only declines during the last few weeks of life (Maass, Fleiner); thirst varies with the severity of the anæmia. When the neoplasm grows very rapidly or its tissues undergo degenerative changes the patient often exhibits slight but continuous pyrexia (from 99° to 101° F.). Albuminuria occurs in about one-sixth of the cases and is usually dependent upon secondary growths in the kidneys. If vomiting is a prominent feature of the case the bowels may be confined, but in many cases of the round-cell type diarrhœa is a noticeable feature.

With regard to the local symptoms which accompany sarcoma of the stomach it should be noticed in the first place that they may be entirely absent during the whole course of the disease. In the case related by Baldy the appetite continued good and there was no complaint either of pain or vomiting, although practically the entire stomach was involved in an enormous tumour. In another instance (Cantwell) where the growth weighed 12 pounds the digestive functions were apparently normal, while in that recorded by Robert the first and only indication of an extensive growth was an attack of hæmatemesis. In about 76 per cent. of all cases abdominal pain is experienced during some period of the disease. It varies greatly, however, both in its character and severity. As a rule it does not amount to more than a sense of fulness and oppression after meals such as ensues from gaseous distension of the stomach, but in 15 per cent. of the recorded cases it was described as having been severe and increased by the ingestion of food. It is interesting to observe that in most of these the body of the stomach was either extensively infiltrated or there was a considerable invasion of the pancreas or retro-peritoneal glands. The solid tumours (fibro- and myo-sarcomata) are more often accompanied by sensations of weight or dragging than by actual pain.

Vomiting is usually a later symptom unless the pylorus is contracted. At first it occurs at intervals, but as the stomach becomes dilated it is repeated more frequently and the ejecta are found to present the usual features which characterise stagnation and decomposition of the food. Vomiting occurring soon after meals and preceded by pain usually indicates ulceration of the growth, while the attacks of incessant retching, attended with the expulsion of mucus, which are apt to appear from time to time, and are often so severe as to preclude the administration of food, result from secondary inflammation of the mucous membrane. In the case of the large solid tumours vomiting is a less frequent phenomenon (48 per cent.) and seldom appears until after the lapse of from five months to seven months. Fæcal vomiting is usually an indication of a gastro-colic fistula.

Hæmorrhage from the stomach is seldom a prominent symptom of round-cell sarcoma owing to the comparative infrequency of ulceration of the growth. It is probable, however, that capillary oozing is of constant occurrence, since the gastric contents removed by a tube are often found to be mixed with coffee-ground material, while careful examination of the stools may demonstrate the existence of altered blood (Schlesinger). In the spindle-cell variety of the disease repeated attacks of hæmatemesis were observed in nearly half the cases, and in two instances a severe hæmorrhage was the first symptom to attract attention.

PHYSICAL SIGNS.

A palpable tumour connected with the stomach is an inconstant sign of round-cell sarcoma and was only observed in about 30 per cent. of the recorded cases. In most instances it is produced by a local thickening of the gastric wall in the region of the pylorus, and was described as a round or oval mass, occupying the right hypochondriac or epigastric region, smooth on the surface, somewhat tender upon pressure, and often freely moveable. Rapid increase in size can sometimes be observed. In other instances the tumour consists of the entire stomach and more than once the concomitant enlargement of the spleen has been mistaken for a malignant mass. In the fibro- and myo-sarcomata a tumour is almost always present and is often so large as to occupy the greater part of the abdominal cavity. If the growth is situated near the great curvature it is usually detected in the umbilical left hypochondriac or lumbar region, where it forms a smooth, firm, painless mass which is dull on percussion and freely moveable in all directions. This latter peculiarity affords a marked contrast to the behaviour of a carcinomatous growth in the same position, which is invariably fixed by extensive adhesions to the neighbouring viscera. In two cases where the tumour was attached to the posterior wall of the stomach it filled the lesser sac of the peritoneum and was consequently covered by the stomach and transverse colon, but being somewhat pedunculated it could easily be moved from side to side.

Dilatation of the stomach can be detected in every case of sarcoma of the pylorus, and when the orifice is contracted peristaltic movements of the enlarged viscus are usually visible. When the organ is affected by diffuse infiltration its cavity is contracted and its outlines are obscured by the transverse colon.

Metastatic deposits in the skin constitute an important feature of the disease. As a rule they appear in the form of one or two small nodules in or around the umbilicus, but occasionally they are very numerous and are scattered all over the abdomen, chest, and back. They vary in size from a millet seed to a small bean, and at first are freely moveable in the subcutaneous tissue; but after a time they become adherent to the skin and may even give rise to ulceration. Enlargement of the supra-clavicular and cervical glands is rarely observed, while sarcomatous infiltration of the tongue is still less common. In one case a correct diagnosis was made by the discovery of a secondary growth in the rectum. Generalisation of the disease is occasionally accompanied by the symptoms of purpura (Redtenbacher).

Chemical examination of the contents of the stomach affords similar results to those met with in gastric cancer. Free hydrochloric acid disappears at an early stage of the complaint (Fleiner, Schlesinger) and fermentation of the food often produces an excess of lactic acid (Dreyer, Maass, Hammerslag). Sarcinæ may or may not be present and Schlesinger was able to demonstrate the presence of the Oppler-Boas bacillus which is supposed to occur only in cases of cancer. The sulphocyanide of potassium in the saliva gradually diminishes as the disease progresses and finally disappears about one month before death.

DURATION AND COMPLICATIONS.

It is difficult to estimate the exact duration of a disease which commences so insidiously and is often unaccompanied by definite physical signs for many months. It would appear, however, from a study of the recorded cases that although the round-cell sarcomata often run their course in three or four months the average duration of the disease is about 15 months; while in the case of the spindle-cell and myo-sarcomata life is prolonged on the average for two years and eight months. It will be observed that in both instances the duration of the disease is greater than that of cancer, a result which probably depends upon its lesser malignancy and its lesser liability to produce ulceration of the mucous membrane and stenosis of the pylorus. Death usually occurs from exhaustion and is often preceded by a semi-comatose state lasting for several days. Perforation of the stomach followed by general peritonitis occurs in about from 10 per cent. to 12 per cent. of the cases of round-cell sarcoma and may even take place in the spindle-cell form (Ewald), but owing to the absence of adhesions a perigastric abscess is exceptional. Fatal hæmorrhage is very rare. In two instances general sarcomatosis tended to shorten the period of life, while in one an attack of tetany, similar to that met with in cicatricial stenosis of the pylorus, was immediately responsible for the fatal termination (Fleiner). Excessive ascites, albuminuria, portal thrombosis, and pneumonia all accelerate the natural course of the disease.

DIAGNOSIS.

So far as the recognition of the malignant nature of the disease is concerned the sarcomata do not offer any particular difficulty. The intractable character of the gastric symptoms, coupled with the progressive emaciation, physical debility, and cachexia, indicate a profound disturbance of the processes of digestion and assimilation, while the discovery of a growing tumour connected with the stomach or of metastases in other viscera demonstrates at once the existence of a neoplasm. A more interesting question is the clinical differentiation of sarcoma and carcinoma. A diagnosis of round-cell sarcoma of the stomach may often be made by attention to the following facts:—1. The disease usually occurs before 35 years of age, so that the younger the patient the greater the probability that the malignant affection is sarcomatous in character. 2. In many cases there is slight but continuous pyrexia accompanied by rapid and profound anæmia, while in carcinoma fever is always absent during the early stages of the complaint and the cachexia much more gradual in its development. 3. Simple enlargement of the spleen is by no means infrequent, but is never met with in cancer unless the organ is involved in the growth. 4. According to Kundrat the tonsils are apt to enlarge and the follicles upon the sides of the tongue may become swollen or ulcerated. 5. Secondary deposits in the skin occur in a notable proportion of the cases and permit of excision and microscopical examination. It should be remembered, however, that sarcomatosis has been met with in true cancer of the stomach (Leube). 6. A large nodular tumour due to infiltration of the omentum or a greatly enlarged liver with secondary growths in its substance are rarely met with. 7. Persistent albuminuria is often observed in sarcoma but is exceptional in cancer. 8 The discovery of pieces of morbid growth in the vomit renders the diagnosis certain (Riegel, Westphalen).

The spindle-cell and myo-sarcomata are chiefly characterised by their comparatively slow growth, the smooth, firm, and moveable tumour, the frequent absence of pain, vomiting, and anorexia, and the tendency to repeated hæmorrhage.

TREATMENT.

Many of the recorded cases have been subjected to surgical treatment with considerable success so far as the immediate objects of the operation were concerned. Török, Dock, Schopf, and others have removed considerable portions of the stomach affected by the round-cell growth, and in at least one case (Schopf) there was no recurrence at the end of a year. The solid tumours are especially favourable for extirpation, as they are often pedunculated and involve a comparatively small area of the gastric wall. Hartley removed a large fibro-sarcoma and Kosinski a cystic angio-sarcoma with apparent success, while in Cantwell's case the excision of spindle-cell sarcoma weighing 12 lb. gave great relief to the patient for eight months. If one may judge from the morbid anatomy of the disease the surgical treatment of sarcomata of the stomach will prove far more successful than can ever be expected in carcinoma, but it is too early yet to discuss the prospects of a permanent cure.

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Devonshire-street, W.

FOREIGN BODY IN THE ABDOMEN.

BY ERNEST H. ELLISON, M.A., M.R.C.S. ENG., L.R.C.P. LOND.

As illustrating the importance of the well-known axiom that all instruments and sponges should be counted prior to performing operations in the interior of the abdomen I append the following case which occurred in my practice recently.

A man, aged 49 years, sent for me in consequence of severe pain which he referred to the region of the umbilicus. This on examination proved to be due to the presence of a foreign body which protruded through the integuments about three inches below and to the left of the umbilicus. All efforts to remove the foreign body without a cutting operation—to which the patient refused his consent—being futile I succeeded in breaking off the most dependent portion of what on inspection presented the appearance of being the blades

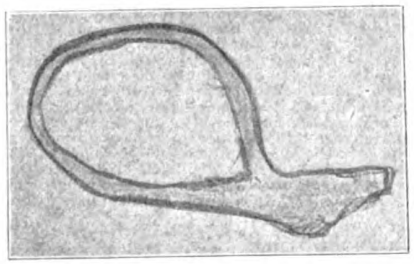
of a pair of catch forceps. The button portion uniting the blades was clearly visible, one half of the blades showing what I presume to be corrosion from the action of the intestinal juices upon it, and judging from the worn and eaten appearance of the extremity of one of the blades this must evidently have occurred. The fact of a foreign body of the above description having been discovered in the situation described points to an omission on the part of some practitioner to count his instruments prior to performing an abdominal operation eight and a half years ago—this being the period of time, according to the patient, since an operation was performed upon him for an internal strangulation. The statement seems probable enough from the presence of a clearly defined scar situated above Poupart's ligament in the right inguinal region.

FIG. 1.

Shows the first part of the forceps removed. Exact size.

I may, in conclusion, add that there is every evidence of the remaining part of the forceps being still in the cavity of the abdomen; and meanwhile, in the hope that I may one day obtain the patient's consent to remove the shaft and handles of such an instrument, I annex a photograph showing the exact size of the portion in my possession.

FIG. 2.



Shows the second part of the forceps removed. Exact size.

P.S.—Since forwarding to you the above article I have been fortunate in obtaining last week another portion of the instrument of which I inclose a rough sketch (Fig. 2).

Syston, Leicester.

A CASE OF CEPHALHÆMATOMA.

BY HUGH HOWIE BORLAND, M.B., C.M. GLASG., D.P.H. CANTAB.,

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ON April 23rd, 1900, I was called to the third accouchement of a woman, aged 33 years. The first labour pain came on at 10.30 P.M.; two pains ruptured the membranes with the escape of liquor amnii. On my arrival two hours later I found the os fully dilated. There was no pelvic contraction or deformity. Presentation was first cranial. One strong pain set in bringing the head right on to the perineum. Forceps were not used. The labour (two and a half hours) was rapid but easy throughout. The child cried lustily when born. I saw the infant washed and it looked natural and healthy. The scalp showed no caput succedaneum or other evidences of pressure. The shape and size of the head appeared normal in every way and with no trace of injury. The nurse, eight hours later, however, observed that the head had become swollen on both sides. I found next day a somewhat rounded circumscribed swelling over the right parietal bone raised up at and bulging over the lambdoidal suture posteriorly and limited anteriorly by the fronto-parietal suture. The elevated bulk of the tumour was over the posterior and superior angle of the parietal bone. Over the left parietal region was found another swelling smaller, more diffusive, less elevated, and not circumscribed. On the second day the child's face was pale and waxy, the lips and conjunctivæ were anæmic, and the skin was devoid of the newly born healthy rosy colour. The two swellings had still further increased in size, the head presenting a characteristic bicornate square appearance from the superimposed tumours which occupied the greater part of the two parietal bones respectively. The right tumour exceeded the left in length by one and a half inches. Both swellings were fuller and more rounded at the outer aspect with a gradual symmetrical tapering flatness towards the sagittal suture, giving rise to a V shaped depression running antero-posteriorly. The scalp area, normally situated over the posterior fontanelle, was deviated fully one inch outwards and forwards; neither the lambdoidal suture nor the posterior fontanelle could be demarcated. The right tumour had a reddish tint with no discolouration; it was slightly tense, rounded, circumscribed, and fluctuant, not increased in size when the child cried; its volume was not diminished on pressure, nor were stupor, coma, or convulsions induced, but several occipital glands were enlarged from pressure on the lymphatics. There was also distinct protrusion of the anterior fontanelle. On the third day the presence of a bony circle could be made out at the periphery of the right tumour limiting the effusion; discolouration over this tumour had now supervened. The left tumour had no red tint and no fluctuation obtained. No bony circle was found but the tumour pitted on pressure. Icterus neonatorum developed. On the fourth day there was an extension of ecchymosis over the swelling, which was smaller, less tense, but more fluctuant. The contour of the head had assumed a more natural shape. The left tumour subsequently decreased more rapidly than the right and was at no time discoloured; the œdematous pitting suggested epicranial cephalhæmatoma while the tumour on the right was obviously sub-pericranial. On the fifth day the protrusion over the anterior fontanelle had disappeared but the sulcus in the median line was still well marked. On the twelfth day the right swelling was greatest over the parieto-temporal region and was still dark in colour and glazed. No effusion crossed the sagittal suture but the great veins were now engorged and prominent. By the eighteenth day the right tumour was only half the size it presented on the third day, measuring now five inches antero-posteriorly and transversely four inches. The left tumour disappeared entirely on the twentieth day, while the right persisted till June 2nd, 40 days after birth, when all swelling of the scalp had vanished.

During the first week the child shivered and trembled occasionally. There was no development of strabismus or paralysis. The treatment was entirely passive, and it was noteworthy that the presence of these tumours was seen to be quite compatible with the health of the child with the exception of anæmia and constipation. The child slept well and fed well. There was no elevation of temperature, no dyspnœa, and no cerebral complications. There was no history of hæmophilia, but the other children are very fair and I can only suggest that there may have been tenuity of the walls of the blood-vessels and that rupture of these occurred when a portion of the head was constricted by the os uteri and thus eventually led to the effusion of blood which I have described.

Glasgow.

FREEMASONRY.—*The Rahere Lodge, No. 2546.*—An ordinary meeting of the Rahere Lodge, No. 2546, was held at Frascati's Restaurant on Feb. 12th, W. Bro. Walter Gripper, M.B., W.M., in the chair. Bros. Hepburn and Bokenham were raised to the third degree, and Bros. Ware, Whitaker, and Beadles were passed to the second degree. A grant of 15 guineas was made to a professional brother in urgent distress, a donation of one guinea was given to the maintenance of "Our Brother's Bed" in the Home for the Dying, and a sum of 20 guineas was voted to the Royal Medical Benevolent College at Epsom, on the proposition of W. Bro. E. C. Cripps. In consequence of the much-lamented death of Her Majesty the Queen there was no banquet after the meeting, but a few members of the Lodge dined together informally.

PRIMARY CARCINOMA OF THE AMPULLA OF VATER, WITH REPORT OF A CASE PRESENTING SOME SPECIAL FEATURES OF INTEREST.

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PHYSICIAN AND LECTURER ON PATHOLOGY AT ST. GEORGE'S HOSPITAL; SENIOR PHYSICIAN TO OUT-PATIENTS, VICTORIA HOSPITAL FOR CHILDREN.

NORMALLY, before opening into the duodenum, the common bile duct and Wirsung's duct of the pancreas open into a common channel inside the biliary papilla. This short duct is called the ampulla or diverticulum Vateri. Normally its mucous membrane is rougher and more villous than that of the common bile duct, but the so-called ampulla of Vater is little, if at all, larger than the common bile duct except when pathologically dilated by an impacted gall-stone. Carcinoma may start in the mucous membrane lining this ampulla of Vater, as in the case I record in this paper. Carcinoma may spread into the ampulla from the lower end of the bile duct and possibly from the termination of Wirsung's duct. In a paper on primary carcinoma of the larger bile ducts published in 1896 I came to the conclusion that most cases of so-called carcinoma of the ampulla of Vater originated in the termination of the common bile duct;[1] later in the year R. Durand-Fardel[2] showed a specimen supporting this and adopted the same view. The clinical aspects of the two are identical and the histological structure of the growths in the two situations is the same—viz., a columnar-celled carcinoma. Their pathological effects, however, may differ; thus carcinoma of the ampulla of Vater may obstruct Wirsung's duct and so lead to cystic dilatation with fibrosis of the pancreas, while carcinoma of the termination of the common bile duct is not so likely to do this. Pic[3] regarded carcinoma of the ampulla of Vater as an aberrant form of pancreatic carcinoma corresponding apparently to the excretory type (columnar-celled) of pancreatic carcinoma described by Bard and Pic.[4] This is practically saying that carcinoma of the ampulla of Vater is carcinoma of the termination of the pancreatic duct. While admitting that carcinoma might spread to the ampulla of Vater from the termination of the common bile duct or from Wirsung's duct, Hanot[5] insisted on the occurrence of primary carcinoma starting in the lining membrane of the ampulla and has described two cases. He spoke of it as "cancer du pylore pancréatico-biliare," and instanced it as an "orificial cancer."

Primary carcinoma of the ampulla Vateri, or, as it might more conveniently be called, the choledocho-pancreatic duct, must be also distinguished from primary carcinoma attacking the mucous membrane covering the duodenal surface of the biliary papilla. Specimens of this form of duodenal carcinoma are to be found in the museums of St. Bartholomew's, Guy's, and St. Thomas's Hospitals. This lesion seems to be especially prone to lead to infective cholangitis and intra-hepatic suppuration. Carcinoma of the ampulla of Vater must thus be distinguished from carcinoma (1) of the termination of the common bile duct; (2) of the termination of Wirsung's duct; and (3) of the duodenal surface of the biliary papilla. The accompanying diagram illustrates these distinctions. Confusion may also occur between carcinoma of the head of the pancreas and primary carcinoma of the ampulla Vateri. Histologically they differ; carcinoma of the pancreas is spheroidal-celled, while carcinoma of the diverticulum Vateri is columnar-celled.

It may be difficult to decide where the growth started when the tumour has had time to spread and invade adjacent parts. Thus in some instances doubt will arise whether the tumour arose in the lower end of the bile duct, in the ampulla of Vater, or in the head of the pancreas. In forming a decision from a naked-eye examination in such cases it may be pointed out that carcinoma of the ampulla of Vater may, when of considerable size, project as a tumour through the gaping lips of the biliary papilla and be visible in the duodenum; this is not met with in carcinoma of the pancreas or of the termination of the common bile duct.

The clinical characters of primary carcinoma of the ampulla of Vater are the same as those of primary carcinoma of the common bile duct—viz., progressive jaundice and wasting, the patient finally passing into a condition of cholæmia or biliary toxæmia. It thus very closely resembles cases of carcinoma of the head of the pancreas. The only difference is that jaundice is exceptionally absent in malignant disease of the head of the pancreas. The treatment has so far been palliative except in one case where Halsted[6] successfully removed a columnar-celled carcinoma

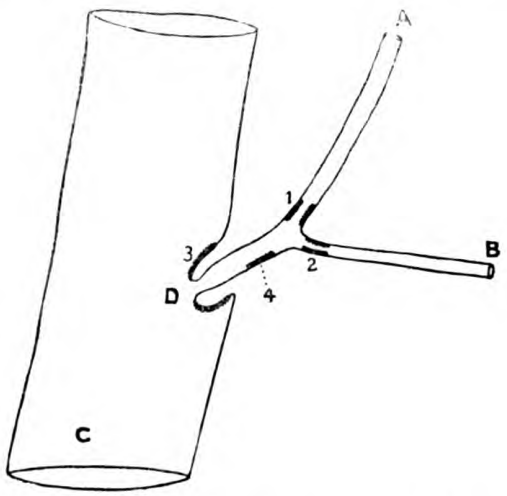


Diagram of the ampulla Vateri, showing the various situations where carcinoma may arise in relation with it and in its neighbourhood. A, Common bile duct. B, Wirsung's duct. C, Duodenum. D, Biliary papilla. 1. Carcinoma of the termination of the common bile duct. 2. Carcinoma of the termination of Wirsung's duct. 3. Carcinoma of the duodenal surface of the biliary papilla. 4. Carcinoma of the ampulla Vateri itself.

of the ampulla of Vater, but the growth recurred in the head of the pancreas and in the duodenum, and proved fatal within a year of the operation. Busson,[7] in 1890, collected 11 cases of carcinoma of the ampulla, and in 1896 Vincent-Georges,[8] a pupil of Hanot, added nine more; later in the same year Hanot[9] described another case. Of these 21 reported cases about seven are above suspicion; most of the remainder are either carcinoma of the termination of the common bile duct or of the duodenal surface of the biliary papilla. It is, therefore, a rare condition. The following case is recorded as an example of primary carcinoma of the ampulla Vateri with some special points of interest.

Carcinoma of the ampulla Vateri; dilated common bile and Wirsung's ducts; death from hæmorrhage into the dilated duct of Wirsung.—A man, aged 66 years, was admitted into St. George's Hospital under my care on July 22nd, 1900, with jaundice, pruritus, weakness, and wasting. Ten weeks previously he had considered himself quite well, jaundice then appeared quite painlessly, and a month later he got weaker and felt drowsy; six weeks after the onset of jaundice the skin began to itch. There was no history of gall-stones. When examined on admission he was deeply jaundiced and the skin showed the effects of scratching; the liver was enlarged, reaching to the fourth rib above and extending two and a half finger-breadths below the costal arch in the right nipple line, the surface was smooth, and the gall-bladder could be indistinctly felt. No splenic enlargement could be made out. There was some abdominal distension but no ascites. There was tenderness at a spot over the eleventh and twelfth ribs in the right hypochondrium. Per rectum nothing but an hypertrophied prostate could be felt. The urine contained albumin and bile but no sugar. The

[1] Medical Chronicle, January, 1896.
[2] Presse Médicale, June 17th, 1896.
[3] Revue de Médecine, 1895, p. 7.
[4] Ibid., 1898, p. 394.
[5] Archives Générales de Médecine, vol. clxxviii., p. 547, Nov. 1896.
[6] Johns Hopkins Hospital Bulletin, No. 106, January, 1900.
[7] Thèse de Paris, 1890.
[8] Thèse de Paris, No. 404, 1896.
[9] Loc. cit.

patient had been sent up to the hospital as a case of cancer of the liver; it appeared probable, however, that the growth was in the head of the pancreas. On July 25th there was some diarrhœa; on July 26th he vomited, had a rigor, and the temperature fell to 96° F., the pulse was small, and he was collapsed. The abdomen moved well and it appeared unlikely that perforation of the gall-bladder from over-distension, as in a case recorded by Coats and Finlayson,[10] had occurred. Suppuration around the gall-bladder was thought of, but his condition precluded any surgical treatment and he was given morphia. Death occurred 18 hours after the onset of acute symptoms.

At the *necropsy*, performed by Dr. W. J. Fenton, the peritoneal cavity showed no recent peritonitis but contained two parts of bile-stained fluid. A flat growth was found limited to the ampulla of Vater and occluding the orifices of both the common bile duct and the duct of Wirsung. This growth was not visible from the duodenum and was only seen when the papilla was opened up. Microscopically the growth was a columnar-celled carcinoma and was found to be invading the smooth muscular tissue around the ampulla Vateri. The common bile duct was greatly dilated with dark bile and was as thick as one's thumb. When the finger was introduced into the duct and directed downwards towards the biliary papilla the common duct was felt to end blindly like a test tube. The hepatic, cystic ducts, and the gall-bladder were greatly dilated; no gall-stones were found. The liver weighed 4 lb.; it was enlarged, smooth on the surface, and deeply bile-stained. Microscopically there was no cirrhosis, though the atrophied and degenerated condition of the liver cells allowed the existing fibrous tissue of the portal spaces to appear more prominent than in health. Wirsung's duct was tortuous and dilated throughout the whole of the pancreas; in the head of the gland there was a large cystic dilatation of the duct which contained recent blood-clot; the rest of the dilated duct contained dark brown fluid. No calculi were seen. The tail of the pancreas was adherent to the stomach by old adhesions, evidently the result of past inflammation. To the naked eye the pancreas was extremely fibrotic. Microscopically the glandular tissue of the organ was widely replaced by fibrous tissue and, where it could be made out, was much disorganised. Numerous dilated ducts were seen, some of which contained microscopic calculi. There was some recent small cell infiltration. The stomach and intestines showed signs of recent catarrhal inflammation. The kidneys presented senile changes and a few cysts. The heart weighed 11 ounces and was normal for the time of life. The lungs were emphysematous. No secondary growths were found in any part of the body.

The additional points of interest are:—1. The sudden onset of acute symptoms, followed by death in 18 hours. The preliminary diarrhœa, taken in conjunction with the signs of catarrhal inflammation found after death, make it probable that an infective gastro-enteritis set up inflammation in the chronically inflamed pancreas, and that acute pancreatitis, with the resulting hæmorrhage into the dilated duct, accounted for the severe collapse and death. 2. The extremely fibrotic condition of the pancreas appeared to be too advanced to be accounted for by obstruction of 11 weeks' duration. It is probable that, if the chronic pancreatitis was due to obstruction of Wirsung's duct, the growth must have interfered with the duct of Wirsung for a considerable period before it set up biliary obstruction. 3. It is noticeable that with such extreme fibrosis of the pancreas there was no glycosuria or diabetes.

Upper Brook-street, W.

ON THE USES OF FORMALIN IN GLYCERINE.

BY ALFRED C. JORDAN, B.A., M.B., B.C. CANTAB., L.R.C.P. LOND., M.R.C.S. ENG.,
HOUSE PHYSICIAN, ST. BARTHOLOMEW'S HOSPITAL.

FORMALIN is so powerful an antiseptic that its use for clinical purposes has tempted many, but in every case, so far as I know, the attempt has been abandoned on account of the irritating nature of formalin and the pain which its use has involved. I have found that this difficulty can be to a great extent overcome by using glycerine instead of water as the medium by which to convey the formalin to the required part. For 10 months I have used a mixture of formalin in glycerine, from 1 to 4 per cent. Although the mixture will keep without much diminution in strength for several weeks in a well-stoppered bottle in a cool place, it is better to prepare it fresh for use each time by mixing from one and a half to five minims of formalin with two fluid drachms of pure glycerine. This preparation is useful in at least four different ways—(1) as an application to the throat; (2) as a mouth-wash; (3) as an application to the skin; and (4) as a urethral injection.

1. *As an application to the throat.*—An ordinary pharyngeal brush is employed. A single application can be absolutely relied upon to kill every micro organism with which it comes in contact. My bacteriological examinations prove this. The glycerine spreads readily over the surface beyond the immediate limits of its application; it conveys the formalin into the follicles of the tonsils and into the deep layers of the mucous membrane. In follicular tonsillitis in the early days, while there are no deep collections of pus, formalin in glycerine (2, 3, or 4 per cent.) is a specific. After a single thorough application the temperature falls to normal within a few hours, and remains normal. The application is usually attended by a little soreness lasting only a few hours. For from half an hour to an hour after the treatment the patient should not be allowed to drink, the formalin being left undisturbed to exert its bactericidal action. After this a simple gargle, such as chlorate of potash, is all that is necessary. In diphtheria, in cases where the membrane is confined to the pharynx, formalin in glycerine is equally successful. In most cases, however, there is membrane in situations inaccessible to a brush: in the nares or in the air-passages In such cases formalin in glycerine is of little use. In scarlet fever, where the throat condition is but a small part of a general disorder, one cannot expect much good from formalin; but even here 2 per cent. of formalin in glycerine every second or third day is certainly as good as any other local application with which I am acquainted.

2. *As a mouth-wash.*—In aphthous stomatitis and in parasitic stomatitis (thrush) a single application of formalin in glycerine, 2 per cent., should be made, and followed by the use of the glycerinum acidi borici of the British Pharmacopœia. In ulcerative stomatitis a single application does not appear to do much good and I am not convinced that formalin always accelerates the healing of the ulcers to an appreciable extent. Combined with iodine and with β eucaine (the latter as a local anæsthetic) in the following proportions, a useful mouth-wash is afforded: 1 per cent. of formalin, 2 per cent. of iodine, and 2 per cent. of β eucaine, in glycerine. With this and the internal administration of chlorate of potash good results are obtained. In gangrenous stomatitis (cancrum oris) I have not had an opportunity of trying formalin, but I believe that at the commencement 4 per cent. formalin in glycerine might penetrate sufficiently deeply to put a stop to the disease. Tuberculous ulcers of the pharynx, mouth, tongue, and lips, occurring as they do in the broken-down subjects of advanced phthisis, are never hopeful cases to treat. They are always liable to re-infection from the lungs and therefore repeated applications are necessary. But these repeated applications are not well tolerated on account of the great tenderness of the ulcers. In one case of tuberculous ulcer of the lower lip I was able to apply 4 per cent. formalin in glycerine very thoroughly twice a week by previously placing in contact with the ulcer a piece of absorbent wool soaked in β eucaine 4 per cent. In the intervals the ulcer was protected as far as possible by boric ointment. Considerable improvement occurred by the end of a fortnight, but I was not able to keep the patient under observation.

3. *As an application to the skin.*—Formalin may be thus employed in all parasitic diseases, but especially in tinea tonsurans (ringworm). The whole area is thoroughly cleaned by means of turpentine, followed by soft soap and water to remove grease, and 4 per cent. formalin in glycerine is rubbed carefully in by means of a piece of lint soaked in it. If there is much inflammation a piece of lint soaked in the formalin and glycerine is simply applied to the surface and left so for a few hours, protected by a layer of wool. This application never requires to be repeated. A little boric or zinc ointment or lead lotion will complete the cure in a few days. I have never known this to fail. Some cases of lupus ought to be readily curable by a few applications of 4 per cent. formalin in glycerine on lint. I have not yet, however, had opportunities of testing this important point.

[10] Glasgow Medical Journal, vol. xxxiv., August, 1890.

4. *As a urethral injection.*—In one case of acute gonorrhœa I injected one and a half drachms of 1 per cent. formalin in glycerine, with the result of completely and permanently curing the case. But for three days after the injection there were considerable pain and difficulty of micturition, due, no doubt, to swelling of the mucous membrane. For this reason I am not confident in recommending its general use as a urethral injection.

Other uses of formalin in glycerine will doubtless suggest themselves to the reader.

St. Bartholomew's Hospital, E.C.

MATERNAL IMPRESSIONS IN LOWER LIFE.

BY ANDREW WILSON, F.R.S. EDIN., &c.

RECENT articles in THE LANCET have directed attention anew to the subject of maternal impressions. I am one of those who believe, on scientific evidence, of the possibility of the state of the mother mentally and otherwise affecting the fœtus. Therefore the following incident may prove interesting to biologists and medical men at large.

In a letter dated from Port Elizabeth, South Africa, and dated Dec. 15th last, a correspondent, Mr. David Lumsden, gives the case of a kid taken from a bush-bock ewe (*Tragelaphus sylvaticus*) killed in the "elephant bush" distant about 40 miles from Port Elizabeth. In this district numerous elephants are found. The kid (Fig. 1) of which a photograph was inclosed in the letter of my correspondent, is seen to possess an elephantine head and proboscis, while the tail is also of the proboscidean rather than of the antelope type. By way of comparison I have reproduced the antelope itself (Fig. 2) from the drawing in Wood's "Natural History." If one may suppose that the pregnant ewe was frightened by an elephant the deformity of the kid may be explained—that is, if we admit the possibility of maternal impressions acting on the unborn young. Teratologists may be able to refer the deformity to some type or other independently of such an explanation, but if the maternal impression view be adopted the human element, which is credited with explaining things on the *post hoc* principle, must of course be entirely eliminated from such a case as that before us. In other words, there is here no anxiety about the young before birth

FIG. 1.

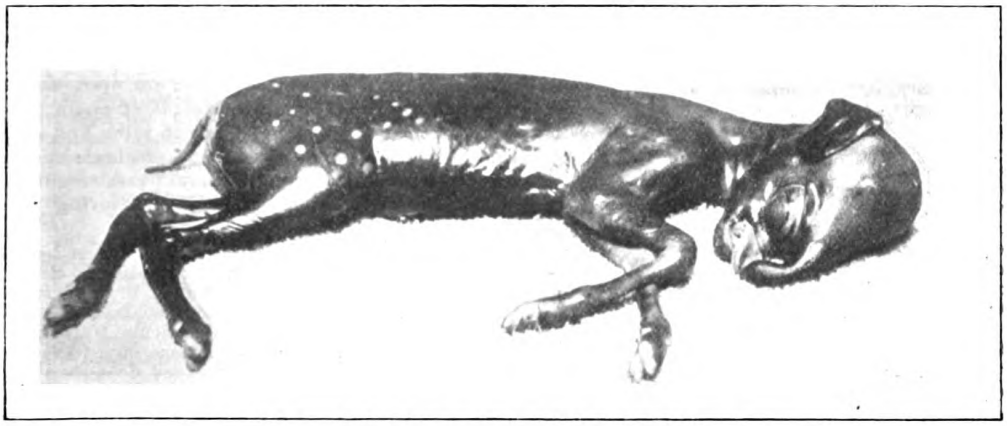
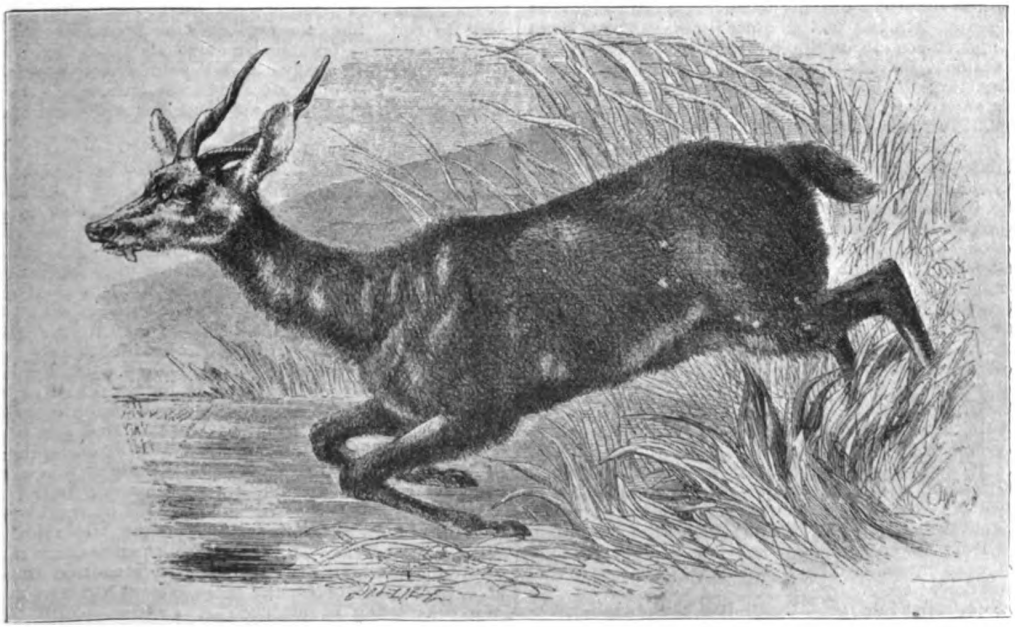


FIG. 2.



and no discounting beforehand how the young might be deformed in consequence of some real or supposed fright or injury received by the mother.

Edinburgh.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Procemium.

CHILDREN'S HOSPITAL, BIRMINGHAM.

A CASE OF CYSTINURIA WITH FORMATION OF CALCULI.

(Under the care of Mr. GAMGEE.)

THE presence of cystin in the urine may always be taken to indicate the occurrence of an abnormal breaking down of albumin, either in the alimentary canal, as in most cases, or in the tissues of the body, as occurs in acute yellow atrophy of the liver. Cystin calculi are usually single, but occasionally, as in Mr. Gamgee's case, many of these calculi may be present.

A boy, aged 12 years, was admitted into the Children's Hospital, Birmingham, on Oct. 20th, 1900, complaining of the frequent passage of calculi per urethram. The patient was sent into the hospital by Dr. E. A. Sadler of Ashbourne, who has supplied many details of the history.

The family history showed that the patient comes of a long-lived family. His paternal grandfather died at the age of 63 years from heart disease. His paternal great-grandfather died when he was 80 years of age from "stoppage of the water," but there is no history of there having been a vesical calculus present. His paternal grandmother is still alive, aged 70 years, and is always in good health. The patient's father has six brothers and four sisters, all alive and well. The grandfather and grandmother on the mother's side are still living; they are over 70 years old and are always well in health. There is no history in the family of phthisis, gout, or rheumatism, except that a sister of the patient's mother died, when she was 21 years old, her relatives saying that at the time of her death she was "a bit consumptive." The patient's father and mother are alive and well.

As regards the patient's personal history he had bronchitis during his first dentition and his tonsils have been enlarged for some years. He has had no other illness. There is no point of importance about the patient's diet. Two years ago the patient, for the first time, passed a small stone per urethram, and he has done this four times since, passing one stone each time. The father and mother are quite certain that the stones passed on these occasions were quite different from those passed a few days before the boy was admitted into the hospital, for they were very gritty, were yellow in colour, and had a rough surface. During the week previously to admission the patient passed eight small calculi, the passage of them being very painful and causing retention of urine. These stones are very small, are yellowish-white in colour, have a smooth surface, and together weigh two grains. The quantity of urine passed in 24 hours varied from 34 to 44 ounces and the quantity of urea varied from 374 to 484 grains. There was neither albumin nor sugar present. On standing the urine deposited a slight sediment, which was found to contain many typical hexagonal crystals of cystin.

On Oct. 23rd the patient was sounded and another calculus was found. This, after being removed by suprapubic cystotomy, was found to weigh eight grains and to be oval in shape. Its surface was in one part exactly like those of the smaller calculi already described, but the greater part of the surface was covered with glistening yellow crystals. The patient made a good recovery after the operation. Scrapings from the calculi were dissolved in ammonia solution. On evaporation of the liquid hexagonal crystals of cystin were deposited.

Remarks by Mr. GAMGEE.—Cystinuria is undoubtedly in some cases hereditary, but in this instance the family history has been inquired into very carefully and no trace of the affection in other members of the patient's family has been met with. At times, too, cystinuria is present in patients who either are themselves the subjects of tuberculosis or who come of a tuberculous family, but here again in the case now under review the history is negative. Urine containing cystin is said to decompose rapidly and to contain only a small amount of urea, but rapid decomposition was not noticed in this case and, as has been stated, the amount of urea passed was well up to the average. The parents' statement as to the character of the calculi previously passed is curious. The passage of cystin calculi usually recurs at intervals, and it seems unlikely that this patient passed calculi sometimes of cystin and sometimes of some other material. The causation of cystinuria is obscure, but the condition is probably due to the presence in the intestines of certain specific micro-organisms producing an abnormal decomposition of proteid matter.

DEVIZES HOSPITAL.

A CASE OF PERFORATED GASTRIC ULCER WITH OPERATION AND RECOVERY.

(Under the care of Dr. H. MACKAY.)

THE manipulations necessary for the suture of a perforated gastric ulcer on the posterior wall near the cardiac orifice are much facilitated by an additional incision of the abdominal wall towards the left ribs; yet even with this the operation is never easy. All records of operation for perforating ulcer of the stomach are of value and enable more exact ideas to be formed as to the diagnosis and treatment of this condition. Dr. Mackay's case recorded below illustrates the value of sponging in removing the effused gastric contents.

A domestic servant, aged 17 years, was seen by Dr. G. C. Phillips on the afternoon of Nov. 23rd, 1900. She was very ill and complained of severe pain in the epigastrium and right hypochondrium. She had been faint and violently sick. The pain had come on suddenly while she was at work about one o'clock on the same day. With the pain came a sudden feeling of faintness and sickness and then she collapsed on the floor. Her previous history revealed that she had suffered from anæmia and gastric pain for nearly twelve months and that she had been under treatment for gastric ulcer in the preceding April. Hæmatemesis and melæna were denied. During the few days preceding the present attack she had not felt worse than usual. On the evening immediately preceding it she had gone home and had a "good" supper of cold roast pork, after which she went to bed. She was awakened an hour later by pain in the epigastrium, but she went to sleep again. All the following morning she had gastric pain, which was increased by her breakfast of bread-and-butter and tea. As already stated she was at her work about one o'clock when the attack occurred for which advice was sought.

Dr. Phillips found her in a condition of collapse, with a pale, anxious face, shallow, jerky breathing, a small rapid, weak, irregular pulse, and cold surfaces and extremities. The pain, which was acute, was referred to the epigastrium and left hypochondrium, from which it extended up the left side almost to the axilla. The tongue was foul. The bowels had acted the day before without difficulty. The temperature was 99° F. Physical examination showed a hard resisting abdomen with slight distension, some tenderness in the region to which the pain was referred, and a tympanitic note over the whole abdomen with complete absence of liver dulness. A diagnosis of perforated gastric ulcer was made by Dr. Phillips, and the patient's removal to the hospital was recommended. On subsequent examination at the hospital, the same physical signs being present, it was decided, with the concurrence of Dr. Phillips and Dr. A. V. Trow, to operate at once.

The extremities and trunk of the patient being swathed in warm Gamgee tissue the abdomen was opened by a three-inch incision in the middle line between the xiphi-sternum and the umbilicus. On dividing the peritoneum a gush of turbid fluid and gas occurred and the presence in the fluid of minute oil globules like those present on the surface of soup was taken as evidence of gastric contents in the

abdominal cavity. The stomach and intestines were considerably distended with flatus. The anterior wall of the stomach was first examined, but with negative results. The lesser curvature was next explored and on its posterior aspect in the neighbourhood of the œsophageal opening a round hole was found from which gastric contents were escaping. Its position, as near as could be judged, was about a couple of inches from the insertion of the œsophagus. Its edges were clean cut and its diameter was about seven or eight millimetres. It was situated in the centre of a dense round mass of cicatricial or inflammatory deposit which occupied the entire thickness of the gastric wall. The wall was here of considerable thickness. The area of thickening extended for a distance of about one and a half cubic centimetres around the margin of the ulcer in all directions and over this area the visceral peritoneum was tightly adherent to the subjacent tissues. The contents of the stomach having been squeezed out through the perforation three fine silk sutures were passed as a preliminary measure through the margin of the opening. Such was the density of the surrounding tissues, however, that on several occasions these sutures tore through in the endeavour to approximate the edges of the ulcer. Two ridges of peritoneum were then picked up as near the perforation as the adhesion of the membrane would permit and an inclosing "tuck" between five and six centimetres in length was brought together by a dozen Lembert sutures. The abdominal cavity was then methodically wiped out with warm sponges wrung out of sterilised water and the gastric contents were as far as possible removed. The various recesses in the neighbourhood of the spleen and kidneys were explored, but it was found impossible to wipe out the cul-de-sac between the antero-superior surface of the liver and the diaphragm. The apposing surfaces were here in such close contact, probably owing to upward pressure from the distended intestines, that a sponge could not be passed without the risk of bruising or abrading the surface of the liver. Considerable compunction of conscience resulted, too, from the fact that it was impossible to perform any kind of toilet of the lesser peritoneal sac, notwithstanding the presumption that some of the escaped gastric contents might have lodged there. Access to this region by the route of the lesser curvature was clearly impossible. The cavity might certainly have been reached and cleansed by dividing the two anterior layers of the great omentum, but this was a step which at the time did not commend itself to Dr. Mackay. No flushing was made use of. Gauze drains were placed leading to the antero-superior surface of the liver and to the site of perforation; the peritoneum was drawn together by interrupted sutures of fine gut and the abdominal parietes with stout gut. A space was left in the middle of the wound for the emergence of the gauze drains. Dry dressings were applied and equable pressure was secured by a many-tailed bandage.

With the exception of flatulence, abdominal symptoms were inconspicuous after the operation. The drains, which remained sweet, were removed on the fifth day and the sutures on the tenth day, when the incision was soundly healed. From the tenth to the twenty-first day the temperature was normal and the patient was comfortable. There then appeared an irregular pyrexia, with an evening rise to 100·4°, slight respiratory acceleration, and cough. These signs heralded the appearance of a patch of dulness with friction sounds over the middle of the lower lobe of the left lung. Frequent exploration with the needle gave only a little bloody serum for result. Finally, on the twenty-ninth day, the temperature rose suddenly to 103·6°, and a purulent expectoration, at first fairly copious, set in. This continued for four days, then as it gradually declined in quantity the temperature fell to normal and the cough ceased. The course of events suggests that there was a localised septic infection of the diaphragmatic pleura conveyed through Recklinghausen's lymph channels from the sub-diaphragmatic area of infection in the neighbourhood of the perforation. Pus formation on the pleural side appears to have ensued, with subsequent evacuation of the same through the bronchial tubes. Symptoms suggestive of pus formation on the peritoneal side were not apparent, and the further progress of the patient was rapid and uninterrupted.

Remarks by Dr. MACKAY.—Probably every case of operation for perforated gastric ulcer, successful or otherwise, ought to be reported at the present time for purposes of criticism and of statistics. This consideration is the reason for recording the above case, in which the points worthy of notice appear to be the following:—1. The fortunate conditions which rendered possible a prompt diagnosis and an early operation, the patient being on the table within four hours from the moment of perforation. 2. The technical difficulties which attend an operation in this region of the stomach. While an area on the anterior surface or the greater curvature is easily reached and is easily brought into the operation wound and under the hands of the operator, one on the posterior surface is reached with difficulty, and one in the neighbourhood of the œsophageal opening must be dealt with more or less *in situ*, the attachment of the œsophagus preventing any traction towards the surface. In this case the necessary manipulations were carried on at the bottom of a pit which shelved upwards under the shadow of the xiphi-sternum. 3. The probable occurrence of a direct transmission of septic infection through the lymph channels of the diaphragm, giving rise to a purulent accumulation on the pleural side, without any signs suggestive of pus formation on the peritoneal side.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Adjourned Debate on Arsenical Beer Poisoning.

A MEETING of this society was held on Feb. 12th, Dr. F. W. PAVY, the President, being in the chair.

Dr. E. S. REYNOLDS (Manchester) illustrated by projections of photographs of patients the leading symptoms in order of time: (1) congestion of the conjunctiva; (2) congestion and œdema of the face and legs; (3) erythromelalgia; (4) papular erythema (the face, the arms, and the back); (5) deeper dermatitis simulating late secondary syphilis; (6) herpes zoster; (7) pigmentation of various kinds and degrees—deep general, mulatto-like, punctiform, patchy, &c.; (8) unpigmented scars in generally pigmented skin; (9) pigmentation with furfuraceous desquamation; (10) keratosis; (11) bullæ; (12) transverse furrows of the nails; and (13) purpura (rare). Other photographs illustrated the first onset of paralysis which is evidenced by inability to appose the thumb and little finger, and a case of total paralysis of the diaphragm. Dr. Reynolds also showed (for Professor Delépine) photographs of crystals of As_2O_3 obtained by Reinsch's test from solutions of 1 in 1,000,000 in water and 1 in 100,000 in beer (standardised) and from commercial beer, glucose, and sulphuric acid.

Dr. DIXON MANN (Manchester) pointed, with regard to the clinical features, to some unusual types that occurred in the epidemic: (1) cases without neuritis or skin lesions, but with perspiration, mental apathy, and a tendency to rambling, weak heart, and œdema of the lungs, freedom from pain, fever of from 1° to 3°, and a tendency to sudden death from syncope; and (2) cases marked by tendency to collapse and absence of fever, diarrhœa, vomiting, weak heart, and tendency to syncope, as in subacute poisoning from arsenic. In the former type a diagnosis of enteric fever had been made; in the latter symptoms might be deferred for from four to seven days after the patient had ceased taking arsenical beer. In the matter of chemical observations, arsenic hitherto had been regarded as a non-cumulative poison. He (Dr. Mann) had shown that half an hour after taking five minims of arsenical solution the metal could be detected in the urine. In fatal acute poisoning arsenic was not as a rule detected when the patient had survived for from 14 to 16 days. It appeared that prolonged administration delayed elimination, although, unlike lead or other metals, arsenic did not form stable combinations with tissue proteids. Thus, in the modified conditions of this outbreak arsenic was a cumulative poison. Time was not the only factor. In one case in which a woman who had died 21 days after admission to hospital had been removed from the source of poisoning no arsenic was found post mortem, while in the case of another woman who in the same circumstances survived 52 days arsenic was found. The primary channels of elimination were the kidneys, but the importance of the skin as a secondary channel was very great. He had obtained 0·8 milligramme of As_2O_3 from 10 grammes of keratosis tissue. The nails contained appreciable quantities

of arsenic. As to elimination without symptoms Dr. Mann had found in some surgical patients who drank beer that a considerable amount of arsenic was eliminated by the urine as though no symptoms of arsenical poisoning were present.

Dr. JUDSON S. BURY (Manchester) thought that the nature of cases of slight pigmentation must now be more closely investigated. He believed that he had seen peripheral neuritis in spirit-drinkers. There was in his experience no outbreak similar to the recent one. He had never before seen such severe hyperæsthesia in the limbs. The hyperæsthesia was very persistent, remaining months after the keratosis or the paralysis. In some cases pain and effusion of the joints and tenderness of the bones were observed. He thought the paralysis was more widespread in the arsenical than in most other forms of peripheral neuritis. In the hand the paralysis of extension was marked and it led to a curved shape of the fingers.

Dr. NATHAN RAW (Liverpool) said that the outbreak did not appear to have been so extensive in Liverpool as in Manchester. During the last three years out of 12,623 patients admitted to the Mill-road Infirmary 226 had alcoholic neuritis; of these 147 presented symptoms attributable to arsenic. Of the 226 patients 51 died from cardiac failure and general asthenia. From his statistics he concluded that the contamination of beer commenced in May, 1900. Beer and porter appeared to be the usual vehicles. He had observed very little peripheral neuritis in Scotland. The serious lesions, he thought, were due rather to continued drinking of moderate quantities than to sudden outbursts of deep drinking. Among the symptoms marked pyrexia was present in three cases. He found arsenic in the urine in five cases out of 33 examined, but in no case was he able to find it later than 10 days after admission. Dr. Raw referred to the observation made by Osler to the effect that liquor arsenicalis when given in brandy had more effect than when given in water alone.

Dr. T. N. KELYNACK showed illustrations, photographs, and casts of numerous cases. The casts showed the late effects. He believed that the alcoholic "vehicle" in the form of beer accentuated the toxic effect of arsenic. He had observed cases in infants at the breast, and this pointed to elimination in milk. He thought the presence of As_2O_3 in glucose was associated with an acid reaction. The amount present in different samples of beer varied. In one instance there were 1 4 grains of As_2O_3 in the gallon.

Sir LAUDER BRUNTON referred to John Hunter's experiments on dogs. Hunter found that when dogs were poisoned by placing arsenious acid in a wound they died just as surely as when the poison was swallowed, and after death there was evidence of inflammation of the stomach in both cases, but it was more marked when the poison was absorbed from a wound than when it was taken by the mouth.

Dr. A. P. LUFF had for some years taught that where peripheral neuritis of doubtful origin was present arsenic was to be suspected. The elimination of arsenic in ponderable quantities as described by Dr. Dixon Mann was really a new fact. In one case he (Dr. Luff) had given an adult five minims of arsenical solution three times a day for a short time when suddenly peripheral neuritis set in. It then transpired that the patient was an alcoholic subject. He took notes in 40 cases in Manchester and found that there had been vomiting and colic in only 36 per cent., and these were cases where large quantities had been consumed, so that possibly these symptoms were due to gastric catarrh. He had classified the symptoms in 91 cases, and had found that pain and tingling in the feet and the calves of the legs were a prominent and fairly constant symptoms.

Dr. F. W. TUNNICLIFFE, whilst agreeing that arsenic in the beer accounted for the chief symptoms, thought its action might have been modified by the presence of selenium, which he had found in sulphuric acid, glucose, and beer.

Dr. FREDERICK TAYLOR could not quite agree that peripheral neuritis with marked tenderness of the calves of the legs was practically limited to cases of alcoholic or arsenical poisoning or to beri beri. He had observed it after typhoid fever and diphtheria and in other conditions.

Dr. SYDNEY RINGER thought that the general action of arsenic was akin to that of the potassium salts, which affected the muscles both of the skeleton and of the heart.

Sir DYCE DUCKWORTH said that in his experience the therapeutic use of even large doses of arsenic was practically free from serious consequences as in the cases before the meeting.

Dr. REYNOLDS, in reply, said that some difficulty of separating cases of peripheral neuritis into etiological groups was caused by the fact that many spirit-drinkers took large quantities of beer.

MEDICAL SOCIETY OF LONDON.

Exhibition of Cases.

A CLINICAL meeting of this society was held on Feb. 11th, Mr. J. H. MORGAN, the President, being in the chair.

Dr. C. E. BEEVOR showed two cases of Paralysis of the Serratus Magnus and the Lower Half of the Trapezius occurring in joiners (occupation paralysis). The two cases were identical. One man, aged 27 years, had severe pain in August last in the right supra-spinous fossa; two months after he noticed difficulty in raising the arm and two weeks later the deformity of the scapula was observed. The other patient, a man, aged 18 years, had severe pain behind the right shoulder-blade and along the axilla; two weeks after he was unable to raise the arm above the horizontal line and a month later it was observed that he had complete loss of power of the right serratus magnus and of the lower half of the trapezius. In both cases there was inability to advance the arm and carry it upwards beyond the horizontal line, and in this attempt the scapula was drawn upwards and its posterior border projected backwards owing to the serratus magnus being absent. The wasting of the trapezius below the level of a horizontal line from the second dorsal spine to the spine of the scapula was well shown by making the patient carry the arm horizontally backwards against resistance. It was pointed out that "winging" of the scapula might be produced by absence of the serratus or of the lower fibres of the trapezius; in the former the deformity increased as the arm was advanced to the horizontal position, beyond which the patient could not raise it, while in paralysis of the trapezius without the serratus the deformity increased till the arm reached the horizontal line, but above this point the arm could be raised and the deformity disappeared. In the present cases both muscles were affected, but in the first case the serratus had partially recovered and the deformity diminished after the arm passed the horizontal line. The affected muscles gave no reaction with the faradaic current and only a slight slow reaction with the constant current. There was no anæsthesia. Both patients were joiners and the muscles affected were those of the right arm, which would be most used in planing. It seemed probable that the lesion was a neuritis affecting the intra-muscular motor and sensory nerves and that the character of the work was a determining cause and the cases might be looked upon as those of occupation paralysis. In both cases only the fibres of the trapezius below the level of the second dorsal spine were affected and in several other cases Dr. Beevor had found that this was the level of the lower border of the unaffected fibres, where the lower half of the trapezius was paralysed. The reason of this might be due either to the distance of the lowest end of the spinal accessory nerve from its trophic centre in the cervical cord or to the part of the muscle which escaped being the fibres which are supplied by the third and fourth cervical roots as well as by the spinal accessory nerve.—Mr. A. E. BARKER and Mr. EDMUND OWEN discussed the case.

Mr. F. C. WALLIS showed a young woman who had Congenital Synostosis of the Upper Ends of Both Radii and Ulnæ and on one side Ischæmic Paralysis (Volkmann) which supervened on using Esmarch's band during an operation for the relief of the congenital disability.

Mr. WALLIS also presented a second patient who suffered from Pressure Paralysis the result of Tight Splinting for Backward Displacement of the Upper End of the Ulna. The patient showed atrophy of the muscles of the hand supplied by the ulnar nerve.

Mr. H. BARNARD showed two patients—a boy, aged three years, and a girl, aged four years—with Typical Ischæmic Contraction of the Forearm in each case. The deformity was removed by splitting and elongating the flexor tendons through a longitudinal incision above the wrist and the power of supination was restored by elongating the pronator radii teres and detaching the pronator quadratus from its ulnar attachment.—Mr. WALLIS, in reply, said that in cases where no power had returned in the contracted muscles he doubted whether much

improvement would be obtained by tendon elongation.—Mr. OWEN congratulated Mr. Barnard on the good results which he had obtained.—Mr. WALLIS stated the opinion that in ischæmic paralysis operations should not be undertaken until a fair amount of power had returned in the affected muscles.

Mr. MARMADUKE SHEILD showed a boy in whom after failure of the ordinary means he had Removed a Halfpenny which had Lodged Opposite the Upper Edge of the Sternum. The œsophagus, which at the site of operation was covered with indurated inflammatory tissue and glands, was incised longitudinally and the body grasped with long forceps and removed. From the facts that some force had to be used before it was dislodged and that the escape of some pus followed its removal there was no doubt that the body had caused ulceration. The wound was left open and closed slowly in spite of the septic conditions.—The PRESIDENT said that it would be interesting to watch the patient with a view of ascertaining whether the operation was followed by any stenosis of the œsophagus.—Mr. KELLOCK observed that the seat of lodgment of the coin in Mr. Sheild's case was the favourite one and that usually the "coin-catcher" was efficacious.—Mr. WALLIS and Mr. BARKER had also experience of similar cases in which removal was effected by the "coin-catcher."—Mr. SHEILD, in reply, said that he had removed coins, and also a tooth-plate, withh the "coin-catcher," and in this case he had tried the same means but without avail.

Mr. SHEILD also showed a woman after Anterior Gastro-enterostomy for Pyloric Obstruction. The pylorus was found to be thickened and knobby. Murphy's button was used to effect the anastomosis. The patient made a rapid recovery and had put on two stones in weight when she left the hospital.

Mr. SHEILD also showed a man on whom he had operated for a large intermuscular tuberculous abscess of the thigh. An incision 24 inches long was made and the large cavity was allowed to heal by granulation.

Mr. STANLEY BOYD showed a man, aged 47 years, who eight or nine years ago had Severe Pain in the Chest and Abdomen after Food. Vomiting began six years ago in attacks lasting from one to three weeks, with intervals of from four to six weeks, and had continued up to admission. Vomiting usually occurred after lying down at night; about three pints of frothy matter were usually brought up. There was no hæmatemesis but much flatulence. The stomach usually felt distended. Vomiting relieved the distension and pain. He was admitted on December, 1900, under the care of Dr. Abercrombie after a month of daily vomiting. He was transferred to Mr. Boyd's care on Dec. 27th. Even after a fortnight's rest and treatment, which arrested the vomiting, the patient was very thin, pale, and feeble. Abdomen: stomach formed a visible tumour in the left hypochondriac and lumbar, the epigastric, and umbilical regions. No tumour or hard mass could be felt. Splashing was obtained. Capacity was nearly two quarts. There was no sarcinæ in the contents. On Dec. 29th posterior gastro-enterostomy was performed. The opening was from one and a half to two inches long between the stomach and first loop of jejunum, and the edges were secured by three continuous lines of fine silk suture on either side of it. The most external held the sero-muscular coats, the second the cut edges of the same coats, and the innermost united the edges of the cut mucosæ. With regard to the after course the patient vomited once only. Peptonised milk was given by the mouth soon after and was continued in increasing quantity. Nutrient enemata were also given for two days. Minced meat-and-bread were given on Jan. 5th, and the quantity was quickly increased, the appetite being hearty. The wound healed perfectly. The temperature was 100° F. on the second evening, 101° on the 3rd and 4th, and then practically normal. As to the patient's weight, nine days before operation it was 7 st. 12 lb.; 12 days after the operation it was 7 st. 7 lb.; 26 days after operation it was 8 st. 7 lb.; and 40 days after operation it was 9 st. 2 lb.—The PRESIDENT had operated both by the anterior method—i.e., by bringing the small intestine up in front of the colon to the anterior surface of the stomach and using a button—and by the posterior method—i.e., by bringing up the small intestine through an opening made in the transverse meso-colon and making a communication with the posterior aspect of the stomach by means of stitches.—Mr. BARKER said that rapid improvement after gastro-enterostomy could not be taken to mean that the case was not one of cancer. For some years past he had adopted the posterior operation and it had not proved to be much more difficult than the anterior method. With practice the operation could be done with suturing almost as rapidly as with Murphy's button.—Mr. WALLIS said that in some cases the patient did better if placed in the sitting position after operation.—Mr. OWEN had found it advantageous to turn the patient face downwards after meals when the anterior operation had been used.—Mr. SHEILD stated that he allowed patients to lie in the position they found most comfortable.

Dr. W. HUNTER showed a case of Pernicious Anæmia. The patient was a man, aged 37 years, who had enjoyed good health till two years ago when pallor (lemon colour), with pain in the mouth and stomach came on; an inflammatory condition of the tongue was present and was relieved by the removal of three very bad teeth. The gastric pains and anæmia increased, so that he became extremely anæmic, with urobilinuria. The blood corpuscles were 27 per cent. and hæmoglobin 35 per cent. of normal. Suppuration of the gums, which had been present for five years, continued. The treatment consisted of oral and intestinal antisepsis with injections of antistreptococcic serum. In six weeks he steadily improved and gained 7 lb. in weight. Liquor arsenicalis was then added to the treatment and five weeks later he had gained an additional stone in weight and was discharged as cured.—Dr. J. F. H. BROADBENT referred to two cases in which the symptoms of pernicious anæmia had been closely simulated by anæmia secondary to other causes. The first was a case of septic anæmia and was successfully treated by injections of cacodylate of soda, and the second was a case of contracted kidney in which there had been no clinical evidence of the condition.

Dr. STCLAIR THOMSON exhibited two cases to show the desirability in certain cases of Removing the Tonsils by Enucleation. The first patient was a woman, aged 38 years. In 1894 she was in close attendance on her husband who was very ill with tonsillitis and a foul discharge from his throat. Soon after she noticed in her tonsils cheesy collections of offensive taste and fœtid odour. The local conditions were very similar to those presented by her son who was the second case shown at the same time. For this condition she was under continuous treatment for three years. During two years she attended Dr. Thomson's clinic and was actively treated with gargles, paints, lozenges, caustics, the galvano-cautery, and incisions laying open the tonsillar crypts. At the same time attention was given to her digestion and general health. She remained unrelieved. Accordingly, two years ago the imbedded tonsillar stumps were enucleated under chloroform and she had since been quite free of the chronic fœtid follicular tonsillitis which had been such a persistent nuisance. There had been some regeneration of lymphoid tissue between the pillars of the fauces, but there were no crypts in which these cheesy septic concretions could form. The patient found that her voice had not in any way been injured, but rather improved, for singing. The second patient was the son of the former one. He was a boy, aged 10½ years. When four years old his tonsils were noticed to be enlarged and they were removed at the Throat Hospital. He was not again troubled with them until after scarlet fever, at the age of six years, when they were again enlarged and were removed with the guillotine at the Throat Hospital by Dr. StClair Thomson. A few months later cheesy collections were noticed in the crypts of the tonsils, and these had since continued almost without intermission. He was under treatment from September to December last. The chief complaint was of his foul breath, which was said to be most marked in the morning, but was perceptible when he was asleep with his mouth closed. The tonsil stumps were seen to be deeply imbedded between the faucial pillars. They were riddled with crypts, some of which were half an inch deep. From these crypts dirty white, fœtid, cheesy matters were easily extruded. There were no adenoids. It was seen that it was impossible to thread these tonsillar stumps into the ring of the guillotine. In the previous case all attempts to obliterate the crypts failed. The choice of treatment, therefore, seemed to lie between punching out the remains of the tonsil by *morcellement* or enucleation, as in the former case. The mother of the boy was so gratified with the result in her own case that she was anxious for him to have the same treatment. The operation was performed under a general anæsthetic, chiefly by a pair of curved scissors and the fingers.

Dr. J. L. BUNCH showed a case of Localised Abdominal Swelling. The patient was a child, aged three years, who

was strong and healthy up to five months ago, when she had bronchitis and was in consequence kept in bed for a fortnight. When she got about again she seemed rather weak and ailing at first. Soon afterwards her mother noticed a swelling of the right side of the abdomen, and during the last three months this had gradually increased in size. The swelling was said never to become appreciably smaller, but the mother thought that it was sometimes a little "softer" first thing in the morning or after the child had been lying down for a considerable time. The child had never been out of England. There was now an elastic swelling of about the size of a cricket ball in the right hypochondriac and upper part of the right lumbar regions, which formed a definite prominence when the child stood up. The percussion note over the swelling varied. No thrill could be made out. The child was apparently in good health. The urine was normal. —The PRESIDENT thought that the swelling was due to a local weakness of muscle rather than to a definite tumour.—Dr. EDMUND CAUTLEY had under his care a similar case and regarded it as being due to muscular defect.

CLINICAL SOCIETY OF LONDON.

Address of Condolence to His Majesty King Edward VII.—Leucocythæmia.—Instantaneous Radiography.

A MEETING of this society was held on Feb. 8th, Sir R. DOUGLAS POWELL, Bart., the President, being in the chair.

The proceedings opened with an address of condolence to His Majesty King Edward VII. in respect of the death of Her Majesty the late Queen and of congratulation on his accession to the throne.

Dr. D. N. NABARRO read notes of a case of Pronounced Spleno-myelogenic Leucocythæmia subsequent to an attack of Malarial Fever. The patient, a man, aged 23 years, consulted Dr. Thin on account of enlarged spleen on March 28th, 1900, at the recommendation of Dr. C. H. Perram of Bedford. He went to Vancouver in 1899 and considered himself to be then in good health. During April and May of that year, which were wet and cold months, he felt very tired. In July he was attacked by "chills." The rigors came on about midday, lasting an hour, then for an hour he felt hot in the head, with a final stage of perspiration. He was confined to bed for four days. Not regaining his strength he returned to England in October of the same year. He had noticed that he was getting corpulent towards the end of August and thought he was getting fat. The abdominal enlargement, however, was found to be due to enlarged spleen when the patient was first examined by Dr. Perram on Dec. 13th. Dr. Thin wrote to Mr. J. A. Pybus for further information regarding the origin of the illness, and was informed by him that the patient first consulted him on July 5th, 1899, and he was asked to see him again on July 11th. He then complained of feeling ill, had a quick pulse and a furred tongue, with a temperature of 104° F. Under treatment, antipyretics and quinine, the temperature sank to 99·5°, and on July 26th he was considered cured. During August and September he was subject to sensations of chilliness but had no rise of temperature. When he left for home on Sept. 26th he seemed to Mr. Pybus to be suffering from some "pernicious toxæmia." He told Mr. Pybus that while at Manitoba, about April 2nd, he stayed two days in a low, swampy place, and from July 20th to 27th he camped beside a small creek where there were swarms of mosquitoes. Mr. Pybus informed Dr. Thin that he saw three other cases of fever in a house two miles distant from that in which the patient under notice lived. These cases were similar in nature and were characterised by high temperature, 104° in one case and 106° in a second. The attack in these cases lasted 10, 16, and 20 days respectively, and all the patients made good recoveries. Mr. Pybus stated that "these were the only cases of fever in the district during the 10 years he had been in practice there and were believed to be of a typho-malarial character." On Dec. 13th the spleen was found definitely to be the cause of the abdominal enlargement. On March 28th, 1900, Dr. Thin found the patient to be very pale and anæmic and with a "very large spleen, which descended to the groin on the left side and crossed nearly to the ilium on the right side." No malarial parasites or pigmented leucocytes were discovered on careful examination, but the white corpuscles were greatly increased in number. On May 25th, by the kindness of Dr. Thin, the patient was seen by Dr. Nabarro and a complete blood examination was made. The spleen was then as large as it had been found to be in March and was slightly tender about the notch. There was no enlargement of the liver or of any lymphatic glands. In September another differential count of the leucocytes was made and on Nov. 16th the patient was again seen at Dr. Thin's house and a complete blood examination was again made. (The conditions that were found at the different examinations are shown in the subjoined table.)

—	1900.			
	March.	May 23rd.	Sept. 8th.	Nov. 16th.
Red corpuscles	—	3,250,000	—	2,966,700
White ,, ...	—	750,000	—	666,700
Ratio of white to red	—	1 : 4½	—	1 : 4½
Hæmoglobin per cent.	—	36–40	—	40–42
Colour index	—	6	—	0·68
Lymphocytes (small)	9 per cent.	6	1·5	2·3
,, (large)...	10 6	4	2·0	0·5
Polymorphonuclear-leucocytes	41	47	38	38·4
Eosinophiles	10	8	8·6	10·8
Myelocytes	28	32·5	46·5	42
Basophile	1	2·5	0·8	Very few.
Nucleated red (per 1000 white counted)	13	51	10	20

Many transitional forms between large lymphocytes, polymorphonuclear leucocytes, and myelocytes were seen. The films were fixed by immersion in alcohol and ether and stained by eosin and hæmatoxylin and by the Ehrlich-Biondi triple stain. In November the patient was feeling so much better that he was desirous of taking up some occupation. The spleen was as large as ever but causing no inconvenience beyond a feeling of weight when the patient was tired. Treatment had brought about but little benefit as regards the condition of the blood or of the spleen. The patient had had at various times arsenic, iron, quinine, and preparations of hæmoglobin and bone marrow. There were a few interesting points in the case—(1) the antecedent history of malaria, almost certainly indicated by the "chills" described; (2) the great size of the spleen before attention was drawn to it and the slight inconvenience caused by it; (3) the condition of the blood showed a great diminution in the percentage of lymphocytes (from 20 to 23 per cent.) and a corresponding increase in the number of myelocytes (from 28 to 42 per cent.) between March and November, 1900; and (4) in spite of the marked anæmia and the large number of white cells in the blood the patient was apparently in good general health and was anxious and able to follow an occupation.

Mr. E. W. SHENTON displayed a large number of radiograms taken with very short exposures, examples of so-called Instantaneous Radiography. He explained that the word "instantaneous" merely conveyed the idea that the exposure had been reduced to reasonable limits—i.e., from a fraction of a second to a maximum of 30 seconds. This he had been enabled to accomplish by the aid of x ray tubes of larger size, whereby not only was the exposure materially reduced, but the deeper parts of the body could be readily seen on a screen. He described the advantages of these tubes in the detection of renal calculus, in the treatment of fracture, and in the rapid localisation and extraction of foreign bodies. Mr. Shenton then demonstrated a very simple and effective method of ascertaining the exact position of a foreign object inside the body. When the shadows of the body and foreign object were thrown upon the screen, on the tube being moved from side to side it was seen that the rate of movement of the two was different owing to their different distance from the tube. If a probe were placed behind the screen at a distance at which its movements approximated those of the foreign body, that would be the distance of the latter, and by repeating this proceeding in different positions the whereabouts of the foreign body could be ascertained to a nicety. (This was demonstrated by the aid of a lime-light projection in a perfectly satisfactory manner.)—The PRESIDENT said that although Mr. Shenton had not

touched upon cases of mediastinal growth or other internal disease, the subject was one which could not fail to interest physicians as well as surgeons.—Dr. G. B. BATTEN said that he had used the rays very much in his practice and had never seen as complete an installation as that of Mr. Shenton or any results approaching his in clearness and rapidity of exposure. He himself had used identical apparatus but had not obtained identical results. With the tubes used by Mr. Shenton things could be seen on the screen which would escape notice under other circumstances. They were not, he said, what would be called high vacuum tubes, but gave an abundance of x-rays. He thought that Mr. Shenton had not done himself justice in that he had not described the details of his method, it being the details which enabled him to obtain such admirable results. With regard to the localisation of foreign bodies he related a case in which a young man had lodged a bullet in his thigh. After some search it was made out near the knee, and by marking the spots on the knee at which it was seen in different positions they obtained an indication of locality which enabled the surgeon to remove it almost at once.—Mr. STANLEY BOYD asked what was the peculiarity of the method which enabled it to yield such excellent results?—Dr. HUGH WALSHAM raised the question whether such short exposures were desirable in cases of pulmonary tuberculosis. He had failed to obtain a shadow in a case of moderate severity which came out with a longer exposure, though he admitted the manipulator might go too far in this direction. He thought, too, that photographs sometimes revealed appearances which would not be seen on the screen.—Mr. CAMPBELL WILLIAMS asked whether dermatitis had ever resulted from these exposures, and he mentioned two cases in which more or less severe inflammation of the dermis had been caused by prolonged exposure.—Dr. EASTES asked whether the retinæ were affected by constant exposure to the rays?—Mr. SHENTON, in reply, said that there was a good deal to be done on the medical side. This was a branch at which they were all working at present but much remained to be learned. He disclaimed any technical knowledge in respect of the manufacture of these tubes and his results were merely empirical. He had found that the large tubes gave better results. Most tubes were made with three electrodes, but he found that two sufficed to obtain these results. He pointed out that for each case there was a correct exposure and any error either way marred the results. He thought photographs should be used to confirm what they had seen on the screen. Some things, however, were better seen in photographs owing to the fact that screens were made of coarse material so that fine details might be overlooked. He had seen nothing of dermatitis except what he got on his own hands. He had no knowledge of any effect on the retina.

OBSTETRICAL SOCIETY OF LONDON.

Exhibition of Specimens.—List of Officers and Council.—Annual Address.

A MEETING of this society was held at 20, Hanover-square, W., on Feb. 6th, Mr. ALBAN DORAN, the President, being in the chair.

The following vote of condolence to the Royal Family was passed by the Fellows:—

That the President and Fellows of the Obstetrical Society of London humbly beg to express their sincere sorrow at the death of their beloved Queen and they further beg to tender to the Royal Family their deepest sympathy and to His Majesty the King the assurance of their loyalty and devotion to the throne.

Mr. HASTINGS GILFORD showed a specimen of Rupture of the Sac of an Early Primary Ovarian Gestation in a woman, aged 38 years. Rupture with severe internal hæmorrhage occurred 14 days after the previous menstrual period. At the operation the Fallopian tubes were found to be intact and there was a rent in the left ovary, with thin irregular edges, with firm clot attached. About two pints of blood had escaped from the rent. The firm clot attached to the rent was believed to be a "blood-mole." Mr. Gilford argued against the hæmorrhage having come from either a tubal abortion or a ruptured matured Graafian follicle.—Dr. T. W. EDEN said that, speaking from a casual examination of the specimen, he doubted if it were really an example of ovarian pregnancy. On naked-eye examination the so-called mole did not show much evidence of being a product of gestation at all, but perhaps the presence of chorionic villi had been demonstrated by the microscope. The specimen differed greatly from the examples of ovarian gestation recently shown to the society by Dr. E. O. Croft and from the classical case of van Tussenbroek in the circumstance that the ovary was little altered in its outline and shape, the cavity in which "the mole" was contained being quite superficial. One of the essential points in the diagnosis of ovarian pregnancy was the demonstration of ovarian tissue in the wall of the gestation sac, and this did not seem to be practicable in the case now before the society, for the wall of the sac appeared to be an adventitious product.—Dr. C. J. CULLINGWORTH, speaking in reference to the condition of the Fallopian tube, said that too much importance should not be attached to this. It had been shown that the tube might very quickly resume its normal size and appearance after tubal rupture, and it was obvious that it would even more readily do so after tubal abortion. He referred to cases reported by himself, the President, and Mr. Bland-Sutton, to prove that the empty condition and innocent appearance of the tube were not incompatible with the gestation having been primarily tubal.—Dr. HEYWOOD SMITH asked if ovarian pregnancy had been observed in the lower animals.—Mr. GILFORD replied and consented to his specimen being referred to a sub-committee for report.

A report of the sub-committee on Dr. Croft's specimen of Primary Ovarian Pregnancy was read, agreeing with his view of the case.

Dr. W. H. TATE showed a Fibroid Tumour with marked cystic degeneration, removed from a patient, aged 63 years, in whom both ovaries had been removed 11 years previously. The woman suffered from severe menorrhagia due to a fibroid which reached up to the umbilicus. After the operation in 1889, when a tubo-ovarian cyst on the right side and the appendages on the left were removed by Dr. Cullingworth, she remained well till 1896, when hypogastric pain recurred and the fibroid was found to be increasing in size. Last month the fibroid had reached 11¾ inches from the pubes and was evidently cystic. Dr. Tate removed the fibroid by abdominal hysterectomy, and the patient recovered. The tumour was found to be a fibroid converted into a loculated cavity containing 42 ounces of coagulable straw-coloured fluid. The case proved that degenerative changes in uterine fibroids might occur after complete removal of the appendages as well as after a natural menopause.—Dr. CULLINGWORTH urged the importance of recording all cases bearing on the liability of fibroids to increase in size and to undergo serious degenerative changes after the menopause.—After remarks by Dr. A. H. N. LEWERS and Dr. HERBERT SPENCER, Dr. C. HUBERT ROBERTS asked if the spaces in the specimen had an endothelial lining. He had not found such a lining in any cystic fibroids of the uterine body, but the spaces contained an easily coagulable serous fluid. He thought that such spaces were due to retrograde degeneration and were not of lymphatic origin. The spaces found in cystic fibroids of the cervix were not uncommonly lined by epithelium.—Dr. TATE replied.

Mr. HUGHES R. DAVIES showed Pessaries for use in cases of prolapsed and retroverted uteri.

The report of the honorary treasurer, Dr. J. Watt Black, was then adopted upon the motion of Dr. C. H. F. ROUTH, seconded by Dr. PETER HORROCKS.

The report of the honorary librarian, Dr. M. Handfield-Jones, was adopted upon the motion of Dr. A. H. N. LEWERS, seconded by Dr. DRUMMOND ROBINSON.

The report of the chairman of the Board of Midwives, Dr. Percy Boulton, was adopted on the motion of Dr. G. E. HERMAN and Dr. C. J. CULLINGWORTH.

The following List of Officers and Council for the ensuing session was then announced, Dr. EDWARD MALINS proposing, and Dr. W. G. GOW seconding, a vote of thanks to the retiring Vice-President and members of council:—President: Dr. Peter Horrocks. Vice-Presidents: Dr. John W. Byers (Belfast), Dr. William Radford Dakin, Dr. John Phillips, and Dr. Edward Malins (Birmingham). Treasurer: Dr. James Watt Black. Chairman of the Board for the Examination of Midwives: Dr. W. R. Dakin. Honorary Secretaries: Dr. Herbert R. Spencer and Dr. Amand Routh. Honorary Librarian: Dr. Montagu Handfield-Jones. Other Members of Council: Mr. Charles Edmund Adams, Dr. A. H. Freeland Barbour (Edinburgh), Dr. George Francis Blacker, Dr. Robert Boxall, Dr. Henry Briggs (Liverpool), Dr. Francis Henry Champneys, Dr. Thomas Vincent

Dickinson, Dr. Charles Owen Fowler, Dr. William John Gow, Dr. Walter Spencer Anderson Griffith, Dr. George Ernest Herman, Dr. Arthur H. N. Lewers, Dr. Thomas Robert Lombe (Torquay), Dr. William Loudon Reid (Glasgow), Dr. William Japp Sinclair (Manchester), Dr. Arthur Francis Stabb, Mr. John William Taylor (Birmingham), and Dr. Charles Percival White.

The PRESIDENT delivered the Annual Address. He remarked that the society, founded in 1859, was within eight years of its jubilee and never stood higher than it did at present for the high quality of the contributions read at its meetings and for the interest taken in its discussions. After reviewing the work of the past year, the President announced that the council had appointed a sub-committee to draw up an "index" founded upon the various systems of teratological nomenclature at present in use and upon the specimens in the London museums, for it was felt that an index of this kind would be of great value to Fellows showing specimens before the society and might well become a standard system of nomenclature, at least for English writers. The President read obituary notices of the five Fellows of the society who had died in 1900—namely, one honorary (and original) Fellow, Sir W. O. Priestley, and four ordinary Fellows, Dr. W. Chapman Grigg, Mr. Claude Clarke Claremont, Dr. Horace Howell, and Dr. John Baptiste Potter. Finally, the President, in resigning his office, thanked the society for the friendly support which they had granted him and congratulated them on their choice of a successor.—A vote of thanks to the retiring President for his address and for his able chairmanship was moved by Dr. F. H. CHAMPNEYS, and seconded by Dr. J. WATT BLACK, and was carried by acclamation.—The PRESIDENT replied.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

Hospital Isolation in Scarlet Fever.

A MEETING of this society was held on Feb. 8th, Dr. J. C. MCVAIL, the President, being in the chair.

Dr. C. K. MILLARD, medical officer of health of Burton-on-Trent, read a paper on the Influence of Hospital Isolation in Scarlet Fever. The influence of hospital isolation on the spread of epidemic and infectious diseases could not, he maintained, be considered as a whole; each disease must be studied separately, for it did not follow from the success attending such measures with small-pox or cholera that they were equally applicable to scarlet fever or measles. After quoting the opinions expressed by the late Sir George Buchanan and Dr. A. Newsholme that such statistics as those with which they had at present to be content were not conclusive in favour of the influence of these hospitals in reducing the prevalence or the fatality of scarlet fever, and that they must wait for further experience with the better recognition of factors as yet ill understood or undiscovered, he pointed to the admission of Dr. Wilson of Ayr that the decrease in the mortality from scarlet fever of late years, though coinciding in point of time with the adoption of notification, could not be wholly due to these measures, since it had been likewise observed in towns where no provision had been made for isolation, in rural districts without sanitation, and in the United States of America, where isolation was unknown. He quoted also the opinion advanced by Mr. E. D. Marriott of Nottingham that isolation or, as he described them, aggregation hospitals actually contributed to the diffusion and increased virulence of the infection, He then proceeded to give an account of his own inquiries. He had obtained from 113 towns—viz, 31 great towns, 81 smaller towns, and the County of London—returns of the population, cases notified, cases under five years of age, cases isolated, and deaths registered, as well as the personal opinions of the medical officers of health as to the value of isolation in reducing either the mortality, the prevalence, or the fatality. The majority of these were favourable, but apparently mere personal impressions not based on strict inquiry. Anticipating objections, he maintained that all the requisite conditions of a scientific experiment were present; the disturbing influence of epidemics and local circumstances could be eliminated by grouping towns and taking series of years; and they had control experiments in towns that had never attempted isolation at all. The contrast between the fearful mortality from scarlet fever prior to the years 1875–80 and the insignificant death-rate and fatality irrespective of the prevalence in subsequent years had been ascribed to influence of isolation hospitals, the adoption of which coincided with "the great slump," but, as his diagrams showed, it occurred in a large proportion of these towns before the erection of the hospitals had been begun, and was equally pronounced where there had never been any such hospitals. He had based all his calculations on the total populations or in single towns on the actual number of cases, since he could not obtain the preferable basis of the number of persons under 10 or 15 years of age. In Huddersfield with the lowest general death-rate and the lowest infant mortality of any of the 33 great towns, with notification and isolation carried out for over 20 years, and the cases treated in hospital rising from 67·7 per cent. in 1880–89 to 90·4 per cent. in 1890–99; the average annual number of cases had risen from 256 in the former to 427 in the latter, the mean attack rate having been 4·31 per 1000 and the fatality 4·49 per cent, as against 4·45 and 3·29 in a group of four large towns without any isolation. The lower fatality of hospital cases was often urged in favour of those institutions, but in Huddersfield the difference was so great—viz., 3·18 per cent. for hospital cases and 16·91 for home ones in 1890–99, or in the last two years 1·8 and 1·5 against 18·2 and 28·5—that it could not be wholly due to the treatment. He criticised in like manner the statistics of other large towns in order with like results, the apparent reduction at Derby being explicable by the actually decreasing birth-rate in an increasing population. At Oldham, in consequence of small-pox in 1892, the hospital was closed to scarlet fever for two years, yet during those years and that following there was less fever in the town than ever. Swansea, on the other hand, a town the sanitary conditions of which were none of the best, and where prior to 1880 the mortality in successive epidemics had been frightful, had, without an isolation hospital, shared in the general improvement, the attack rate for 1891–99 having been 5·74 per 1000, and the fatality in 1895–99 only 2·19 per cent., and in 1896 three deaths in 549 cases. Equally negative results were shown by the statistics of greater and lesser towns when grouped as those in which over 40 per cent., under 40 per cent., and none or practically none of the cases were isolated in hospitals, and whether the periods taken were 18 or 10 years, and again when the Lancashire towns, excluding Manchester, Salford, and Liverpool, were compared. They were, he considered, driven to the conclusion that the aggregation of cases in hospitals, under the name of isolation, developed a type of fever of greater persistence and infectivity, of which the "return cases" were the product, and which would in course of time be felt in a generally increased virulence of scarlet fever throughout the land, nor had he any trust in convalescent hospitals as a means of avoiding the danger. A full and authoritative inquiry was needed.

Dr. WILSON (Ayr) considered that no decisive evidence had been as yet adduced of the beneficial influence of hospital isolation, and Sir Richard Thorne, in the Majority Report of the Vaccination Commission, admitted this when he ascribed the reduced mortality from scarlet fever to a recent change of type, and suggested that the advantages of hospital treatment might have been over-estimated, even in the case of such diseases as small-pox and cholera. The diversity of opinion among experts indicated the need for inquiry with a view, not to the abandonment, but to reforms in their administration—a matter of great difficulty. Return cases occurred as often in private as in hospital practice, and in the latter the symptoms often did not develop until after the patient had left the hospital.

Mr. SHIRLEY MURPHY maintained that the real question, what the mortality would have been in the absence of the hospital, could not be solved by such statistical methods. Inquiry was needed, but the collection and collation of mere opinions by a Royal Commission would be useless. It must be the individual observation year after year of the cyclical and seasonal prevalence of the disease as well as of casual outbreaks, for there were many causes of prevalence and means of infection known and unknown, and the provision of hospitals could not be expected to alter the laws of natural phenomena. The words of Sir George Buchanan as to their ignorance of these, even the obvious connexion between season and disease, were and would long be as true as when uttered. But personal contact was a cause of the spread of the disease, and if isolation could not be secured at home it must be provided in hospital.

Dr. P. BOOBBYER (Nottingham) would be the last to defend the present management of fever hospitals, which were everywhere overcrowded—grossly so at Nottingham; yet in 1899 they had only 16 deaths in 1200 cases, and no increase in the mortality outside, which was also the lowest on record. There was absolutely no evidence forthcoming of the evolution of a new type of infection in hospitals, and the equivalents of return cases were at least as frequent in private practice, though often unnoticed.

Dr. A. NEWSHOLME (Brighton) considered Dr. Millard's statistics for each year most valuable, but averages for groups of towns were of no practical use, for not only might the circumstances, known and unknown, of the several towns differ, but the recurrent maxima of prevalence, the meaning of which was a great desideratum, falling in different years were thereby deprived of all significance. Personal infection was, at any rate, one cause, and with the isolation they had one cause less. If the mortality in America had sunk without hospital isolation it must be owing to some unrecognised factor common to both continents and was no argument against the adoption of another means in addition. Home cases frequently spread the infection after the most complete disinfection possible.

Mr. B. BROWNING (Weymouth) remarked that home isolation was perfunctory, whereas isolation in hospital was real, though too often combined with overcrowding. In his town they had had 127 cases in a single outbreak, nearly all sent to the hospital, but no return cases whatever. The cause was found to be the milk-supply from three infected dairies outside the district.

Mr. T. ROBINSON (Leicester) maintained that Dr. Millard's method of grouping effaced sanitary conditions, which were evidently powerful factors. Why but for such conditions had Bolton and Oldham with equal isolation such different mortalities, and Wigan and Warrington like mortalities with such different proportions of isolated cases?

After remarks by Dr. W. A. BOND (Holborn), Dr. E. GWYNN (Hampstead), Dr. C. SANDERS (West Ham), and some others Dr. MILLARD replied, reiterated his arguments, and defended his grouping of towns as tending by obliterating other differences to emphasise the one in question. He, however, would not ask for the suppression of isolation hospitals, but merely for a searching inquiry into, and reform of, their administration and he was ready to let go his speculations as to an intensification of the infection.

LIVERPOOL MEDICAL INSTITUTION.

Resolution expressive of Condolence with His Majesty the King on the Death of Her Majesty the late Queen and of Attachment to the Throne.

THE eighth ordinary meeting of this society was held on Jan. 31st, Mr. EDGAR A. BROWNE, the President, being in the chair. At this meeting, which was very largely attended, the ordinary business was entirely suspended and the members met together to express as individuals and as a body their sorrow at the loss of their beloved Queen and their sympathy with and attachment to the throne. The PRESIDENT, Dr. NEVINS, Sir WILLIAM BANKS, Dr. W. CARTER, Dr. ARTHUR EVANS, Professor A. M. PATERSON, Dr. E. W. HOPE, and Dr. MACFIE CAMPBELL made speeches referring to the example, beauty, and dignity of our dead Queen's life, and commenting upon the unparalleled advances made in all branches of science, and more especially with reference to those made in medicine, surgery, and public health, during the Victorian era. The following expression of sympathy, moved from the chair and adopted in silence, the members all standing, was directed to be forwarded to the King through the honorary secretary.

TO THE KING'S MOST EXCELLENT MAJESTY.

The members of the Liverpool Medical Institution (founded in 1837, the year of the Royal Accession) desire to record their deep sorrow at the death of their beloved Queen, who for more than 60 years has not only ruled this great Empire with justice and moderation, but has invariably shown wise and humane sympathy with the efforts of all classes of intellectual workers in the kingdom.

They desire to offer to Your Majesty their profound sympathy in your bereavement and to assure you of their attachment to your person and throne.

Exhibition of a Case.—The After-history of Cases of Uterine Cancer treated by Vaginal Hysterectomy.

The ninth ordinary meeting was held on Feb. 7th, Dr. MACFIE CAMPBELL being in the chair.

Mr. G. P. NEWBOLT showed a girl, aged 11 years, upon whom he had operated for the relief of deformity caused by the fact that the left leg was two and a quarter inches longer than the right. By removal of one and three-quarter inches of bone from the elongated left femur the two limbs were made nearly equal in length and the deformity was corrected. The case was illustrated by lantern slides.—Dr. W. ALEXANDER and Mr. RUSHTON PARKER discussed the case and Mr. NEWBOLT replied.

Dr. H. BRIGGS read a paper on the After-history of Cases of Uterine Cancer treated by him by Vaginal Hysterectomy. Between March 24th, 1899, and Nov. 7th, 1900, he had operated on 84 patients. Concerning the after-results, it was shown that where recurrence and death occurred in the series death was not later than the end of the fourth year; consequently a period of over four years was apparently a fair time-test as to radical relief. A report within a year on a series of cases was useless. Dr. Briggs for convenience had subdivided his cases into three groups. Group 1, adapted to the time-test of upwards of four years, included the patients operated upon before the end of 1896, 33 in number, less one who died from operation and two who had escaped observation. Of the remaining 30 six (or 20 per cent.) were alive and radically relieved (from four and a half to 10½ years after operation). Group 2, 38 operations during three years (1897, 1898, and 1899), two deaths from operation, leaving 36 patients, of whom 16 were living and known to be free from recurrence (from one and a quarter to three and five-sixths years' interval) and two living with known recurrence. Group 3, the cases of 1900, referred to 13 patients whose after-histories were too recent to be of any service; one patient died—the result of operation. Most attention was devoted to Group 1. The cases were described and the occasion became the equivalent of an audit, as evidence of the character of the uterine growth was produced. The evidence was (1) a microscopical section for the histological structure; (2) a recent water-colour drawing of the growth *in situ;* and (3) the preserved specimen of the uterus. This threefold evidence was complete in four instances and in the other two the absence of the preserved specimen was compensated for by the excellence of the artists' reproduction. In none was the evidence of the microscopical structure wanting. The proof of radical relief in six cases was apparently established. Referring to Group 2 Dr. Briggs explained that his object was chiefly to show the high ratio of early recurrence. Out of the 71 patients operated upon prior to the end of 1899 three died from operation, 19 had recurrence and died within the first year, and 15 had recurrence and died within the second year. No other causes of death were certified. This ratio of early recurrence was to be deplored; it was often noticed in published records, but putting Group 1 and Group 2 together there were 22 patients out of 66 who had been traced alive and apparently free from recurrence from one and a quarter years to 10 years after operation. In taking the causes of early recurrence into consideration Dr. Briggs said that they were the same as the causes of incomplete operation—delay in diagnosis, the difficulty in ascertaining the limits of the growth, faulty methods of operation, and restricted limits of operation. Each of these causes was alluded to and reference was made to the recent revival of the abdominal route for operation. A summary was given of the morbid anatomy of the 84 growths examined after operation; three were sarcomata, 15 of the 66 carcinomata were malignant adenomata (after Ziegler), and these last-named growths were especially apt to be confused with chronic glandular hyperplasia and simple adenoma by microscopical methods where the clinical signs and symptoms left a doubt. In the body of the uterus malignant adenoma was diagnosed often under difficulties of access to the growth and of structural differentiation under the microscope; the naked-eye features of curetting should be noted. Probably the fashion of prescribing medicinal styptics was in the absence of a diagnosis to be deprecated: it misled patients in many instances into believing that the medical attendant really thought that medicine might cure them of their ailments. The four deaths in the series of 84 cases were: one from shock (30 hours), two from peritonitis (on the sixth and eighth days), and one from embolic septic pneumonia on the thirty-fifth day. They all occurred amongst the more advanced cases of cancer.—Dr. E. T. DAVIES remarked that out of Dr. Briggs's 84 cases there was a primary mortality of 5 per cent. which should not be ignored; that out of 14 cases of cancer of the uterine body which Cullen said was three times less malignant than cancer of the cervix there was a mortality of 50 per cent.

from recurrence, in periods of from six months to three years; and that the seven cases "still living" had only been operated upon at periods from 18 months to five years, which periods Dr. Davies considered too short to speak favourably on these patients. Referring to the tables which included 49 cases of carcinoma of the cervix (the most malignant site of all), 33 patients, equivalent to 67·3 per cent., died in from one to three years, leaving only 16 patients living for periods of from six months to six years, and these periods he considered too short to prognosticate from except in an unfavourable direction. Dr. Davies considered that the surgery of cancer was exactly in the same position as it was when he left it five years ago—a hopeless chaos.—Dr. T. B. GRIMSDALE said that the success measured by radical cure was not great, but there was a distinct gain in the average length of life after vaginal hysterectomy; moreover, the life of the patient was made more bearable—there was the removal of the bleeding and offensive discharge of cervical cancer and of the pain in body cancer. The small mortality of the operation encouraged operators to perform vaginal hysterectomy as a palliative measure, and this, of course, would make the results as far as cure was concerned appear even worse than they should.—Dr. J. E. GEMMELL considered that Dr. Briggs's paper and analysis of cases with the complete record as to pathological condition and after-history comprised not only a valuable record, but were a distinct encouragement to the treatment by vaginal hysterectomy within such limits of selection as fairly free mobility downwards of the uterus, or even (as a palliative measure and freeing the patient from much after-misery and distress) when there were some slight infiltration and thickening of the broad ligaments. The great difficulty was that patients did not seek advice early enough and the bulk of the cases when first seen were inoperable. Dr. Gemmell's cases of vaginal hysterectomy only dated back three years and therefore were without the time-test of four years, but up to the present time he had had no deaths from the operation and several of the earlier cases had, in his opinion, amply justified this method of treatment.—Dr. ALEXANDER also spoke and Dr. BRIGGS replied.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Hæmatemesis.

THE fifth ordinary meeting of this society was held on Feb. 6th, Dr. A. G. MILLER, the President, being in the chair.

The evening was devoted to a discussion on Hæmatemesis, which was opened by a paper read by Mr. MAYO ROBSON of Leeds. This paper was published in full in THE LANCET of Feb. 9th, p. 375.

Dr. J. O. AFFLECK, who followed, thought that the results obtained by Mr. Robson should be ascribed not only to his surgical dexterity and aptitude but quite as much to the thought and care which he had given to the cases and to his large clinical experience. There were two points which seemed to him of importance as regards gastric ulcer. 1. Diagnosis.—There was no absolute diagnostic sign though one could get very near to an absolute diagnosis. The pain referable to an ulcer of the stomach was not always reliable either as regards the situation or the chronicity of the ulcer. Sometimes the pain of a gastric ulcer was misleading—e.g., the pain which was often complained of as starting immediately after the ingestion of food and as pointing to an ulcer at the cardiac end of the stomach. This pain might really not be due to the direct irritation by food but might very likely be caused by the movements set up in the stomach by the presence of food in it, or again it might be due to the outpouring of acid secretion. The pain connected with an ulcer of the stomach might also be reflected and might be referred to one or other iliac region. A careful examination of the gastric contents or vomit by chemical means was often of the greatest value to the physician. In chronic ulceration of the stomach they found alterations in the size and shape of the organ—e.g., dilatation, contraction, or hour-glass constriction. The aid to diagnosis caused by the evolution of carbonic acid gas in the stomach had always seemed to Dr. Affleck a questionable proceeding. Some gastric ulcers were very easily ruptured and he knew of one case where this had happened after the patient had taken a cup of coffee. Though he could not recollect a case of rupture as having been recorded due to distension by gas, still it might occur. He had frequently demonstrated the size of the stomach by simply manipulating the skin over the viscus, thus causing the muscular coats of the stomach to contract and so map itself out. It was not every acute or chronic ulcer which bled, but a recurrent hæmorrhage was very characteristic of chronic gastric ulcer. Acute gastric ulcers were characterised by sudden and violent hæmorrhages taking place within a few hours of one another. 2. Treatment.—As regards the treatment of an acute ulcer one must trust to medical aid in the first instance; but the question always was, How much good did medical treatment really avail? Most of the so-called styptics might be used without the slightest benefit. Dr. Affleck had found most benefit to be obtained from the employment of morphia and absolute rest—both mental and physical rest being thus obtained. The generality of acute ulcers got well of themselves, and so one could in most instances allay the mental distress caused by the bleedings by telling the patient or friends that in all likelihood the hæmorrhage would soon cease. Mr. Mayo Robson advocated operative measures after a second hæmorrhage, but Dr. Affleck said that he would like a little more evidence regarding this. He recollected the case of a girl who died from hæmorrhage and the post-mortem examination showed the presence of 20 ulcers in the stomach and several in the duodenum. Many acute bleeding ulcers underwent complete spontaneous cure. The tendency of chronic ulcer was also to heal. They often found that cicatrisation was almost complete but not entirely. These were the cases which seemed to him to call for operation, as nature's efforts to heal these chronic ulcers often caused much suffering to the patient. Rest and treatment in these chronic cases often led to cures which were more apparent than real, as relapses very soon followed as a rule, the ulcer never having been perfectly healed. Surgical intervention then seemed to him to be chiefly indicated in such chronic cases, but in acute ulcers Dr. Affleck had his doubts as to its advisability. Many patients would much rather submit to a merely mitigating treatment than suffer the much more severe method of treatment by operation. Unless the surgeon was one well versed in the symptoms and diagnosis of gastric ulcer he should not be without the help of the physician.

Sir WILLIAM GAIRDNER took part in the discussion and said that he recollected many cases where the patient's life might have been saved by operative measures.

Professor W. S. GREENFIELD said that while not daring to think that Mr. Mayo Robson's statistics were inaccurate, yet it was possible that they might be capable of other interpretation. It would be most desirable that physicians should lay down definite diagnostic rules for gastric ulcer and for defining the positions of such. He thought that in the case of duodenal ulcers the risks to life were so great that operative measures should be adopted, as also in the case of ulcers of or near the pylorus, even within two inches of it. With reference to the treatment of chronic ulcer of the stomach, it was not the custom here to allow such cases to go about; the important point was to keep such patients at absolute rest. Practically he had found the employment of large doses of iron used persistently of very great value in the treatment of such.

Mr. F. M. CAIRD said that the question really resolved itself into what was to be done in the case of bleeding from the stomach. A certain proportion of cases died from hæmorrhage from the urinary bladder. The treatment of such cases, however, was to rest the bladder by putting in a tube. He would do the same with the stomach—give it absolute rest by performing gastro-enterostomy.

Mr. DAVID WALLACE asked, first, whether Mr. Mayo Robson was in favour of operating for chronic gastric ulcer which had resisted treatment and where the patient was running the risk of perforation and hæmorrhage, and in the second place what was the proportion of hæmoglobin and the number of the red blood corpuscles in a case which he would consider beyond remedial measures. He asked if Mr. Robson put any stress on the blood conditions as regards operation.

Dr. ALEXANDER JAMES said that he had never met with any case of hæmatemesis so severe as to require surgical treatment. On looking over the notes of his infirmary cases he found that he had treated 50 cases of gastric ulcer and in 46 of these hæmatemesis was severe (in one such case the red corpuscles had fallen to 450,000 and the hæmoglobin to 6 per cent., and yet the patient recovered perfectly). In the

treatment of such cases deprivation was, he thought, better than refreshment and he had not found any good to result from the use of astringents.

Dr. BYROM BRAMWELL said that at first sight it might be thought that the surgeon tended to interfere rather too much. He hardly thought that modern statistics would bear out what Mr. Mayo Robson had stated. The modern treatment of gastric ulcer was much more beneficial than that formerly employed. He considered rectal feeding and prolonged rest the most potent factors in treatment. Personally, he had never had a case ending fatally as a result of gastric ulcer alone.

Dr. JOSEPH BELL and Dr. CHARLES W. MACGILLIVRAY also spoke.

Mr. MAYO ROBSON, in his reply, stated that he had employed not antiquated statistics but very recent ones. Thus, Rodman (June, 1900) had made a very careful analysis of deaths from gastric ulcer and found that 8 per cent. were due to hæmorrhage from such ulcers. Dreschfeld gave 3½ per cent. and Lebert 3 per cent. The statistics he used had been obtained from a very large number of cases investigated. Taking these all over it might be said that from 3 to 6 per cent. died from hæmorrhage. 3 per cent. died from acute hæmorrhage and Mr. Robson did not say that these could be saved, but the other 3 per cent. died as a result of chronic hæmorrhage, and these cases could be saved by surgical means. Gastro-enterostomy acted as a drain to the stomach; it put a stop to the vermicular action of the stomach and checked hyperacidity. The operation gave almost absolute physiological rest.

The PRESIDENT conveyed the hearty thanks of the society to Mr. Mayo Robson for coming to Edinburgh and giving such an interesting communication.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—A meeting of this society was held on Jan. 31st at 20, Hanover-square, W., Dr. Frederic Bagshawe (St. Leonards), the President, being in the chair.—The President referred in feeling terms to the death of Her Majesty Queen Victoria and proposed the following vote of condolence with His Majesty King Edward VII., which was passed unanimously:—

The Fellows of the British Balneological and Climatological Society in meeting assembled humbly approach Your Majesty with the expression of our deep sorrow at the loss sustained by Your Majesty, the Royal Family, and the nation by the death of our beloved Sovereign, Queen Victoria.

—Professor Clifford Allbutt, in opening a discussion on Anæmia and its Therapeutics, said that he undertook the task allotted to him with more than diffidence because there were among his hearers many who were far more versed in the management of anæmias by climatic and bath treatment than himself. Nevertheless, he would urge that the discussion should be confined to the treatment of these diseases by physical means or otherwise it might wander over too large a sphere to be useful. What latitude was to be given to the name of anæmia? The first division Professor Allbutt proposed was that into simple anæmias and hæmolytic anæmias, the former being indicative of some nutritive or physical deviation and the latter of the presence of a toxic cause of deterioration, such as the cachexias of lead, of tubercle or cancer, and so forth. Yet even this distinction could not be pressed, as in some anæmias supposed to be simple there might be a latent toxic cause, as, for instance, was alleged by some observers in chlorosis. In the consideration of the simple anæmias they were now deprived of some of the help which they believed themselves to possess, for a superficial drop of blood as taken for microscopical examination was by no means always, or even generally, an average specimen of the whole blood. Furthermore, the bulk of the blood mass in the body turned out, not unexpectedly, to be a factor of considerable importance. At last this factor, as it would seem, could be measured by the method of Haldane and Lorrain Smith, of which Professor Allbutt gave a brief account. From these researches it had been stated that in all anæmias there was an increase of the blood mass, or in all simple anæmias, but to clinical observers this seemed a very wide proposition. It was, however, in accordance with ordinary experience that the blood mass should prove to be increased in chlorosis. Professor Allbutt had been of opinion that in ordinary anæmias, such as that of convalescence from acute disease, that of hæmorrhages, and that which was common in (and even characteristic of) ill-nourished persons, there was a reduction of the blood as a whole, corpuscles and plasma. In chlorosis, on the other hand, the dilatation of the heart, and the voluminous, if not high-pressure, pulse seemed to signify increased blood bulk. How iron cures chlorosis was a deeper mystery than ever, as it could no longer be believed that it did so by building up hæmoglobin, but if an excess of plasma were a fault in chlorosis, removal to high altitudes would seem to be a better adjuvant in treatment than the use of spa waters, which would have the disadvantage of adding to the bulk of blood already excessive. Professor Allbutt then drew attention to the interesting work which had just appeared by Dr. George Oliver, in which were recorded many long and laborious series of observations on the composition of the blood (as also of blood-pressures) under varying conditions. Among other deductions from his observations was an explanation of the well-known apparent increase of red corpuscles in persons removed to high altitudes—namely, by a concentration of the plasma. In this view the increase was not absolute but relative. Dr. Oliver ascertained that the concentration of the plasma was due not to elevation as such, but to a greater dryness of climate; and in proof of this position he found that further experiments carried on in dry climates such as Egypt, though at sea-level, produced the same apparent increase of red corpuscles—that was, the same concentration of plasma. Professor Allbutt urged that chlorosis in the discussion should be distinguished from the anæmia of ill-nourished or impoverished persons which needed other means of treatment. Starvation anæmia was found in both sexes, but chlorosis was peculiar to women. It would not do, therefore, to take all anæmias occurring in women as chlorosis, whereby many mistakes would become current—e.g., the anæmia of arterial "hypoplasia" was not chlorosis; it was found in both sexes and was not attended by increase in the bulk of the blood.—Dr. G. A Leon (Sidmouth) said that chlorosis was very prevalent in the South Devon valleys, where the relative humidity was high. The majority of the sufferers were domestic servants, but there were also many work-girls and girls living at home. No deficiency of light, air, or food was to be noticed in the history of the cases. The teeth of the youth of South Devon were deplorably defective and no doubt this was a factor in the causation of the disease. It was interesting to observe the relationship of climate to chlorosis and the hæmorrhages—e.g., menorrhagia. To both classes of disease a damp locality and low altitude were unfavourable, but yet the chlorotic patient did not menstruate at all as a rule, and if she did the loss was but scanty.—Dr. Sansom said that he had seen some cases of chlorosis where the heart seemed to be dilated and others in which it was apparently diminished, but the physical signs, especially over the apex, were the same in both cases. He thought that in the majority of chlorotics the heart was smaller than normal. He considered that the pulmonary artery was often narrowed by hyperplasia of the vessel and said that in such cases climatological and balneological treatment would prove useful. Chlorotic patients should breathe the best oxygenated air and be induced to practise respiratory exercises.—Dr. William Hunter said that Professor Allbutt had emphasised the fact of the variability in composition and constitution of the blood, and he (Dr. Hunter) would allude to another feature perhaps even more important—viz., the remarkable stability of the blood, not only of its corpuscles but of its plasma, under the most diverse and unfavourable influences, so that anæmia could be divided into two great classes. The first was that associated with all sorts of wasting diseases, and in that form the anæmia was very slight. Starvation or deprivation of food caused little change in the blood though it diminished its bulk, as it did that of ordinary muscle. The other class of factors affecting the blood was that which Professor Allbutt had very properly drawn special attention to—changes far in excess of those caused by nutritional variations—i.e., changes in the proportion of corpuscles, in the proportion of hæmoglobin, and in the fluid. Such anæmia was exemplified by the disease known as chlorosis but still more so in the toxic anæmias or hæmolytic anæmias, the agencies of which were of a totally different character.—Dr. Ewart said that clinical confusion was apt to occur between the cases of true chlorosis and those of anæmia in working girls due to dyspepsia and malnutrition from tender and decaying teeth. The latter form remained refractory to

treatment and apt to relapse so long as the cause was overlooked and unrelieved. Among the pyrexial cases sometimes occurring in young women he had for some years recognised two groups; in the much larger group the pyrexia was simply due to the results of dental disease, in the much smaller group the cause was not obvious and this might for the present be distinguished as the group of true pyrexial chloro-anæmia.—Dr. Collins and Dr. W. V. Snow (Bournemouth) also spoke.—The meeting was adjourned to March 15th.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on Jan. 30th, Dr. Robert Jardine, the President, being in the chair.—The President showed a case of Opacity of the Cornea in the New Born. After birth the right cornea was noticed to be hazy, getting denser towards the centre. The pupil was difficult to distinguish, but reacted to strong light. Examination showed irregularity of surface epithelium of the cornea, while the underlying tissue had discrete spots of a fluffy appearance closely packed together. No vessels or tracts of such were seen. The opacity gradually cleared and on the seventh day when shown at the meeting was only visible at one side. The condition was probably due to compression of the eyeball during parturition, as the right upper eyelid and the right temple were bruised.—Dr. J. Edgar showed specimen and read notes of a case of Complete Tubal Abortion in which the intact three weeks' old ovum was found lying in the pouch of Douglas. The patient, aged 30 years, a nullipara, was admitted to the Samaritan Hospital in a collapsed condition and complaining of pain most severe in the left iliac region. The abdomen was distended and tender and a soft boggy mass was felt per vaginam behind the uterus. The abdomen was full of blood and the left tube was dilated at the outer end to the size of the index finger and was patent. The patient made a good recovery.—The President and Dr. Munro Kerr each read notes of cases of Sudden Death in the Puerperium from Pulmonary Embolism. In one case the heart was shown with a large ante-mortem clot in the right ventricle extending up into the pulmonary artery.—The President read a paper on a rare case of Spontaneous Rupture of the Uterus occurring without warning and no obstruction to labour. The patient, a woman, aged 32 years, vii.-para, was brought into the Glasgow Maternity Hospital at 11 A.M. on Jan. 26th, 1900, owing to hæmorrhage early in the first stage. Dr. Jardine examined her one and a half hours after admission. The bleeding had ceased, the pains were good and increasing in force, but the patient complained of pain low down at the left side of the abdomen. The child presented in the first position. The uterus was not overdistended and showed no signs of internal hæmorrhage. The cervix was of the size of a crown piece; the membranes were intact. Labour seemed to be progressing naturally, so nothing was done. At 2 P.M., three hours after admission, the patient had a violent pain and screamed out that something had given way. She had three violent uterine pains in quick succession and then collapsed completely. The resident, Dr. W. F. McEwen, found the os fully dilated and intact and the head engaged. He delivered with forceps without difficulty and the birth of the child was followed by a quantity of blood-clot, the placenta being removed at once. A large tear was now noticed involving the cervix and extending upwards in the long axis of the uterus to near the fundus. The rent was plugged with iodoform gauze and a saline infusion and stimulants were given, but the patient died in a few minutes, just as Dr. Jardine arrived. Dr. A. R. Ferguson, pathologist, made a histological examination of the uterus. The muscular fibres were degenerated at the seat of the rupture, many being swollen and hyaline in appearance, and nuclear staining practically absent. Similar appearances were noticed at a distance from the seat of the tear. The muscle fibres at the seat of the tear were for the most part atrophied and shrunken and in many places showed transverse or irregular fractures of muscle substance, nuclear staining being absent. The elastic tissue fibres were relatively scanty near the ruptured edge and stained more feebly than elsewhere, whilst many were broken up and presented slight irregularity of contour. Dr. Jardine referred to a similar case occurring five years ago in a nullipara, there being also no obstruction to labour to account for the rupture. He also referred to a case reported by Dr. Michael Poroschin in the *Centralblatt für Gynäkologie*, February, 1898, which was at first diagnosed as one of accidental hæmorrhage. Dr. Jardine thought that the hæmorrhage in his own case might have been due to incomplete rupture, as in Dr. Poroschin's, since the patient complained of pain in the left side, and that later the tear extended and became complete, the involvement of the cervix being due to forceps delivery. A case of Hindle's was reported in the *British Medical Journal* of Feb. 10th, 1894, where the elastic tissue was almost entirely absent, and rupture was ascribed to this. Such cases of rupture could not be avoided, as there was no obstruction to labour and no warning till it actually happened.—Dr. A. W. Russell read notes of a case of Placental Polypus after Full-time Labour and showed the specimen which was of the size of a small hen's egg. There was more or less persistent hæmorrhage in the puerperium and the polypus being discovered as the cause was removed.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 31st, Dr. Wearne Clarke, the President, being in the chair.—Dr. G. Wilkinson showed a boy, aged 10 years, suffering from Spontaneous Dislocation of the Hip occurring during enteric fever six months previously.—Dr. A. Rayner showed (for Dr. J. W. Martin) an Ovarian Sarcoma removed from a girl, aged 17 years.—Mr. S. Snell introduced a man, aged 36 years, from whom he had removed an Encapsuled Spindle-celled Sarcoma from the floor of the orbit.—Mr. Snell showed the specimens from a case of Sarcoma of the Choroid recurring in the orbit. In July, 1897, the sclerotic was punctured for detached retina. At this time if a sarcoma was present it must have been very small and have escaped detection. In November, 1898, the patient was again seen, when the eyeball was filled with an intra-ocular growth (sarcoma). When seen next, in the early part of May, 1900, the growth was springing from the orbit, chiefly its floor. This was removed and the orbit was cleared out, and chloride of zinc paste was applied, since which time there had been no recurrence. The patient was a man, aged about 60 years. The tumour was a large round-celled sarcoma.—Dr. S. White showed the following cases:—1. Two women with Unusual Breast Tumour. 2. A woman from whom he had removed the Right Upper Maxilla for Sarcoma. 3. A youth the subject of Paralytic Talipes Equinus whose tendo Achillis had been divided into three vertical slips, two of which had been utilised for lengthening the contracted tendon, while the third slip was brought subcutaneously to the front above the outer melleolus and attached to the extensor of the toes. The patient was able to flex the ankle-joint and the deformity was entirely overcome. 4. Seven cases of Resection of the Knee-joint for disease. In each case the synovial membrane, the patella, and all diseased cartilage and bone were removed and the femur and tibia were united by two silver-wire sutures. No drainage was employed but the posterior half inch of the skin wound on either side was left open. Rigid asepsis was enforced and in all the cases the wound healed without suppuration under the first dressing. Bony union had taken place in all. 5. Three cases of Gastro-enterostomy for Fibrous Stricture of the Pylorus with Gastric Dilatation. In all three symptoms of obstruction had been present for upwards of two years and had been entirely removed by operation. In one case the patient had had three attacks of gastric tetany. The method of operating had been to implant the upper end of the jejunum on the anterior surface of the stomach by simple suturing without any mechanical support.—Dr. H. Peck read a paper on an Outbreak of Diphtheria in a Boarding School considered with regard to the Value of Bacteriological Examination. The school, which was well situated, dry, and in good sanitary condition, had about 50 boarders and 50 day scholars. On Oct. 5th two boarders complained of sore-throat and bacteriological examination showed the presence of diphtheria bacilli. The day school was dispersed and one boarder, A B, was allowed to return to her home on the understanding that she would not be allowed to return to school until swabbings had been taken from her throat and found satisfactory. A third case occurred on Oct. 8th. Swabbings were taken from the throats of all the boarders, boarding teachers, and domestic servants, and on Oct. 13th all boarders who had shown negative results were removed to another house, while the three patients and two who had shown positive results, though they exhibited no symptoms, were separately isolated. On Nov. 5th all the scholars, with the exception of A B, reassembled at the school which had been carefully disinfected. All the boarders showed a clean bill of health bacteriologically. A B returned on

Nov. 12th, went home on the 16th, and on the 19th was reported to be suffering from diphtheria. It then transpired that this patient's throat had not been examined bacteriologically, though she had been using an antiseptic throat wash. On the 18th five other boarders were suffering from slight ailments and were removed to the second house. In these cases bacteriological examination gave three positive and two negative results. Swabbings were then taken from all the boarders and day scholars, with the result that 28 showed the presence of diphtheria bacilli and the school was "broken up," only the children who gave positive results being detained. Dr. Peck emphasised the immense value of systematic bacteriological investigation in cases of suspicious sore-throat. It was well known that diphtheria might be transmitted by individuals in perfect health but who nevertheless carried the bacilli in their throats. One such case occurred in this outbreak. An interesting point was the length of the incubation period in the case of A B, which was nearly five weeks.

OTOLOGICAL SOCIETY OF THE UNITED KINGDOM.—A meeting of this society was held on Feb. 4th, Sir W. B. Dalby, the President, being in the chair.—It was resolved that the following address be presented to His Majesty the King:—

May it please Your Majesty, we, the President and members of the Otological Society of the United Kingdom, in meeting assembled this day, beg dutifully and humbly to offer to His Majesty King Edward VII., and to the other members of the Royal Family, their profound and heartfelt sympathy on the occasion of the death of our beloved Queen Victoria, and to assure His Majesty of their feelings of loyalty and devotion to his throne and person.

—Dr. Dundas Grant showed two patients upon whom he had performed a radical mastoid operation for Cholesteatoma with preservation of the lining membrane and with Korner's plastic flap. In the first case, that of an elderly woman, the cholesteatomatous débris was scraped away but the lining membrane was left. He hoped that the lining membrane would serve as a fair substitute for the pseudo-epidermic lining which they endeavoured to secure in such cases. The second case was treated in a similar way.—Dr. Milligan showed a male patient on whom the radical mastoid operation had been performed for chronic suppurative disease of the epi-tympanum and adjoining mastoid cells. The antro-tympanic cavity had been successfully grafted. The result was good, complete healing having taken place within four weeks. The amount of improvement in hearing capacity was very remarkable, especially in regard to the power of hearing conversation.—The President said that the result was so excellent as to leave little to be desired.—Mr. P. de Santi showed a patient upon whom an operation had been performed for cholesteatoma and another patient who had been operated upon for mastoid disease with gangrene of the deep soft structures and emphysema of scalp tissues.—Dr. StClair Thomson showed a patient upon whom ossiculectomy had been performed for "attic" disease.—Mr. C. A. Ballance read the notes of a Fatal Case of Temporal Bone Pyæmia. At the necropsy the pars petrosa and a portion of the occipital bone were in an advanced state of decay. No secondary pyæmic deposits were found anywhere in the body.—Dr. Adolph Bronner showed a Microscopic Section of an Epithelioma of the Cutaneous External Meatus which was at first mistaken for mastoid disease, and made some general remarks upon malignant disease of the external auditory meatus which he did not consider to be so very rare as was usually supposed, he himself having seen five or six cases within the last few years.—Mr. Ballance considered such cases rare, as also did Dr. MacNaughton Jones.—The President remarked that he had only seen one such case before.—Dr. Urban Pritchard said that he had seen very few cases of malignant disease arising in the tissues of the external meatus.—Mr. A. H. Cheatle and Dr. Milligan showed specimens of Tuberculosis of the Middle Ear.—The President related the case of a Bullet Wound through the Brain and Cerebellum, leaving no after-effects beyond loss of hearing upon one side.

MIDLAND MEDICAL SOCIETY.—The fifth ordinary meeting of this society was held on Jan. 30th, at the Birmingham Medical Institute, Dr. Jordan Lloyd, the President, being in the chair.—Mr. Gamgee showed a girl, aged 12 years, who had in the beginning of November, 1900, suffered from very severe symptoms, indicating some intracranial mischief due to middle-ear disease. There had been suppurative otitis media present for two years. The only localising symptom was tenderness over the left mastoid. The left side was explored with a negative result. Five days afterwards the right side was explored and one ounce of pus was let out from between the bone and the dura over the right lobe of the cerebellum. The patient made a good recovery.—Dr. Thomas Wilson showed a Parovarian Unilocular Cyst with Twisted Pedicle and a Retroverted Myomatous Uterus removed by abdominal hysterectomy.—Mr. Haslam showed a Renal Calculus, weighing 489 grains, that he had removed from the right kidney of a man, aged 33 years, and one, weighing 1289 grains, that he had removed two months later from the left kidney of the same patient. Symptoms had been present for 18 years.—Mr. J. Furneaux Jordan showed a specimen of Myoma of the Uterus (invading the broad ligament) with Hydrosalpinx. The specimen consisted of the uterus, containing in its interior a submucous fibroid and in its outer wall a small subperitoneal fibroid, and of a large myoma growing from the left side of the uterus, spread out on the top of which was a large pear-shaped hydrosalpinx. The operation performed was that of combined hysterectomy. On opening the abdomen with the patient in the Trendelenburg position the tumour in the broad ligament was shelled out from the broad ligament, the ovarian and uterine vessels were tied outside the tumour, and then the right broad ligament was ligatured between the uterus and the appendages. In this way the uterus, the myoma, and the hydrosalpinx were removed, while the right appendages were left behind. The ligatures were cut short and a gauze drain was carried into the vagina. The patient, whose age was 39 years, had been married for 22 years and had had two children, the youngest of whom was 20 years of age. For the last two years she had suffered from severe hæmorrhage and for five months continuously the loss had never ceased. Latterly there had been considerable pain. She was a very stout woman, absolutely blanched from hæmorrhage, and with a small, feeble, rapid pulse. Her recovery had not been perfect, as she had a stitch abscess. The operation was performed three weeks ago and she was now well.—Dr. W. J. McCardie exhibited Breuer's Inhaler for the administration of ethyl chloride.—Dr. Stacey Wilson read a paper on Intestinal Obstruction Amenable to Non-operative Treatment.

ROYAL ACADEMY OF MEDICINE IN IRELAND.—A meeting of the Section of Surgery was held on Dec. 7th, 1900, Dr. T. Myles, the President, being in the chair.—Mr. Alexander Blaney made a communication on the Removal of Great Lengths of Intestine. He first detailed the notes of a case which had been operated on by Dr. P. J. Hayes at the Mater Misericordiæ Hospital. A boy, aged 10 years, who was brought to that institution had been run over by a wagon carrying a ton and a half of grain. The wheel passed over his lumbar region while he was lying on his face. Laparotomy was performed 17 hours after admission. The intestine was found extensively crushed, and in addition there was a long transverse rent in the mesentery. The damaged gut was removed and was found subsequently to measure eight feet four and a half inches. The boy recovered and was exhibited. He now suffered from looseness of the bowels and occasional vomiting. His appetite was abnormally great. The second part of the paper gave the results of experiments on animals in which great lengths of intestine had been removed, and an analysis of 33 cases in which over one metre of intestine had been removed in man. The conclusion drawn from these cases was that when the bowel removed was less than 200 centimetres (six feet six and a half inches) intestinal symptoms were, as a rule, absent; when more was removed intestinal symptoms were present. Children apparently stood great resections better than did adults.—The President said that the paper was one of the most interesting communications ever made to that section of the Academy. If they had not seen the patient they could scarcely have believed that a wagon bearing a load of one and a half tons could have passed over him without crushing him to death; yet apparently it produced only laceration of the mesentery. The case also illustrated the extreme difficulty of accurate diagnosis—a difficulty which was increased in the present instance by the fact that the intestine was not ruptured.—Professor E. J. McWeeney said that the very swollen appearance of a good deal of the resected portion of the gut seemed to be due to hæmorrhage into the coats, but the microscopic examination showed that the hæmorrhage was in reality slighter than the naked-eye appearance indicated. The microscope showed congestion

of both the lymphatic vessels and the blood-vessels and the most striking œdema of the coats of the intestine which he had ever seen. A point which struck him in examining a series of sections was what he might describe as the asepticity of the removed bowel. The micro-organisms were few and far between and there was no tendency to migration into the peritoneal cavity.—Mr. J. Lentaigne, Professor White, and others also discussed the case.

FOLKESTONE MEDICAL SOCIETY.—A meeting of this society was held on Feb. 1st, Dr. W. J. Tyson, the President, being in the chair. The rules of the society were revised and a committee was re-appointed "to investigate the therapeutic resources of Folkestone with special reference to the baths." Mr. F. A. Osborn of Dover was elected a member.—Dr. W. L. Chubb showed a specimen of an Anencephalic Fœtus.—Dr. Cecil Latter read a paper on the Physical Signs of Acute Pulmonary Disease. He drew attention to the necessity of differentiating between the physical signs in adults and children. The presence of fluid, for example, in a child's pleura was not always accompanied by the physical signs produced by pleuritic fluid in an adult. This was especially the case with small empyemas occurring in children. They were more often deduced from the clinical course of the disease than diagnosed by any typical signs. Another point of difference between adult and infantile chests was the more frequent absence of all physical signs in the case of children in the earlier stages of acute pulmonary attacks. A child suffering from severe broncho-pneumonia might exhibit no physical signs until the temperature was normal and the breathing was quiet. He next referred to the physical signs of pleurisy with effusion and their value in determining the proper time for aspiration. He strongly advocated the measure while the amount of the fluid was still moderate. The paper concluded with an account of some cases at the Victoria Hospital (Folkestone) bearing upon the subject.—A discussion followed in which Dr. T. Eastes, Dr. Chubb, Dr. P. G. Lewis, Dr. L. Wainwright, Dr. A. E. Larking, Mr. W. F. Chambers, Mr. W. P. Barrett, and the President took part.

ANATOMICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—At the meeting of this society held at Guy's Hospital on Feb. 8th Professor A. H. Young, the President, before proceeding with the business of the meeting, proposed the following motion:—

That the members of the Anatomical Society of Great Britain and Ireland desire to record their profound grief at the death of Her Most Gracious Majesty Queen Victoria, and their deep sense of the great influence the Queen exercised on all that made for good and progress. In particular the society gratefully recalls the Queen's interest in the advancement of science. The society desires further to offer to His Majesty King Edward VII. a dutiful assurance of unswerving and devoted loyalty to his throne and person.

Mr. R. Clement Lucas (Vice-President), in seconding the motion, said that in these days of universal grief and of national mourning little need be added to the remarks of the President to express the loss the members of that society felt they had sustained by the death of their beloved Queen or to record their respectful sympathy with the Royal Family. He had been chosen as a member of the staff of Guy's Hospital to second the motion because the meeting was being held in Guy's Hospital, a hospital which had benefited by the interest His Majesty King Edward VII. had taken in it and by the great honour he had bestowed upon it by accepting the position of President. The members of the society were loyally and devoutly attached to the throne and he had little doubt that His Majesty the King would show the same interest in the advancement of science as had been evinced by his revered and Royal mother.—The members signified their unanimous acceptance of the motion by standing.

MEDICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on Feb. 6th, Mr. Alexander Wilson, the Vice-President, being in the chair.—Dr. D. McKeown in Observations on 2000 Operations for the Removal of Post-nasal Adenoids pointed out that an exaggerated diagnostic importance was attached to the "characteristic facial aspect"; the stage should not be the dominating factor in determining treatment; that certain symptoms described as reflex might be otherwise explained; that wherever adenoids were found with affections dependent on unstable conditions of the nervous system operation was indicated; that the rarity of incontinence of urine was probably only apparent; that "imperfect aeration of the blood" was insufficient to explain the symptoms put to its account; and that the teaching in regard to auditory results of operation had to be supplemented by two facts—immediate improvement and a possible ultimate impairment.—Mr. C. E. Richmond made a short communication on Biliary, Vesical, and Prostatic Calculi, showing the specimens, which included a vesical calculus weighing nine and a quarter ounces.—Dr. Brooke read a paper on the Skin Eruptions found in Arsenical Poisoning. The paper was illustrated by means of lantern photographs.

ROCHDALE AND DISTRICT MEDICAL SOCIETY.—A meeting of this society was held on Feb. 7th.—Dr. J. Melvin read a paper on Spasmodic Asthma, illustrating various points by references to cases in his own practice. He dwelt especially on the treatment, pointing out with regard to climate that a suitable locality for any individual case had to be discovered experimentally. Diet was important. Many drugs might have to be tried in succession ere the most useful was hit upon.—Dr. A. Wallace, Mr. G. W. Malim, Mr. W. Stanwell, Mr. J. P. Walker, and Dr. E. Sugden discussed the paper.

Reviews and Notices of Books.

Text-book of the Embryology of the Invertebrates. By Dr. E. KORSCHELT of Marburg and Dr. K. HEIDER of Berlin. Translated from the German by MATILDA BERNARD. Revised and edited, with additional notes, by MARTIN F. WOODWARD, of the Royal College of Science, London. Vol. IV. London: Swan Sonnenschein and Co., Limited. 1900. Pp. 594. Price 18*s*.

THIS authoritative work has now reached its conclusion. The present volume, which is the fourth of the translation, contains an account of the development of the Amphineura, the Lamellibranchiata, Solenoconcha, Gastropoda, Cephalopoda, Tunicata, and Cephalochorda. The descriptions given in the text of the successive stages of development in these groups are exhaustive up to the year 1893. Since that period considerable additions have been made to our knowledge by the labours of many naturalists, with the result that it has become necessary to supplement the statements made by Professor Korschelt and Professor Heider by the introduction of footnotes. These have been very judiciously added by Mr. Martin F. Woodward, and in some instances fill up lacunæ which existed when the origina was written; in other instances they modify the results that had then been obtained; and in others again substitute new and more correct accounts derived from the concordant researches of more recent investigators for the older and less accurate observations. Mr. Woodward has greatly added to the value of the translation by appending to the excellent bibliography given by the authors a list of the more important articles that have been written since the date of publication of the German work. Thus, in addition to the 113 articles on the Tunicata supplied by Professor Korschelt and Professor Heider in the bibliography of that order, Mr. Woodward adds no less than 37 references to important articles and treatises that have appeared in the course of the last seven years. The student, therefore, will have but little trouble in following up certain lines of inquiry and completing his knowledge of all that has been done up to the end of the last century.

The general mode of treatment of the subject of embryology adopted by the authors may best be understood by selecting one of the orders, such, for example, as the Gastropoda. In dealing with this order Professor Korschelt, by whom the description appears to have been chiefly written, discusses in succession the oviposition and character of the egg-capsules and the egg, in which it is shown how in most Gastropoda the spawn forms disc-shaped or long hyaline gelatinous masses sometimes inclosing several hundred thousand eggs which are fertilised in the body of the

mother; in others the ova are laid singly and are fertilised in the water. To this succeeds an account of the cleavage and the formation of the germ layers; then the rise of the larva and its relation to the adult form, including the trochophore and veliger stage in Patella and the corresponding stages in Paludina; then follows a description of the primitive kidneys. The development of the external form of the body in the different divisions of the Gastropoda, as in the prosobranchia, opisthobranchia, pteropoda, &c., is given with the formation of the various organs, as the shell, nervous system, sensory organs, pedal glands, alimentary, respiratory, circulatory, and generative systems. It will be seen from the above *résumé* that the account of the development of this order is very complete, and the same may be said of the lamellibranchia, cephalopoda, and other divisions of the great class of mollusca. Nothing can show better the immense extension of our knowledge of the subject of development of late years than a comparison of the space occupied in Balfour's well-known Comparative Embryology, published in 1880, as compared with that in Professor Korschelt and Professor Heider. In the former work the consideration of the embryology of the mollusca only occupied 55 pages, whilst in the latter it takes up nearly 600 pages. There is, however, still room for further investigations. To give an example only, are the so-called arms or brachia of the cuttle-fish processes of the foot, as Professor Huxley believed, or are they, as Grenacher held, representatives of the velum, the foot being absent in this group? The question still remains unanswered, though the evidence seems to point, upon the whole, to the correctness of the view held by Professor Huxley. Professor Korschelt, in admitting this, remarks that a fact which causes surprise and at first sight is unfavourable to it is that some of the arms shift to the dorsal side of the head, being here found behind the mouth. "This makes it difficult to understand how the foot could have become transformed in this way, but when we see how extremely plastic it is, judging from different transformations it has undergone in the Lamellibranchia, the Prosobranchia, the Heteropoda, and the Pteropoda, further modification is not so inconceivable, especially when we find that the lateral parts of the foot in certain Prosobranchia (diotocardia) even develop tentacular structures."

The lady, Matilda Bernard, whose name appears on the title-page as the translator, deserves great credit for the care and fidelity with which she has rendered the original into pure and idiomatic English. We have opened the volume in many places and compared the translation with the original and in no instance have we found any slovenly expression or any incorrect rendering of the German. The illustrations are not only very numerous but extremely good, while the general get-up of the volume in regard to paper and print renders it very pleasant to read.

A Text-book of Practical Medicine. By WILLIAM GILMAN THOMPSON, M.D., Professor of Medicine in the Cornell University Medical College, New York City; Physician to the Presbyterian and Bellevue Hospitals, New York. Illustrated with 79 Engravings. London: Henry Kimpton. 1900. Pp. 1011. Price 21*s*.

THE author of this work states in his preface that his aim has been to offer to students and practitioners a comprehensive review of up-to-date medical practice. He has made a special effort to set forth clearly and simply those facts and principles which have received clinical proof and to avoid those theories which have merely a speculative basis. We consider that Dr. Thompson has carried out his objects. One of the features which distinguish this text-book from those hitherto published is the care with which the treatment of the various diseases is described. This is evident throughout the volume. Curative medicine is assumed to be the final and avowed object of those who may read this work, and the therapeutical sections have therefore been made unusually detailed and complete.

The book is divided into nine parts. Part I. deals with Infectious Diseases. It is instructive to note how with the publication of new text-books of medicine, or with the issue of fresh editions of older ones, the section concerned with "infectious diseases" is gradually getting larger and larger as our knowledge of bacteriology increases. In this volume pneumonia, rheumatism, tuberculosis, and gonorrhœal arthritis are all included. Probably some of the "diseases of the blood" will ultimately find their way under the same heading. The chapter describing Typhoid Fever is a very good one, especially that part dealing with the treatment. The author especially advocates hydrotherapy according to the method advocated by Brand—that is to say, the application of friction to the entire body while immersed in the cold water. In this country the use of the cold bath in the treatment of typhoid fever is very extensively employed, but the "rubbing" is not so generally used. Dr. Thompson, however, lays great stress on the importance of this measure and considers that Brand's method would be more appropriately termed treatment by "rubbing" than by "tubbing." The object of the friction is primarily to apply a mechanical stimulus to the cutaneous surface over a large area, thereby reflexly stimulating the entire nervous system and also the vaso-dilator nerves of the periphery, which allow of the determination of increased supply of blood to the surface to be cooled by the water. Dr. Thompson has had most satisfactory results by employing this system of treatment.

The account given of malaria is very full and complete. The varieties of malarial parasites are accurately described and the symptoms of the different types of malarial feve clearly recounted. Dr. Thompson considers that quinine in the treatment of malaria furnishes the best illustration of the action of a true specific remedy known to therapeutics and he is inclined to agree with the statement made by many recent writers that fevers which do not yield to it are not malarial. He further states that in no case of malaria is it desirable to give quinine during the height of the fever, for it may not be then absorbed and is often vomited.

The author defines pneumonia as "an acute, infectious, febrile disease, caused by inflammation of the lungs, with toxæmia." This is scarcely accurate; pneumonia is now regarded as an acute, infectious, febrile disease with local manifestations in the lungs, but the pulmonary process is not strictly an inflammation, and the disease is certainly not "caused by inflammation of the lung," but by a micro-organism. The clinical description of the disease, however, and the treatment are well given. In speaking of the latter the author describes some experiments he made to determine the penetrating power of local heat and cold; this was in reference to the local measures of treatment sometimes adopted in pneumonia—by hot poultices or the application of ice. Specially constructed thermometers inserted deep into the chest through empyema sinuses were unaffected by external poultices or ice-bags. Experiments on dogs showed no change in the lung, neither congestion nor anæmia, when similar applications were applied to the chest wall.

We particularly commend the remarks on the examination of the contents of the stomach in cases of gastric disease. In recent years there has been a tendency to trust too much to the results of such chemical analysis to the exclusion of clinical observation. Dr. Thompson points out very justly that analyses of gastric contents are merely of corroborative value in connexion with a comprehensive study of each case, including the history, physical examination, and general symptoms, and he adds, "attempts to isolate them for

positive conclusions as to diagnose or indications for treatment will result in grave error." We cordially agree with the author's remarks.

Comparative tables are freely used as an aid to differential diagnosis; this affords a ready and great assistance for reference. The busy practitioner can see at a glance the main points that are relied upon in distinguishing from one another those diseases which bear mutual resemblances.

There is one matter in which we entirely disagree with the author in his classification of diseases. He has set down "jaundice," "dilatation of the heart," "dilatation of the stomach," "ascites," &c., as though they were distinct diseases instead of symptoms or the results of diseases. We admit that this arrangement is convenient for teaching purposes, but the student is always too apt to regard these conditions as primary disorders and to forget to search for their true origin.

Report on an Experimental Investigation into Methods of Inoculation against Rinderpest. By LEONARD ROGERS, M.D., B.S. Lond., F.R.C.S. Eng., officiating Imperial Bacteriologist to the Indian Government.

THE Government of India have recently issued a report on the above subject showing the results of some most valuable and painstaking observations which have been made by Captain Rogers of the Indian Medical Service and his veterinary assistant Lieutenant Walker, A.V.D The objects of the investigation were to test different methods of inoculation recently adopted so successfully in South Africa when dealing with rinderpest outbreaks, and to report upon the prospects of practically applying similar measures in India. Captain Rogers has entered into the subject most exhaustively and has given extensive trial to inoculation with Koch's bile, Edington's glycerine bile, filtered bile, serum alone, Turner and Kolle's method, and the serum re-inoculation method. The advantages and disadvantages of each are fully discussed and the author's conclusion set out to the following effect. With Koch's bile method the principal advantages are that only a single inoculation is required, and there is no reactionary fever which would be likely to produce loss of milk in dairy cattle or abortion in pregnant animals. The principal disadvantages are, first, the difficulty of obtaining suitable biles in sufficient numbers in village outbreaks, and, secondly, the short duration of the immunity. In connexion with the latter it is curious to note that in the case of hill cattle the immunity produced did not last even for a month in many instances. Again, complete immunity is not obtained for ten days after the inoculation, and during this time the whole herd may have contracted rinderpest in a fatal form. Edington's glycerine bile method gives an immunity of long duration, and the biles can be kept in a condition in which they can be used for upwards of a year. On the other hand, full immunity is not obtained for at least ten days, infection is introduced by this method, and a double inoculation is necessary, the latter procedure requiring the collection of all the animals a second time. With this method a large proportion of the cattle on the plains failed to react, whilst in the hill animals it was not only useless but almost always fatal. With the filtered bile method a week's time is gained over Edington's method and biles which have become putrid can be utilised. This is also dangerous to the hill cattle. The use of serum alone affords immediate and full immunity, and will modify an attack of the disease which an animal may have contracted one or two days before its use. The serum can be prepared in any quantity and is well spoken of by the author. To Turner and Kolle's method the most serious objection is that it is useless in the Kumaon hill cattle, as in these very susceptible animals the results obtained were erratic. The serum re-inoculation method consists in using a sufficiently large dose of serum on one side of the animal to counteract a small dose of rinderpest blood injected on the other side at the same time. It gives a mild and safe reaction, so that even hill animals can be passed through a mild attack of rinderpest with little, if any, loss. The only disadvantage, a minor one, is that a second inoculation is necessary in some of the animals. In conclusion, Captain Rogers states: "While, then, the re-inoculation method presents decided advantages in this country, it must be left to further experience in the field to decide whether this advantage is sufficiently great to overcome the greater trouble that it involves in the case of plains animals; but, on the other hand, in the case of hill cattle it alone gives good and safe results. ..... In the event of sufficient serum for carrying out these methods not being at any time readily available then the glycerine and filtered bile methods will be of the greatest value."

Verhandlungen des Congresses für Innere Medicin. (*Proceedings of the Congress on Internal Medicine.*) Edited by Dr. E. VON LEYDEN and Dr. EMIL PFEIFFER. Wiesbaden: Verlag von J. F. Bergmann. 1900. Pp. 638.

THIS volume contains an account of the eighteenth congress on Internal Medicine held at Wiesbaden from April 18th to 21st, 1900, of which we gave a report in THE LANCET at the time.

The opening address by Professor Dr. Rudolf von Jaksch is reported in full, the title being "Internal Medicine in the Nineteenth Century and its Probable Development in the Twentieth Century." An important discussion took place on the treatment of pneumonia, being introduced by Professor D. Friedrich von Korargi (Budapest) and Professor Dr. P. K. Pel (Amsterdam). A large number of speakers subsequently expressed their views on the subject, including Professor Nothnagel of Vienna, Professor Senator of Berlin, and Professor Baümler of Freiburg. Another interesting discussion was that on Endocarditis and its Relations to Other Diseases, introduced by Professor Litten of Berlin, and amongst the speakers were Professor von Jürgensen of Tübingen and Professor His of Leipsic.

A large number of communications were read, some of them being of considerable interest—such us: the Gouty Affections of the Stomach and Intestine, by Dr. Karl Grube of Neuenahr and London; the Pathology of Paroxysmal Tachycardia, by Dr. August Hoffmann of Dusseldorf; on Cyanosis, by Professor Hermann Vierordt of Tübingen; and on Phlorhizin-Diabetes, by Professor Arthur Biedl of Vienna and Dr. Rudolf Kolisch of Vienna. There are upwards of 40 papers published. These, with descriptions of certain clinical demonstrations, form a valuable collection and the writers may be congratulated on having published a volume which is likely to prove of considerable value, especially for purposes of reference.

Diseases of the Heart: Their Diagnosis and Treatment. By ALBERT ABRAMS, A.M., M.D. Heidelberg, Consulting Physician for Diseases of the Chest, Mount Zion Hospital, and the French Hospital, San Francisco. Chicago: G. P. Engelhard and Co. Pp. 178. Price $1.

THIS book will have to undergo a considerable amount of revision and alteration before it can be considered a reliable work on diseases of the heart. At present it is full of inaccuracies and expressions of opinion which are far behind the times and which have long been disproved by the most competent observers. A few illustrations will suffice. In speaking of ascites the author says: "The chief cause of cardiac dropsy is disease of the mitral valve, and especially *mitral stenosis*" (the italics are quoted). Again, in the section on Dilatation of the Heart we find the remarkable statement

"Dilatation of the heart is an evidence of weakness of the organ and it usually follows hypertrophy." This is misleading, for although dilatation may certainly ensue in a heart which is hypertrophied, in the majority of cases dilatation precedes hypertrophy. In describing endocarditis Dr. Abrams writes: "The malignant form is of microbic origin and is secondary to some infectious disease. The majority of cases develop during an attack of croupous pneumonia." We differ from both these statements. Primary infective endocarditis does undoubtedly occur, and the most common form of micro-organisms found in relation with this condition belong to the septic and pyogenetic type (streptococci and staphylococci).

Dr. Abrams has also some original ideas on methods of diagnosis. He uses the x rays to diagnose a dilated stomach, and by the same means has actually discovered that dilatation of the right heart follows severe muscular exertion, such as "century runs"! The author should make himself acquainted with the safety-valve action of the tricuspid valve before enunciating as a new fact a condition which is known to every senior medical student. Dr. Abrams is evidently much impressed with the value of the Roentgen rays. We do not think the following sentiment will be generally accepted: "The vast amount of literature that has ..... accumulated has convinced the most skeptical that the Roentgen rays are invaluable in cardiac diagnosis"; or that his concluding remark on this subject will generally commend itself: "Without a Roentgen ray apparatus no physician can lay claims to scientific refinement in cardiac diagnosis."

We could multiply criticisms similar to the above, but we have already allotted sufficient space to a publication which we cannot in any way recommend.

A Practical Guide to Garden Plants. By JOHN WEATHERS, F.R.H.S., late Assistant Secretary to the Royal Horticultural Society, Horticultural Lecturer to the Middlesex County Council, &c. London: Longmans, Green, and Co. 1901. Pp. xii.-1192. Price 21*s.* net.

THE chief aim of Mr. Weathers in writing this work "has been to produce a book that will be unique and of real use, not only to amateur gardeners, for whom it is particularly intended, but also to those engaged professionally in horticulture." The arrangement of the volume is very good. The first portion consists of a glossary in which are defined the various technical words, &c., used in descriptive botany. The explanations given are both numerous and concise; also illustrations are freely used, so that the exact meaning of any particular term can hardly be misunderstood. The presence of a glossary must not, however, be taken as indicative of the occurrence of plant descriptions bristling with technical expressions. We are pleased to note that it would hardly be possible to describe plants in simpler language.

Part I. deals with the life-histories of cultivated plants; it contains much information concerning the nature of plants from many points of view. For instance, structure, morphology, and some physiological processes are briefly entered into. Propagation is very clearly and fully described, and, where necessary, illustrated. A few errors may be found in the earlier portions of this section. For example, on page 25 occurs the following statement:—"It (the embryo) may occupy only a very small space as in wheat, onion, &c., and remain imbedded in a substance at one time called '*albumen*,' but now more generally called '*perisperm*.'" It is hardly necessary to point out that it is the endosperm which is synonymous with the albumen, and of course endosperm and perisperm are two quite different tissues, which, however, fulfil the same functions. Then, again, the language is sometimes rather loose, thus making some of the statements open to misconception. For instance, on page 30 we read, "It is evident, therefore, that the sap from the roots ascends by the vessels in the cambium and young wood." The presence of vessels in a cambium would indeed be remarkable.

Part II. occupies by far the greater portion of the book. It enters into the consideration of annual, biennial, and perennial plants. Lists, which will prove of great use, are given of annuals, rock-plants, aquatic plants, and ornamental trees, together with general directions as to their culture and arrangement. As regards the arrangement of plants we notice that in some special cases—e.g., rock-gardens and flower-borders—articles published elsewhere are made use of. The one relating to the "Formation of a Rock-garden" is particularly instructive. The last section of Part II. gives descriptions, mode of culture, and other information of a very large number of plants, in fact, over 1000 genera are mentioned.

Parts III. and IV. are concerned with the cultivation of fruits and vegetables respectively.

In conclusion, the work is extremely good and contains all necessary information for the cultivation of plants. To amateurs it will prove invaluable.

LIBRARY TABLE.

Laboratory Directions for Beginners in Bacteriology. By VERANUS A. MOORE, B.S., M.D. Boston: Ginn and Co. London: Edward Arnold. 1900. Pp. 143. Price 4*s.* 6*d.*—This book consists of a series of exercises or bacteriological experiments for beginners. Step by step the student gradually makes his acquaintance with applied bacteriology and his attention is drawn to the great importance of bacteriological examination as a means of diagnosis. His first exercise is directed to the cleaning of glassware, his second to the plugging of tubes and flasks and to the sterilising of glassware, his third to the preparation of culture media. In all there are 64 exercises, in the course of which the search for pathogenic organisms in tissues, in water, and in excretions is described. The exercises include the testing of the efficiency of disinfectants. We regard the work as an excellent guide for the study of practical bacteriology and we know no better method of inculcating practical bacteriological knowledge than by setting a pupil a series of exercises on the plan and in the order given in this valuable little work.

An Introduction to Modern Scientific Chemistry. By Dr. LASSAR-COHN, Professor in the University of Königsberg. Translated from the second German edition by M. M. PATTERSON MUIR, M.A., Fellow of Gonville and Caius College, Cambridge. London: H. Grevel and Co. 1901. Pp. 356. Price 6*s.*—Concerning the title of this book, what is chemistry if it is not scientific? The superfluous adjective is used, perhaps, because the present book is written in the form of popular lectures, and thus a kind of apology for putting the subject popularly is tendered in the word "scientific." Surely the science of chemistry is preserved even when it is expounded in popular language. Dr. Lassar-Cohn is the author of "Chemistry in Daily Life," which also was translated by Mr. Muir, and the present book is equally successful, we think, in regard to its presentation of chemical facts and principles in a popular style, although the work before us is more adapted than the previous one for the really earnest student of natural science. It should prove an excellent companion to a laboratory course of elementary chemistry. The book fulfils a distinctly educational purpose. A section is devoted to a consideration of the classification, composition, and constitution of carbon compounds.

Urinary Diagnosis and Treatment. By JOHN W. WAINWRIGHT, M.D. Chicago: G. B. Engelhart. 1900. Pp. 140. Price $1.—The author has extracted from the literature

on the subject the simplest methods of chemical and microscopical examination of urine and the latest theories concerning routine treatment of the conditions found. He has certainly reduced the analysis and examination of urine to the simplest possible form, and he gives, perhaps, for the busy practitioner sufficient information. But the omission of certain methods and the details of a few highly accurate, though perhaps complicated, processes may in some instances lead to the loss of a factor in diagnosis. At the end of the book is a series of excellent plates of urinary casts and crystalline deposits.

Appeal Cases under the Sale of Food and Drugs Acts, 1875 and 1879, and the Margarine Act, 1887. By B. SCOTT ELDER. London: Butterworth and Co., 12, Bell-yard. 1900. Pp. 90. Price 3*s.* net.—This book consists of a series of excerpts from various appeal cases under the Food and Drugs Acts, 1875 and 1879, and their selection has been undertaken by Mr. Elder, who is the chief inspector of food and drugs and weights and measures for the county of Durham. Of course, some of these appeals could hardly occur now under the new Act of 1899. The case in which baking-powder was held to be not an article of food is one in point, for baking-powder is now clearly included as an article of food in the new Act. The book will be consulted with advantage by those who are concerned in the institution of proceedings against presumable offenders.

The Food Inspector's Handbook. By FRANCIS VACHER, F.R.C.S. Edin., medical officer of health of Cheshire. Third edition. Illustrated. London: The Sanitary Publishing Co. 1900. Pp. 210. Price 3*s.* 6*d.*—This is a compilation of notes which should be very instructive to the food inspector and help him considerably towards the efficient discharge of his duties. An account of the food inspector's qualifications and obligations occurs in the first chapter, Mr. Vacher adding the attributes which should be possessed by the model inspector. The statutory powers are then discussed, while the practical side of the subject is approached in Chapter III. dealing with animals, carcasses, and butcher's meat, &c. We do not find any reference to a chemical means for identifying horseflesh. It would be interesting to know whether the iodine test depending upon the presence of glycogen was of any real value. Fish, fruit, vegetables, and fowl and preserved provisions form the subject of succeeding chapters. The final chapters deal with articles of food which for the most part come up for inspection and testing under the Sale of Food and Drugs Act. It appears to us that the food inspector will find in this little book all that he wants to know in connexion with the characteristics of various foods.

JOURNALS AND MAGAZINES.

New Zealand Medical Journal.—This periodical, which had for some time ceased to appear, was resuscitated in 1900. The first number of the new series was published in Wellington, New Zealand, in October; the second number, which is dated in November, consists of 50 pages and contains six original articles, the text of a proposed new Medical Practitioners Registration Bill, editorial paragraphs, and a variety of miscellaneous intelligence. In the opening article Mr. H. A. de Lautour of Dunedin describes his method of using the x rays for the localisation of foreign bodies embedded in the tissues. He wraps the sensitive plate in opaque paper and places it in a wooden box, the lid of which is crossed on the inside by several brass wires and on the outside is marked with lines corresponding to the wires. The brass wires are reproduced in the radiograph and serve to locate the exact centre. The box slides on a horizontal graduated steel scale attached to the base of the upright which carries the focus tube. When one radiograph has been taken the patient crosses over to the other side of the table and another radiograph is taken with a fresh plate. Tracings of each are then taken on one sheet of paper, always preserving the centre, so that double shadows of the foreign body are shown.

The *Journal of the Sanitary Institute*, which has just been issued, contains a long article by Professor A. Celli of Rome on Researches on the Propagation of Malaria and the Precautions to be adopted in Unhealthy Districts. After describing some of the opinions of other investigators he gives reasons for deciding that the dapple-winged gnat, known as anopheles, is the propagating agent. He then describes the life-history of the insect, and sets out a series of corollaries for the hydraulic engineer, for the sanitary engineer, and for the agriculturist, in which are detailed the steps that can be taken to prevent the multiplication of the anopheles and other measures against the spread of the disease. The concluding portion of the paper gives instructions for the self-protection of labourers in malarious places. The paper is illustrated by some of Professor Celli's photographs showing methods of protecting houses and shelters. The same journal contains papers of Dr. F. Tidswell, medical officer of health of Sydney, New South Wales, and Mr. S. M. Kaka, medical officer of health of Karachi, India, on their personal experiences of the plague in Sydney and Karachi, with descriptions of the preventive measures adopted. Some microscopic photographs of the plague bacilli and dissections of plague-infected rats and guinea-pigs appear in the paper.

Mercy and Truth.—The February number contains an illustrated description of the Church Missionary Society Medical Mission recently established in Riley-street, Bermondsey.

New Inventions.

HALL'S PATENT BATH APPLIANCE.

WE have received from Mr. T. Bernard Hall, 119, Colmore-row, Birmingham, a description and drawings of an appliance intended for use in asylums, infirmaries, hospitals, and similar institutions for the purpose of easily lowering and raising infirm, bed-ridden, and other invalids in and out of baths without distress to the patients or difficulty to the attendants. It can be fitted to any existing bath or supplied with new baths complete. The special feature of the appliance is a wooden grid or carrier on which the patient is laid and which is of a size and shape to suit the bottom of the bath. This grid is suspended by light galvanised wire or other ropes which pass over pulleys fixed directly above the bath, and are raised or lowered by turning a hand-winch provided with a worm and wheel and made fast to the wall in any convenient position. When a patient is to be bathed the grid is allowed to rest on two strips of wood laid across the bath, the patient is placed on it, the grid is slightly raised by turning the winch handle to allow the removal of the strips of wood, and the patient is then gently lowered into the bath. If the ropes are unhooked from the grid it may be used for carrying an invalid to bed or in connexion with an ambulance. The appliance does not in the least interfere with the ordinary use of the bath, as the grid may at any time be raised up out of the way. The invention is ingenious and might be useful in the houses of private patients as well as in the public institutions whose possible needs have been specially aimed at.

LUNACY IN BRISTOL.—At the meeting of the Bristol Board of Guardians held on Feb. 7th it was reported that on Jan. 1st, 1901, there were 1360 lunatics chargeable to the Bristol Union. Of this number 779 were in the Bristol asylum, 443 were in workhouses, 43 were in other institutions, and 95 were resident at their homes with relatives. The clerk stated that there was annually a steady increase in the figures.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 16, 1901.

The New Parliament and Domestic Legislation.

THE opening of any Parliament is always a matter of interest, but the ceremony of last Thursday was an event of exceptional importance to the nation. Parliament was opened by a new Sovereign accompanied by his Queen Consort with every circumstance of pomp and precedent that could give the ceremony weight, and in national circumstances which have commanded the attention of the world. Some of these circumstances have excited hostile criticism, as if England were now what Admiral COLLINGWOOD said she was a hundred years ago, "a target for all nations to shoot at"; but on the whole our relations with foreign States have been notably smooth since the death of the QUEEN moved all civilised nations to mourn her with us. The change of Sovereigns has evoked expressions of sympathy and respect which show that despite the different views of different races there is a substratum of reverence for what is good in all. We recognise the underlying humanity that has had its manifestation in the unprecedented recognition by all men of the virtues of QUEEN VICTORIA and in the generous sentiments which have been expressed towards her son who succeeds to her throne. The occasion is one of the greatest impressiveness, being the beginning of a new Parliament in a new century under a new ruler. The KING, the QUEEN, the Ministry, the Houses of Parliament, must feel that it is especially incumbent upon them to give the nation a new start in all that makes for the welfare of the people and for the peace of the world. His Majesty KING EDWARD VII. has given clear intimation that he realises the situation to which he is called and the duties of it. The British nation, subjects of QUEEN VICTORIA for 63 years, have conceptions of government and of Royalty such as no nation in the world have probably had before, and they look with confidence to the KING to rule them as they have been ruled, discipline being used to maintain and not to curtail freedom. Happy is the monarch who succeeds under such auspices.

KING EDWARD VII. steps on to the British throne at a time when there is a marked competition among the great nations for supremacy. The victory may or may not be ultimately settled by recourse to arms—God grant no such ordeal will be required at this period in the world's history; but military success and territorial aggrandisement are not the objects of national rivalry. What the peoples of the world seek are markets for trade. And the stress of competition in commerce between ourselves and powerful nations will not be without its advantages if it throws our statesmen back on the scientific use of the materials at hand. Long decades of wealth and luxury and prosperity have made us careless of efficiency. The new KING begins his reign with the discovery, nay, with the demonstration, that such conditions of life may be accompanied with much that is unhealthy, ignorant, and altogether unsatisfactory. The homes of many English people are hotbeds of disease and death. The education which is supplied to all gratuitously is inadequate for making life bright or for fitting the people for doing the best in their various callings. Dr. OLIVER LODGE, Principal of the University of Birmingham, said well to the members of the National Union of Elementary Teachers, in his address on "Educational Problems," delivered last week: "What scope for advance there is! Walking the streets how seldom one saw an educated face. How dull, uninterested, uncultured, and uninteresting the mass of mortals were." These are painful words, but as true as they are painful; and Parliament will be expected at the turning of a new page in history to endeavour strenuously to make of the wealthiest nation in the world the healthiest and the happiest. They may rest assured that in the KING they will have a well-informed and hearty coadjutor. It is to work with this object that Parliament is called as well as to the ending of the South African war in a victory of peace such as shall atone for its many horrors and failures. Lord SALISBURY and many lesser statesmen remind us in a somewhat vague formula that the great domestic problem before us is the provision of better houses for the working-classes. The Premier, in other words, perceives that the men who have to fight our battles must be healthy men with homes worth fighting for. The Colonial Secretary will heartily endorse this view, for is it not the fact that we owe to him one of the wisest Acts in our statute-book, though, alas, as yet little appreciated, by which for a sum not more than his rent the working-man may be helped by his municipality to buy in a reasonable time the house in which he lives. We could wish, indeed, that Mr. CHAMBERLAIN'S mind were liberated from its present cares to give help in the solution of those problems of sanitary, social, economic, and educational progress on which our ability to hold our high place among the nations clearly depends. But other members of Lord SALISBURY'S administration will be expected to see that legislation is undertaken to reduce the disease, the drunkenness, the ignorance, the incapacity of the nation. A Ministry that will not attempt such tasks cannot long retain the respect of the constituencies. Epidemics of disease over which science has given us complete control—control which has been tampered with by what is virtually the present Ministry—still threaten us; drunkenness still wastes the substance of the people and leads to the starvation of children and the wretchedness of homes; large numbers of people die without medical care or attendance; wealth monopolises space and land so that poverty in this vast metropolis can scarcely find a room in which decently to live. These are the evils in the remedies for which we are most immediately interested, and they are the evils which the British people, when their eyes are turned from South Africa to the motherland, will certainly insist upon having removed.

The South African war is an illustration of the way in

which an imperial question becomes a domestic one. In the memory of living persons the nation has not been moved to its heart more than by the various vicissitudes of this war. The bravery and brilliance of our soldiers have been largely neutralised and the reward of their militant virtues has been long delayed by defects of foresight, of organisation, of education—general, military, and scientific—which it must be the primary object and duty of statesmanship, rising above all party considerations, to supply. The British Empire is in need of statesmen of whom it can be said, as it was said of BURKE, "He saw everything and he foresaw everything." It is easy to be wise after the event. But we have a right to expect in our statesmen a more scientific forecast of things generally and a more intelligent study of the forces, social and political, which are moulding the nations, including our own, and which are bound to affect their action and their history.

Inoculation against Enteric Fever.

THE general results of a statistical comparison between the inoculated and uninoculated British soldiers serving in India, so far as an experimental trial has been made of Professor WRIGHT'S method of inoculating against enteric fever in that country, are stated to have been distinctly in favour of the inoculated. The results are, at any rate, sufficiently favourable to indicate that a further and more extended trial of this system of treatment should be made. An interesting communication from Professor WRIGHT published in THE LANCET of Feb. 9th, p. 399, furnished the results of an officially compiled statistical statement dealing with the effects of anti-typhoid inoculations in the case of one corps—the 15th Hussars. From this statement it appears that the incidence of enteric fever in the inoculated is represented as 0·55 per cent. and the mortality 0·27 per cent., while the incidence in the uninoculated is 6·14 per cent. and the death-rate 3·35 per cent. Although these figures are drawn from a comparatively limited number it will be seen that so far as they go they are very favourable to inoculation.

Inoculation against enteric fever has also been largely resorted to among the troops serving in the South African war, and the publication of the returns showing the results is anxiously awaited and should soon, we imagine, be forthcoming. The two sets of observations—those from India and those from South Africa—should furnish reliable data for estimating the influence of inoculation in lessening the soldier's liability to contract, or to die from, this form of fever, and it is quite possible that the returns from South Africa may turn out to be the more valuable of the two. According to official reports extending over many years it seems to be, statistically speaking, a well-established fact that the susceptibility of British troops under a short service system to contract enteric fever in India is most marked during their first and second years of service in that country, and notably during the first year. In the report of the Sanitary Commissioner with the Government of India for 1898, for example, we find that the ratio of mortality from enteric fever per 1000 of strength was greatest in the age-period 20–25. As regards residence in India, the ratio of mortality from enteric fever per 1000 of strength was highest in the first year of residence. The total number of deaths from enteric fever in the first year of Indian service was 236, and 70 out of every 100 deaths from all causes were from enteric fever. Out of the total number who died at all periods of residence from enteric fever 41 per cent. were in their first year of Indian service. These general results are, moreover, only confirmatory of those which have long been set forth in the official reports of former years. It may be pointed out, therefore, that any preponderance of soldiers in their first year's service on one side or the other—inoculated or uninoculated—might prove very misleading. The figures showing the results of inoculation might not be fairly representative of the advantages it confers where the subjects of inoculation were mainly composed of the class most susceptible of being attacked by enteric fever; on the other hand, the figures might unduly exaggerate the advantage where the least susceptible happened to form the majority of the inoculated class. It is highly probable, of course, that the troops serving in India have not been in any way specially selected, but have been taken, indiscriminately and as a mere matter of convenience, as they voluntarily offered themselves for inoculation; in which case there would be no such disparity between the inoculated and uninoculated as would practically affect the results of a comparison being made between them. The returns obtained from the troops serving in South Africa will not be open to any fallacy of this sort. The aggregate number of troops is very large; they are, or were, nearly all of about the same length of service in that country—that is, in their first year—and have all been subjected to the same or very similar conditions. The troops that came from India may, it is true, have already paid their tribute and have acquired immunity owing to their having been previously attacked with enteric fever whilst resident in that country, but the Indian contingents form no preponderating part of the army in South Africa. When all the figures bearing on inoculation against enteric fever and derived from observations made upon our army in South Africa are forthcoming we ought to have a good guide to th value of the treatment.

Supposing the protective influence of inoculation against enteric fever to be established as the result of these investigations, there still remain several points that will have to be determined before it can be generally applied as a practical measure—for example the degree of immunity which it confers and for what length of time it confers it. It need scarcely be said that the subject is not merely one of scientific or medical interest. It is devoutly to be wished that the evidence of figures and experiments, with which we have yet to be furnished, may prove sufficient to put the value of inoculation against enteric fever on a secure basis as a scientific and successful method of therapeutics. If this should turn out to be the case Professor WRIGHT will have conferred an inestimable boon not on the British army only but on humanity in general.

A Constant Water Service for London.

WE print in another column an account of the progress which has been made as to the provision of a constant water service for the inhabitants of London. The progress, it will be seen, has been slow, but it has been continuous. The advantages of a constant service were strongly insisted upon by Sir JOHN SIMON over 50 years ago, and statutory obligations of increasing stringency have been placed upon the metropolitan water companies as a result of the legislation of the years 1852, 1871, and 1897. At the present time every resident in London has a right to insist on receiving a constant supply of water from the company in whose area of distribution he lives, and should the company fail to carry out their duty in this respect they render themselves liable to pay a fine.

During the past few years some of the companies have failed to give a constant supply. These failures have been due to three chief causes:—

1. A company has had an inadequate amount of water at its disposal. More than one distressing famine has been suffered in the area of the East London Company from this cause. At length, happily, arrangements have been made by which the other companies can, when necessary, supply the deficiency by passing filtered water into the mains of the defaulting company. The Act passed to legalise this proceeding was the direct outcome of the first report of the Llandaff Commission.

2. A company has failed to give an adequate supply of water because it was deficient in regard to its means of purifying the river water. The Thames water is purified by means of sedimentation in reservoirs and afterwards by filtration.[1] The more completely the process of sedimentation is carried out the less the work the filters have to do and the longer they remain efficient. The early summer is the time at which the process of filtration causes most anxiety to the engineers of such companies as have an insufficient number of filter-beds. The surface of the sand is then liable to become blocked with a substance which is popularly called fish spawn. It will be remembered, at any rate by those who lived in the district, that some years ago a water famine in the area of the Lambeth Company was stated in Parliament to be due to the abnormal amount of fish spawn present in the river water which "choked" the filters. The fact unfortunately is that the reservoir capacity and the filtration area of the Lambeth Company are deficient, and so long as this is the case their customers will be liable to be the victims of such an accident.

3. Companies have failed to give a constant service because the water has during a severe winter frozen in the mains. This has occurred because the pipes have been placed too near the surface of the ground. Since the frost of 1894 many of the mains of the London companies have been relaid at a greater depth, but we are by no means convinced that they are all laid as they should be—that is to say, so deeply as to ensure that the water is in no danger of freezing.

It is essential for the well-being of the people of London that they should have a constant water service. When the companies have failed to give a constant supply it has been due to some fault or negligence on their part. They should not be allowed to profit by the faults which they have committed in the past, and the people of London should make them understand that future negligence, should it occur, will be punished in the manner provided for by the statutes. Where there is a constant water service domestic cisterns are not necessary if the mains are so laid as to obviate the effects of frost. It is always preferable to draw the water directly from the pipes. The metropolitan water companies are now trying to obtain the sanction of the Local Government Board to introduce some new regulations in regard to domestic fittings. They wish amongst other things to re-introduce cisterns into dwelling-houses. If the proposed regulations are adopted they will cause great expense and great inconvenience to the people of London. The water companies have skilfully chosen their time to carry out what, for them, would be a veritable *coup*. This is easily seen from the following facts:—

1. The President of the Local Government Board has only recently been appointed and cannot possibly have yet grasped all the difficulties of the question.
2. The Water Examiner to the Local Government Board has held office for a brief period only.
3. The London County Council have been unfortunate in their policy in regard to the water question generally, hence their opinion on this matter will probably receive less consideration than it should.
4. The new metropolitan borough representatives have not yet had time to study the question in detail.

We are strongly of opinion that the proposed new regulations should not be sanctioned by the President of the Local Government Board. The interests of the London water consumers have been unduly neglected. They are a long-suffering people, but should the President of the Local Government Board consent to the compulsory re-introduction of the domestic cistern we are moved to prophesy that the Government will alienate some of their best supporters.

[1] Except in the case of the East London Company which has no subsidence reservoirs at its Thames station.

Annotations.

"Ne quid nimis."

THE LANCET RELIEF FUND.

THE report of the Almoners of this Fund for the year 1900 is the twelfth in number, the Fund having come into operation upon Feb. 1st, 1889. The year 1900 showed, as might have been expected from the increase in the cost of living caused by the war, an increase in the number of applications and of grants. In 1899 the number of applications was 33 and the grants allotted numbered 24. In 1900 the applications numbered 42 and the grants allotted numbered 34. In 1899 there was only one grant which took the shape of a loan, all the others being definite gifts, while during the past year there were four loans and 30 gifts. The sums allotted varied from £5 to £20. It will be noticed that although the number of loans is still much less than that of the gifts, yet the loans for the year 1900 are more in number than the loans for 1899. We are rather glad to see the increase in the number of loans, for of the various cases which are presented for consideration there is none in which it is possible to extend a helping hand with a livelier sense of satisfaction than the case in which a timely loan helps a brother overtaken by adversity to help himself. But the form which the grant takes is no great matter. The chief thing to be considered is the advantage of the beneficiary,

and we as the benefactors can only hope that the grants from the Fund take that shape which is the most serviceable for those in whose interest they are bestowed. It is again our privilege to make public acknowledgment of the generous services rendered to this charity by the distinguished men who have associated themselves with it in the capacities of almoners and of auditor. We refer, of course, to Sir William Selby Church, Bart., the President of the Royal College of Physicians of London; Sir William Mac Cormac, President of the Royal College of Surgeons of England; Sir William Turner, the President of the General Medical Council; and Sir Henry Pitman, for many years the Registrar of the Royal College of Physicians of London. In presenting to each and all of them our thanks we assume to speak not only for ourselves as donors of the Fund, to whom its due administration is naturally a matter of solicitude, but in the name also of those who benefit by it and whose gratitude, not always articulate, is in not a few cases evidenced by expressions which it is a privilege to acknowledge but a satisfaction largely alloyed with sympathetic sorrow to receive. The application form of THE LANCET Relief Fund will be found in our present issue and can be readily detached for use in case of need. We again take an opportunity of asking those of our readers who may have occasion to assist in furthering any application made for relief from this source to note carefully the conditions on which applicants become entitled to participate in the benefits of the Fund, as it is still found that many requests are put forward which are so far outside the objects of the benefaction that they cannot be entertained and from such applications nothing but disappointment can result. All applications should be made on the prescribed form, and be sent to the Secretary of the Fund, Mr. Edward Davies, THE LANCET Offices, 423, Strand, London.

MEDICAL CERTIFICATES AND THE LONDON SCHOOL BOARD.

AGAIN the old story of the relation of the London School Board to medical certificates has come to the front. On Jan. 30th a father was summoned by the board for not sending his child to school. There was no doubt as to the child's illness but the father did not hand in a medical certificate and therefore the magistrate disallowed the costs. This seems hard, but of course the father should either have procured a certificate or induced his medical attendant to give evidence. The question of payment, however, comes in. No medical man should be required to give a certificate without payment, but in many cases the parents are too poor to pay for one. Mr. Nelson Hardy, writing to the *Standard* of Feb. 5th, tells the following story illustrative of this point. He was in attendance upon one of the School Board teachers, and received a letter from a clerk who wrote to him stating that the medical officer of the board had asked him to write to Mr. Hardy to know if Mr. Hardy would be kind enough to let the medical officer have details of the teacher's illness. Mr. Hardy thereupon wrote to the clerk asking whether the board would pay a fee for professional information. Next came a letter from the medical officer himself, "telling me," says Mr. Hardy, "that it was the duty of a teacher to supply the board with full and complete information of any ailment from which he is suffering, and that he thought it only right, in the teacher's interest, that I, as his medical attendant, should have the opportunity of giving the opinion he (the medical officer) had asked for." Mr. Hardy's letter continues as follows: "Of course, I sent no opinion, but wrote instead asking the medical officer if he considered it ethically correct to ask a professional opinion from one of his medical brethren for which he knew that his board had no intention of paying, and also was he not well aware that the regulations requiring the teacher to supply the board with full information as to his ailments gave the practitioner to whom the medical officer applied no legal claim upon his patient for assisting the medical officer in the discharge of his duties. I have received an acknowledgment of this letter from the clerk but no reply to my queries from the medical officer." We do not quite see why the medical officer returned no answer and are sorry that he is not in a position to say that the usual fee, for instance the sum of 2*s.* 6*d.*, that was agreed upon by the board with regard to revised certificates, should be paid.[1]

THE ILLNESS OF H.R.H. THE DUKE OF CORNWALL AND YORK.

WE are authorised to make the following statement concerning the recent illness of H.R.H. the Duke of Cornwall and York. For some days previously to Jan. 24th the children of His Royal Highness had been suffering from an ill-defined feverish malady, and on Jan. 24th he himself complained of feeling ill, although for a few days previously he had not felt himself. On Jan. 24th His Royal Highness went to Osborne and on arriving there he began to be much troubled with cough and took to his bed. His temperature then was 102° F. and his pulse-rate varied from 80 to 86. On Jan. 25th and 26th he continued in much the same condition, the cough being very troublesome. On Jan 27th a slight friction sound was detected at the left base and the patient had a very bad night. Throughout Jan. 28th he remained very restless and uncomfortable, having no appetite, a furred tongue, and pain in the epigastric region, which last symptom was probably due to the almost continuous cough. He again passed a very restless night. On Jan. 29th a slight redness on the forehead was noticed, the cough continued to be very troublesome, and the patient passed a bad night. On Jan. 30th the temperature was still 102°, nausea was present, and he complained of a feeling of being unable to breathe; air entered badly and respiration was almost entirely abdominal. He had slight delirium, with occasional vomiting, the blush on the forehead was more marked, and one gland behind either sterno-mastoid was perceptible. On the night of Jan. 30th His Royal Highness slept for two hours with the aid of soporifics and a definite rash was beginning to appear. At 6 A.M. on Jan. 31st the rash was profuse, elevated, and very sensitive to the touch; all the glands were enlarged. From this time onwards convalescence set in and His Royal Highness rapidly improved. The illness was undoubtedly a very severe attack of German measles.

MAX VON PETTENKOFER.

THE death of Professor Pettenkofer under tragic circumstances removes from among us one of the founders of public hygiene. From the first he turned his attention to the chemical side of the study of medicine, and he had ample opportunities offered him for study at the universities of Munich, Giessen, and Würzburg. Pettenkofer's views on cholera will be found in an original article which he contributed to THE LANCET of Nov. 1st, 1884, p. 769. Though at one time he held what have since proved to be erroneous ideas of the germ theory of disease, yet he was right in maintaining that pure water and the rational disposal of sewage were the most powerful factors towards upholding the public health. So strongly was he convinced of the truth of his views that he undertook to swallow a cholera broth to demonstrate the harmlessness of the cultivations. He did it and luckily for himself without ill effect, but he must have been

[1] THE LANCET, Jan. 30th, 1897, p. 331.

too much a man of science to have attached any significance to his solitary experiment. But the story suffices to show the intense earnestness of Pettenkofer as an investigator and the sincerity of his efforts to throw light upon a terrible scourge with a view to its prevention. We now know that Pettenkofer's views on sanitation, pure air, and pure water are correct and since the time when he expressed his views we have had ample practical confirmation of them. None will dispute that with the increasing attention that has been given to these specific matters the health of the people in all parts of the world has improved or that Pettenkofer, though an obstinate sceptic in certain matters, was a great sanitarian. Pettenkofer also turned his attention to many physiological problems of the utmost importance. His famous researches which established the quantitative relations between the air inhaled and exhaled by animals have been proved to be a valuable contribution to our knowledge of the metabolic processes of the animal body. Pettenkofer in conjunction with Voit made some most important observations on the effect of muscular exertion upon the consumption of oxygen and the production of carbonic acid. A related research was also conducted by these investigators on the functions of particular nutritives in the animal body which involved laying down a theory of metabolism. In these researches Pettenkofer worked out his now classical method for the estimation of carbonic acid gas in respired air and in the atmosphere. This method, as is well known, depends upon the action of carbonic acid upon baryta water, the gas being absorbed with the formation of barium carbonate. Doubtless his experiments on the processes of nutrition led him to seek a means of detecting bile in urine. The Pettenkofer test for biliary acids which he subsequently discovered depended upon the formation of a train of colours when urine containing bile was treated with common syrup and sulphuric acid. The most marked colour produced was a beautiful purple. The test has since been modified in various ways, the most important improvement being the use of glucose instead of cane sugar. Glucose does not char when dissolved in strong sulphuric acid, whereas cane sugar does, and this occurrence is apt to mask any colour that may be produced. The various schools of hygiene throughout Germany contain professors of public health who were formerly pupils of Professor Pettenkofer. The veteran *savant* died at the age of 83 years and such a great length of life was consistent with his precepts.

THE CRUELTY OF COMPULSORY RETIREMENT.

A CORRESPONDENT is moved by "the lamented death of our beloved Queen, and upon contemplation of the many glorious and magnificent achievements of Her Majesty's later years," to write to us upon the subject of the injustice and cruelty of compulsory retirement. There is liberty in most things, he says, but in the matter of labour liberty is in some quarters positively denied. Our correspondent further points out that the moment a man suddenly ceases from his wonted labour he begins to deteriorate, and instances a number of men and women who have done good work in old age. There is no doubt that a hard-and-fast rule of retirement acts in many cases both unjustly and injuriously—unjustly because age has nothing to do with a man's capacity for work, and injuriously because in some cases the retirement comes when the ripe experience of the worker is at its best. The old proverb, "A woman is as old as she looks and a man is as old as he feels," is a very true one, and it is ridiculous to say that no one is fit for work after 60. Some men are old at 40 while others are fresh and juvenile at 80, and the personal equation must never be overlooked. Compulsory retirement, so far as we know, only exists in Government offices and hospitals. In trades there is nominally no compulsory retirement, but if an artisan is out of work at the age of 60 he will find hardly any employer who will give him more work although the same employer would probably have no hesitation in keeping on a man who had grown up to the age of 60 in his employment. In this way retirement is to a certain extent compulsory, for if a man cannot get work he is compelled to cease from it. But in the liberal professions we think that compulsory retirement does in many cases result in harm. Supposing that the 65-year rule had obtained in the Church we should long ago have been deprived of the services of the present Metropolitan, a loss which would have been very great. It would be undoubtedly difficult to decide without giving offence as to when a man became unfit, but that some modification should be made in the present inelastic system of compulsory retirement is, we think, certain.

SUTURE OF WOUNDS OF THE HEART.

THE *Medical Record* of New York recently contained an important paper on this subject by Dr. L. L. Hill. A wound of the heart may be produced by a stab or by a blow upon the chest, especially after a full meal, when the distended stomach pushes the heart upwards and forwards and causes a larger area of the organ to come in contact with the thoracic wall. When hæmorrhage into the pericardium is not arrested a fatal result is inevitable, for when the limit of pericardial distensibility is reached the heart is unable to dilate and the cardiac movements are mechanically stopped. Dr. Hill therefore insists that it is the duty of the surgeon to operate in every case of wound of the heart. It is as important to do so as to relieve a strangulated hernia. In 45 collected cases in which injuries caused rupture of the heart without opening the pericardium a fatal result always ensued. Only one patient survived as long as 14 hours. Of patients operated on for heart wounds 41 per cent. have recovered, as against 10 per cent. of those on whom no operation was performed. Operators agree that for closing a wound in the myocardium interrupted sutures are preferable to continuous sutures. They should be close together and not involve the endocardium. Silk is the best material. The needle should be similar to that used for intestinal suture. The suture should be passed and tied during diastole. The first suture may be used to steady the heart and to facilitate the passage of others. Ollier was opposed to the use of a general anæsthetic, but if the pulse was strong and the general condition was good chloroform might be given. Parrozzani operated in two cases without anæsthesia and observed only slight movement when he cut the skin and when he passed sutures into the myocardium. Dr. Hill narrates the two following cases. A girl, aged eight years, carried in her waist a needle two and a half inches long which was driven into her heart in falling against a tree. She was brought to his house with anxious countenance, rapid and weak pulse, and laboured respiration. The needle had entered the left fifth intercostal space and the head could be seen moving under the skin with the cardiac pulsations. 10 drops of a 4 per cent. solution of cocaine were injected under the skin and an incision an inch in length was made down on the needle, which was extracted with dressing forceps. The wound was immediately closed. Recovery followed. In the second case a man, aged 28 years, received a stab in the left fourth intercostal space a little inside the nipple. The limbs became relaxed and the pulse was hardly perceptible. The sounds of the heart were indistinct and the area of cardiac dulness was increased. Evidently the pericardium was filling with blood and the heart's action would soon be stopped. External hæmorrhage was slight. The blood was let out by enlarging the opening in

the pericardium and the patient's condition at once improved. He recovered though pericarditis followed. To expose the heart for the suture of wounds Dr. Rotter, writing in the *Münchener Medicinische Wochenschrift* of Jan. 16th, 1900, p. 79, has recommended, as the result of experiments on the cadaver, that an incision commencing three-fifths of an inch from the left edge of the sternum be made outwards along the lower border of the third rib for a distance of four inches and a similar incision along the lower border of the fifth rib for about three and one-fifth inches. The external ends of these incisions are connected by a third one. The incisions include the whole thickness of the thoracic wall and open the left pleural cavity. The fourth and fifth ribs are divided and luxated from their sternal attachments and the whole flap, including the soft parts and the ribs, is turned inwards, like a door on its hinges. The only arteries which have to be ligatured are the intercostals. The lung projects into the wound and is pushed outwards and held aside while the pericardium is opened by an incision extending from the upper and inner to the lower and outer angle of the opening in the thorax. The heart is so completely exposed that even the posterior surface can be reached. If still more space is required the third rib may be included in the flap.

THE PRINCE OF WALES'S HOSPITAL FUND FOR LONDON.

WITH regard to this Fund we learn that the honorary secretaries are authorised to state that there is no intention of making any alteration whatever in the title of the Fund. Its full title is, it should be remembered, "The Prince of Wales's Hospital Fund for London to Commemorate the Sixtieth Year of the Queen's Reign." We are glad to have the opportunity of giving publicity to the above statement and are equally pleased to see the decision which has been arrived at. First of all, there is the sentimental reason. As the Preacher remarked, in a slightly different sense, "A good name is better than ointment," and names, without doubt, have a great influence. The title of the Fund could not be altered with any regard to the new position of its Royal founder without doing away with the memorial idea. Secondly, there is the practical side to be considered. The Fund has been known under its old name ever since its inception; subscribers have got accustomed to the title, large legacies and bequests may have been left to the Fund which if the name of the Fund were altered would have to be rebequeathed and, therefore, probably legal worries and expenses would have to be entered upon. For all these reasons we are glad to know that the old title will be kept, a title which will ever recall the sympathy of the Heir Apparent with the wants of the poor and needy, as well as the memory of the gentle, kindly monarch so lately entered on her rest to whom sorrow and suffering never appealed in vain.

A METHOD OF DISTINGUISHING THE BLOOD OF DIFFERENT ANIMALS.

IN the *Deutsche Medicinische Wochenschrift* of Feb. 7th Stabsarzt Dr. Uhlenhuth describes some experiments which he has made with human blood and also with that of a number of the lower animals, the result being that he believes that he has discovered a specific reaction for human blood and also for that of the common fowl, the horse, and the ox. The process of testing for ox-blood is described by him at length as follows. At intervals of from six to eight days about 10 cubic centimetres of defibrinated ox-blood were injected into the peritoneal cavity of a rabbit and after about five such injections the blood serum of the animal was fit for use. In the next place samples of the blood of a number of different animals were diluted with about 100 times as much ordinary water, making pale red solutions of about an equal depth of colour. The insoluble stroma was removed either by subsidence or filtration. Of each of the clear solutions thus obtained about two cubic centimetres were put into test-tubes of about a quarter of an inch in diameter, and then mixed with an equal quantity of a solution containing 1·6 per cent. common salt—i.e., twice the strength of physiological salt solution. It is essential to use this particular salt solution, for the normal serum of the rabbit mixed with plain water gives rise to a turbidity which might interfere with the recognition of the specific turbidity. With physiological salt solution the addition of rabbit's serum never causes turbidity. Dr. Uhlenhuth employed in his experiments both human blood and also that of the ox, horse, ass, pig, sheep, dog, cat, stag, fallow-deer, hare, guinea-pig, rat, mouse, rabbit, common fowl, goose, turkey-cock, and pigeon. To each of the test-tubes there was now added from a tube drawn to a fine point six or eight drops of the serum of the rabbit which had been injected with the blood of the ox, whereupon there was seen in the solution of ox-blood a distinct turbidity which was very evident by transmitted sunlight. The contents of all the other tubes remained perfectly clear. In course of time the turbidity increased and ultimately a copious flocculent deposit fell to the bottom. Normal rabbit's serum causes no turbidity in solutions of ox-blood. By the addition of a few drops of serum from the injected rabbit it was therefore possible to recognise ox-blood. In a precisely similar manner injections of human blood were given to rabbits, and serum from the animals was added to the 19 specimens of blood above mentioned, the result being that the solution of human blood, and that alone, became turbid and threw down a deposit. All the other solutions remained perfectly clear. Normal rabbit's serum causes no turbidity in solutions of human blood. This reaction, therefore, enabled human blood to be distinguished with certainty from the other kinds of blood above mentioned. The reaction was extremely delicate, only traces of blood being required for the determination of the species of animal to which it belonged. By it Dr. Uhlenhuth succeeded in recognising samples of human blood, ox-blood, and horse-blood which had been allowed to dry on a board and after four weeks were dissolved in physiological salt solution for the purpose of examination. His experiments were made in the Hygienic Institute of the University of Greifswald. If his conclusions are verified the reaction will obviously be of great use in medico-legal inquiries.

THE WHITE CROSS LEAGUE AND QUACKERY.

WE have received from the White Cross League two excellent pamphlets, entitled, "Quacks and their Advertisements," published at the offices of the League, 7, Dean's-yard, with a view of protecting young persons and others from the machinations of a dangerous class of impostors. The particular quacks aimed at are those who trade upon the ignorance and fears of youth, who begin by alluring their victims by advertisements of cures for supposed sexual weakness or sexual disorders, and "remedies" for conception, and who end by extorting large sums of money either by selling sham, and possibly dangerous, medicines, or by the simpler and more lucrative process of blackmail. The pamphlets in question are not intended for the perusal of those liable to fall into the hands of the sexual quack, but are rather for the instruction and guidance of parents, clergymen, and others from whom the word of warning should most effectively come, but who are often silent simply because their observation has not been aroused, while their knowledge of the dangers to be feared and of the means of guarding against them is insufficient. We

commend them to the study of medical practitioners who cannot be too well informed as to the methods adopted by the quack in order that they may be prepared to counteract his influence. Probably not every medical practitioner, for example, is aware of the "dodge" of sending to the applicant who answers an advertisement medicine calculated to produce precisely those symptoms most likely to alarm him, while a second instalment of less injurious character follows, with the result that the symptoms caused by the first doses abate and the quack claims (and the patient believes) that the treatment has been beneficial. In the second pamphlet we note a useful discussion of the manner in which dangerous advertisements may, to some extent, be put a stop to. These, when they appear in the public press, cannot be dealt with under the Indecent Advertisement Act which refers to notices affixed in public places or in urinals, and does not profess to purify newspapers. It is suggested, however, that in the case of a newspaper a letter to the proprietor may satisfy him that an advertisement, even though outwardly harmless, is giving offence to a section of his readers. We believe that some good may be done in this way, particularly if the persons remonstrating are of known position and influence; but, on the other hand, we cannot forget that advertisements which were patently and obviously offers of drugs to be used for the purpose of procuring miscarriage were accepted by hundreds of newspapers in all parts of the country. Until recent prosecutions of the advertisers and plainly spoken warnings uttered from the judicial bench caused the proprietors of certain newspapers to realise that their conduct was not only scandalous but actually dangerous to themselves the abuse was not abated.

"A FINE FOR DYING."

AT the present day, when so many people spend a portion of the year abroad, and particularly when invalids of various kinds seek the hotels of foreign resorts in consequence of medical advice, the circumstances related in our last issue (p. 444) under the above heading have a wide interest. Briefly stated, the matter is this: a gentleman, advised by his medical man, goes to Caux and stays in a hotel there. He dies and his relatives are charged £40 compensation by the hotel. The relatives on their return inform the medical man, who sends us their letter for publication as a warning to other practitioners. In sympathising with people who besides the loss of a relative are promptly mulcted of a considerable sum we must not entirely overlook the other side of the question. To a hotel a death may be a matter involving serious loss of reputation and of business. In the particular instance which concerns us we have no details of the nature of the patient's illness and the manner of his death. Presumably there was nothing unusual in either nor anything particularly likely to be damaging to the hotel should it become matter of common knowledge. Such being the case we think the charge made was certainly excessive. Moreover, it seems to us a most unreasonable procedure to make a fixed charge of £40 in every case where death occurs at the hotel. It is easy to imagine cases in which this charge would be much under the cost incurred by the hotel, just as in the present instance it was probably very much above it. In cases of infection, for instance, the necessary cleansing, possibly the closing of part or all the hotel, might well lead to loss of business far exceeding £40. On the other hand, in a case of what we may call ordinary death the loss to a well-managed hotel should be little beyond a few incidental expenses and should certainly be covered by far less a sum than that which was here charged. A moral, at any rate, may be drawn from this case. When a patient is going abroad obviously it may save his friends annoyance if their medical adviser should mention this matter to them and be able to give them some idea of what is likely to arise in the untoward event of death overtaking their sick relative.

THE COMMUNICABILITY OF GLANDERS.

THE President of the Board of Agriculture has appointed a committee to conduct experimental investigations into the communicability of glanders. The influence of mallein when repeatedly administered in arresting or curing the disease is also to be made the subject of inquiry. The committee will consist of Mr. A. C. Cope, M.R.C.V.S. chief veterinary officer of the Board of Agriculture (chairman); Professor J. McFadyean, M.B., C.M., B.Sc. Edin., M.R.C.V.S., principal of the Royal Veterinary College, Camden Town, London, N.W.; Mr. William Hunting, F.R.C.V.S., one of the veterinary inspectors of the London County Council; and Mr. J. McIntosh McCall, M.B., C.M. Glasg., M.R.C.V.S., assistant veterinary officer of the Board of Agriculture. Mr. A. H. Berry, M.R.C.V.S., of the Board of Agriculture, will act as the secretary to the committee.

MR. BURDETT-COUTTS AND THE REPORT OF THE SOUTH AFRICAN HOSPITALS COMMISSION.

As our readers cannot fail to have observed, Mr. Burdett-Coutts has lost no time in publishing long and elaborate communications in which he analyses the report of the Royal Commission on the hospitals in South Africa and subjects it from beginning to end to a very severe and trenchant criticism commenting at the same time very adversely on the conduct of the inquiry. We may safely leave Lord Justice Romer and his colleagues to take care of themselves and their report at the proper time and place. The whole question must engage the attention of Parliament and we make no doubt that some reply will be forthcoming to Mr. Burdett-Coutts's strictures. We hope to see the matter fully and fairly discussed, for it is one, if ever there was one, which demands to be very earnestly and dispassionately considered. We were not among those who denied *in toto* the existence of the state of things described by Mr. Burdett-Coutts. But we wanted to know, like everybody else, how far this state was unavoidable under the circumstances, or whether it was attributable to the negligence, incapacity, or fault of anyone. The mere fact of Lord Justice Romer having been appointed to preside over the Commission gave us the assurance that the inquiry would be thoroughly and dispassionately conducted. The report, which, be it remarked, was signed by all the Commissioners, struck us as an able and eminently fair public document. Mr. Burdett-Coutts thinks otherwise. He will have none of it, and enters a strong protest against it. We must be content to await further developments. We may, however, say this in the meantime in regard to the war in South Africa, because it must be patent to everybody now. Every day brings the fact to light more forcibly that neither this country nor the Government, nor, indeed, anybody, had formed any correct estimate of the very formidable nature of the undertaking. The war preparations were designed on altogether too small a scale. Medical provision was made for an army of some 50,000, whereas it should have been, as it turned out, for nearer 250,000. The transport in the country at the time of Lord Roberts's arrival was better adapted for peace manœuvres than for a large war, whose operations had to be conducted over an enormous extent of territory. But for these facts it seems to us that Mr. Burdett-Coutts would have found no ground for his bitter criticism. In order to obtain a correct view of

this war the military despatches, as well as the report of the Commission on the medical service and Mr. Burdett-Coutts's comments, require to be studied—a long and somewhat formidable task. The situation set forth in Earl Roberts's despatches was an altogether exceptional one. He had to undertake and carry out a very rapid plan of campaign and in order to do this successfully he had to incur certain risks by setting aside for a time the ordinary rules and precautions of war, and it was at this time and under these conditions that there occurred a very severe outbreak of enteric fever. The question is how far was it possible for anyone to foresee, and having foreseen it to prevent, the sad sequel.

THE ERITH DISTRICT COUNCIL AND THE MEDICAL OFFICER TO THE ERITH SANATORIUM.

MR. JOHN ELLIOT, medical officer to, and also founder of, the Erith Sanatorium, has been called on to resign his post by a majority of one at a meeting of the Erith District Council, and, according to a report of the proceedings in the *Erith Times* of Feb. 8th, it was on information verbally supplied by a subordinate nurse belonging to the establishment that this measure was decided upon. Needless to say that should such really prove to have been the case the intervention of higher authority is urgently called for and will no doubt be forthcoming. It is worthy of note that among the councillors who opposed Mr. Elliot there should be the mover of an amendment objecting to the forwarding of a vote of condolence to the Royal Family upon recent events.

AN ANOMALOUS CASE OF WORD-BLINDNESS WITHOUT APHEMIA OR AGRAPHIA.

PROFESSOR BRISSAUD of the Salpêtrière has made an interesting communication on the above subject, an account of which has appeared in the *Archives de Neurologie* for January. The case is one of word-blindness where the question arose as to whether the cerebral lesion was situated in the parietal (angular) region or in the occipital (calcarine) region and whether it was cortical or subcortical in position. The case was that of a man, aged 57 years, who was admitted to hospital for a severe attack of enteritis. His friends stated that he had lately failed to recognise ordinary objects and was inclined to oddities of conduct. The patient seemed to be well behaved on admission and after some effort and difficulty he succeeded in giving the following history. For a certain length of time prior to admission he found himself quite unable to read although he was, and still appeared to be, capable of writing. He continued in the extraordinary condition of being absolutely unable to read his name and address which he had just written with his own hand. He only saw the black lines of the writing on the white background of the paper, but they conveyed to him no significance visually. Hemiopia was also found to be present, but without hemiplegia. He continued in a febrile condition, passed into coma, and died the same day. At the necropsy the following pathological changes were discovered—viz., an old cortical softening involving the inferior four-fifths of the cuneus and the whole of the calcarine fissure as well as almost the whole of the lingual lobule on the left side; a secondary degeneration of the tapetum and of the optic radiations on the same side, but without lesion of the inferior longitudinal fasciculus or parietal cortex or any other subcortical region. The degeneration of the tapetum could be traced into the splenium of the corpus callosum and thus into the right hemisphere where it seemed to terminate in the tapetum and calcarine region of that side without affecting the optic radiations or the white substance subjacent to the calcarine cortex. The clinical and pathological interest of the case lay in the fact that owing to the intact condition of the auditory and visual word centres—the superior temporal and angular gyri—these centres could incite their respective kinæsthetic centres of word-utterance and word-writing to activity and thus both writing and speaking were possible, but the local destruction of the calcarine and adjacent cortex on the left side (primary visual cortical centre) produced not only hemiopia but also sufficient defect and disturbance in the secondary visual centre (visual word centre) of the same hemisphere to prevent the visual recognition of written or printed words.

ALE AND BEER IN THE SIXTEENTH CENTURY.

THE composition of ale and beer has always been of interest to members of the medical profession. Dr. Andrewe Boorde, who lived in the reign of Henry VIII., gives a full account of the composition of most of the beverages which were in use in his own time. He considered that water was not "holsome sole by it selfe for an Englyssheman" because it was "colde, slowe, and slacke of dygestyon." Ale, he said, for an Englishman was the natural drink. It was in his time made of malt and water fermented by yeast. It had, in his opinion, to be fresh and clear, not ropy or smoky. It appears to have been drunk very shortly after it was made, for he says that it ought not to be drunk under five days old, and that new ale was unwholesome for all men. He observed also that sour ale was good for no man, an observation which has been confirmed by subsequent experience. Contrary to the opinion of some modern brewers, he considered that barley malt made the best ale. He confessed, however, that in spite of its good qualities the beverage engendered gross humours, but he added that it made a man strong. In his description of the composition of ale no reference is made to hops and it appears that they were not used in the drink which he called ale for he looked upon other ingredients except those which he mentioned as being adulterations. The composition of beer was different. It was made of malt, hops, and water, and was, he observed, the natural drink for a Dutchman. Of late days it had indeed been used in England but unfortunately with detriment to many Englishmen, and it was especially harmful to those who suffered from colic, "for the drynke is a colde drynke," he observed. Yet he said it made a man fat—a point on which the observer could satisfy himself by examining the faces and other parts of the persons of Dutchmen. The beverage had, however, one good point, which was that if it were well served in good condition and not new it qualified the heat of the liver. Dr. Boorde was a great traveller and amongst other things he especially noticed the condition of the food and the drink in all the places which he visited. Of the ale of Cornwall he formed a very low estimate; it looked white and thick, "as if pygges had wrastled" in it, and he gives some unsavoury particulars as to the ill-effects of drinking this beverage into which, perhaps, it is hardly necessary to follow him. In Boorde's time it does not appear that Scotland was celebrated for good ale as a general rule. Although fish and flesh were to be had there in plenty, the ale, he says, was evil, with the sole exception of that brewed at Leith. Dr. Boorde was extremely severe in the punishments which he thought should be meted out to brewers of bad ale and to those who gave short measure. He gave it as his opinion that they ought to be placed in the Thames up to their chins and three inches above, and suggested that when they came out they would have to shake their ears as a spaniel that verily came out of the water. Dr. Boorde devotes one chapter of his book to soups, stews, and other articles of diet which would now be classified under the general heading of invalid food.

Amongst his recipes he recommended ale brews and caudles for weak men who could not eat solid meat. In many country districts these old-fashioned compositions are still used and sometimes perhaps with satisfactory results.

THE TRAFFIC IN OLD HORSES.

IN our issue of Dec. 3rd, 1898, p. 1492, in an annotation under the above heading, we called attention to the fact that an Order had been issued by the Board of Agriculture under which it should from Jan. 1st, 1899, be unlawful to convey from any port in the British Isles to any place outside the British Isles "any horse which, owing to age, infirmity, illness, fatigue, or any other reason, cannot be so conveyed without cruelty during the intended passage and upon landing." Offences under this Order were to be dealt with as under the Diseases of Animals Act, 1894. On Jan. 8th, two men, Ernest Ellis and Charles Wilson, were charged at the Thames Police-court with cruelty to 13 horses by leading them when unfit to travel. One horse was so weak and lame that it fell down in the road and the foot of another was partly destroyed. The horses were going to Rotterdam and had come from Stratford. Inspector Rogers said that there was no Government inspector to look after such horses. The wharf from which they were to be shipped belonged to the London and India Joint Docks Committee. They had an inspector, but he never interfered. Mr. Dickinson said that the defendants were only the agents of someone else and fined them £5 and £2 2*s*. costs each. We should be glad to know why such cases are not dealt with under the Order of the Board of Agriculture and the Diseases of Animals Act. If the accused, whose delinquency we have just described, had been thus proceeded against it seems that they could have been fined (apparently, under Section 51) a sum of £5 for each animal, or £65 in all. As we have said upon previous occasions, this infamous traffic ought to be stopped altogether. Not only does it give rise to gross cruelty, but it must be remembered that the flesh of these wretched animals is used for human food. Possibly it returns here in the shape of "delicacies," but even if it does not it is not fitting that we should assist in poisoning our neighbours on the other side of the North Sea.

ARSENIC IN ARTIFICIAL MANURES.

IN an annotation in THE LANCET of Dec. 22nd, 1900, p. 1828, we reported the presence of arsenic in artificial manures, and the question arises as to whether the quantity of arsenic thus present would be absorbed by plants and thus afford a possible explanation of the presence of arsenic in malt and hops. Our observations have given rise to much discussion amongst agriculturists, and especially amongst the manufacturers of superphosphate. The opinion seems to be generally held by agricultural chemists that the quantity of arsenic present in superphosphates might safely be neglected as it is so minute. In a communication sent to us by a firm of artificial manure manufacturers Dr. Stützer (the professor of agricultural chemistry at the University of Königsberg) arrives at the conclusion that the percentage of arsenic in the soil after 49 years of experiments, as at Rothamsted, would have risen to 0·0002. Of course, from these figures it would appear that we have to deal with such very minute quantities that there cannot be any question whatever of poisoning the plants through arsenic. We may point out, however, that this calculation is based upon the assumption that the quantity of arsenic in sulphuric acid is generally from 0·05 up to 0·10. Now according to the analysis of the sulphuric acid concerned in the beer-poisoning epidemic, as given in THE LANCET of Dec. 1st, 1900, page 1602, Professor Stützer will find that the amount of arsenic exceeded 1·4 per cent. In view of this fact his calculations are of no value whatever. Professor Stützer, however, points out that plants, especially in the state of germination, are just as sensitive to arsenic as men and animals and no ill effects have, as a matter of fact, followed the use of superphosphate as a fertiliser. On the contrary, the crops increase under the influence of superphosphate.

THE ALLEGED DRYNESS OF AIR IN ROOMS WARMED BY GAS FIRES.

COMPLAINT is frequently made as to the drying effect of gas fires on the air of the room, so that any information on the subject calculated to lead to this effect being avoided is welcome. According to Mr. Thomas Fletcher, F.C.S., a well-known gas-stove maker, the feeling of dryness is not due to the reduction of the moisture in the air but to some of the products of combustion escaping into the room. He regards the unpleasant feeling of dryness in the throat and nostrils as being caused by a trace of sulphur in the products of combustion escaping, a statement which would appear to be verified by the fact that a strip of wet blue litmus paper exposed to the air quickly reddens, pointing to the conclusion that the alleged fault of gas fires is caused entirely by defective flues. According to hygrometric measurements he shows that the percentage of moisture maintained in a room was much the same with a gas fire as with a coal fire. The results are much the same whether the stove has an air-warming arrangement or not, apart from the radiant heat it produces. The percentage amount of moisture was arrived at by using a wet and a dry bulb thermometer. The difference in degrees between the two thermometers was multiplied by six and the product deducted from 100, which was regarded to give approximately the percentage of moisture, taking complete saturation as 100. Mr. Fletcher states that this method is perfectly reliable for comparative observations between the effect of gas fires and coal fires at the same temperatures. It is concluded that in an inhabited room from 58 per cent. to 72 per cent. of moisture at about 62° F. will be pleasant, and this is easily obtained with either a coal fire or incandescent gas fire except when the outer air is completely saturated with moisture. Apart from the observation on the discomfort caused by sulphur compounds escaping in the products of combustion the feeling of comfort and warmth depends, as we should have supposed—although the point has not had sufficient attention paid to it in regard to the management of sick rooms and hospitals—rather on the amount of moisture in the air than on the actual temperature as shown by a thermometer.

BRAIN INJURY FOLLOWED BY WHISTLING SPELLS.

DR. WILLIAM KRAUSS has recorded in the January number of the *Journal of Nervous and Mental Disease* an interesting case of brain injury with consequent periods of whistling, which attracted much attention at the time and also possessed considerable clinical interest. The case was that of a man, aged 27 years, of Polish descent, by occupation a herdsman in the East Buffalo stockyards. He was a man of powerful build and physique, about six feet in height and weighing nearly 230 lb. Some months prior to the accident which brought on his present illness he had had a stroke of left-sided hemiplegia from which he was recovering. He slowly regained the use of the left arm and leg and was able to resume his occupation. On the morning of Dec. 30th, 1898, he was found unconscious and lying along a railway line with three scalp wounds, having probably been struck by a passing train during the night. On examination there was a depressed fracture of the skull three inches above and

one inch behind the left ear. No other important injuries were noted except a few body wounds of little importance. He was immediately trephined and the depressed bone was removed. On removing him to bed it was necessary to strap his arms as he constantly tried to remove the bandages and dressings. About 10 o'clock at night "he began to whistle, not the popular songs of the day, but the whistle-calls he was accustomed to use in calling or driving his flocks. He would continue whistling for about one minute, then would cease for five or 10 minutes, and kept this up for regular intervals till he died," four days after. The whistling was pitched always in the same key and was of the same intensity throughout, and at no time was it possible to distinguish any melody. It was audible throughout the ward and attracted the attention of patients and nurses. "To the physicians in attendance it was a strange experience to hear these whistle-calls coming from a patient in a state of unconsciousness." It was impossible to rouse the patient at any time after the accident, and he died unconscious but whistling until a few minutes before death. He was treated with milk diet and stimulants in abundance but never rallied. There was complete loss of control over the bladder and rectum; the pulse was slightly lowered, but the temperature was normal. The case is a unique one, the whistling spells entitling it to publication, but no explanation is advanced to account for this peculiar phenomenon.

ARSENIC IN BEER.

ALTHOUGH the history of the beer-poisoning epidemic is now pretty well known, yet the able report of Dr. G. S. Buchanan which he has just presented to the Local Government Board must be regarded as a valuable document on the question. It is, up to the date it was issued, a complete account of the epidemic. It deals with the number of persons attacked by the epidemic, the clinical characters of the epidemic malady, and the number of fatalities, and discusses the technical processes in beer that have led to its contamination. The position, it appears to us, is so clearly defined in this report that any further inquiry, relating at any rate to the beer-poisoning epidemic, would seem unnecessary. But, as Dr. Buchanan points out, important questions have arisen concerning the safety in regard of arsenic of all chemically manufactured sugars used in this country for brewing and for all other purposes, and also concerning the precautions requisite to safeguard the public against risk from introduction of arsenic along with chemical ingredients of beer and other articles of food or drink. On this account the desirability of expert examination of the whole subject of arsenic in relation to food in its medical, chemical, and technical aspects becomes apparent, and therefore a very wide field of investigation is presented which will impose considerable labours on the Commission which the Government has decided to appoint. We have expressed the opinion that no further investigation is needed in order to decide that increased legislative measures are required to provide absolutely against the possibility of beer being contaminated with arsenic. Dr. Buchanan's report confirms our view. An abundance of material is already at hand which should easily enable the Government to determine exactly the direction in which legislation could proceed with rapid and wholesome effect. By all means let the exhaustive inquiry into the presence of arsenic in most foodstuffs proceed, but the public need not wait for the report of such a prolonged investigation for legal protection from arsenic poisoning in beer.

AT the quarterly meeting of the committee of management of the Royal Free Hospital, held on Jan. 30th, the following motions, proposed by the chairman, the Hon. Mr. Justice Bruce, and seconded by Captain H. M. Jessel, M.P., were passed unanimously—viz.:—

The committee of management of the Royal Free Hospital record their profound sorrow at the death of Her Most Gracious Majesty Queen Victoria who, as the Princess Victoria, was a vice-patron, and during the 64 years of her reign was the patron of the hospital, and in 1837 granted to it the highly esteemed privilege of being named the Royal Free Hospital, and on many occasions has shown acts of kindness and generosity to the institution.

The committee respectfully offer to His Majesty King Edward VII., to Her Majesty Queen Alexandra, and to the other members of the Royal Family most heartfelt condolence on the loss which they and the empire have sustained, and beg to assure His Majesty, who has for many years been the vice-patron of the hospital, of their loyalty and devotion to his throne and person.

A PUBLIC MEETING will be held at the Town Hall, Rosebery-avenue, E.C., on Friday, Feb. 22nd, at 8 o'clock, to consider the question of the prevention of consumption in Finsbury. The chair will be taken by the Mayor of Finsbury, who will be supported by Sir William Broadbent, Sir James Crichton Browne, Professor MacFadyean, and others. Seats will be reserved for ticket-holders up to 7.45 P.M.

LOYAL addresses of sympathy and homage have been tendered to the King by the council of the Prince of Wales's Hospital Fund for London, the council of the Metropolitan Hospital Sunday Fund, the members of the Royal Medical and Chirurgical Society, the governors of Middlesex Hospital, of the Hospital for Consumption and Diseases of the Chest, Brompton, and by many other medical institutions.

AT a meeting of the Metropolitan Hospital Sunday Fund, held at the Mansion House on Feb. 7th, Sir William S. Church, P.R.C.P. Lond., was elected a member of the Distribution Committee in the place of the late Dr. Sedgwick Saunders.

A TELEGRAM from the Government of Mauritius to the Colonial Office, dated Feb. 8th, states that for the week ending Feb. 7th there were 16 fresh cases of plague, of which seven were fatal.

REFLECTIONS ON THERAPEUTICS.

BY HARRY CAMPBELL, M.D., B.S., F.R.C.P. LOND.,
PHYSICIAN TO THE NORTH-WEST LONDON HOSPITAL AND TO THE WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM.

VI.[1]

SOME GENERAL PRINCIPLES.

I MUST now ask attention to certain general principles which I have expounded at some length in a work on the Causation of Disease, and I shall seek to express myself in terms as simple as possible, convinced as I am that a thorough understanding of the principles in question is necessary to a proper conception of disease and its treatment.

Life a two-sided process.—First, then, I would ask the reader to keep ever before him the fact that life consists of the mutual interaction of the individual and his environment. In the case of unicellular organisms this truth is manifest, but we must never forget that it applies to multicellular organisms also—to man, to wit. As in the case of his amœboid ancestors inhabiting the salt ocean every active living cell in man's body is bathed in a saline

[1] Nos. I., II., III., IV., and V. were published in THE LANCET of Jan. 5th (p. 51), 12th (p. 122), and 19th (p. 201), and Feb. 2nd (p. 348) and 9th (p. 420), 1901, respectively.

medium[2] containing nutrient substances and oxygen; and the essential vital changes of the body at large take place between the cells and their environing plasma. It is needful to have a clear conception of the term "environment." In the case of a multicellular organism such as man it consists of all those influences which operate from without upon the organism as a whole (the external body-environment) and upon the individual cells from within (the internal cell-environment). The former includes the solid external world and the atmospheric medium—its condition in respect of humidity and pressure, the solid particles, parasitic and others, suspended in it, and the vibrating influences operating through it—thermic, actinic, luminous, electrical, sonorous, and the rest. It further embraces the macroscopic parasites, food, drink,[3] and clothing. It is also convenient to regard exercise of the muscles as pertaining to the environment, and in a measure it is justifiable, since all muscle-contraction is essentially a working against external force, which at the time of the contraction is thus influencing the body from without in a specific way.

These external physical agencies not only act upon man in his purely physical aspect: through his organs of sense they play upon his mental side also, evoking sensations, perceptions, and other psychic states. It is, moreover, by means of similar agencies that man is influenced by the minds of others, living and dead, such influences constituting a mental, as distinguished from a merely physical, environment.

The internal cell-environment embraces the various influences which operate upon the individual cells within the body (these influences being, of course, largely determined by the external environment)—the cell-environing plasma, with its oxygen, food-stuffs, salines, effete matters, micro-organisms, and the thermic, electric, and other vibratory forces, including the nerve-impulses striking upon the cell from without.

Disease a two-sided process.—Inasmuch as life consists of the mutual interaction of the individual and his environment, disease, which is a mode of life, may be defined as an abnormal or morbid interaction between these two great life-factors. I am aware that to make this definition strictly logical it would be needful to define the term "abnormal." Its meaning is, however, sufficiently clear for my purpose, which is to emphasise the two-sided character of all morbid processes; each factor—that of the individual and that of the environment—shares in those processes, and we cannot exclude the one or the other from the causation of disease.

Heredity plays a part in the causation of all diseases.—A due appreciation of this two-sided character of disease enables us to understand the important share taken by heredity in its causation, for seeing that disease consists in a morbid interaction between the individual and his environment, and that the organisation of the individual depends essentially upon heredity—i.e., he is what he is essentially by virtue of his ancestry—it follows that we cannot eliminate the influence of heredity from any disease. When an individual develops such a disease as granular kidney or megrim, independently of any specific environmental agency, it must obviously—unless it is a sport of nature, an entirely new development—be inherited from some ancestor,[4] but when it arises from the action on the individual of some specific environment, such as a pathogenic microbe, heredity is apt to be lost sight of as a factor. One must, however, remember that whether an individual shall, or shall not, respond morbidly to a specific environment depends not upon that environment only, but also upon the inherited structural peculiarities of the individual himself. Some animals, for instance, are in no way injuriously affected by micro-organisms which to others are deadly. Thus the carnivora are practically immune from tuberculosis, and this immunity obviously depends upon organisation, which in its turn depends upon heredity—i.e., these animals are immune because of the immunity of their ancestors. Woods Hutchinson has suggested that this resistance of the carnivora to the attack of the tubercle bacillus has been acquired by the survival through ages past of such among them as have not succumbed to tuberculosis derived from devouring tuberculous animals, and there can be no doubt that the different resisting powers of different species, and of different individuals among the same species, to the attack of micro-organisms, has been in large measure brought about by elimination—by the operation of natural selection.[5] Such being the case, we see how impossible it is to ignore the influence of heredity in the causation of any of the multitudinous diseases arising from micro-organisms, such as tuberculosis, ague, rheumatic fever, and malignant tumours. And the same remark applies to every disease due to the action of a specific environment. Space does not permit me to develop this thesis at length, and for farther arguments in its support I must refer the reader to my larger work already quoted. I am most anxious that this great principle should be widely understood; ignorance of it is checking advance in many directions.

Characters acquired by the individual not inherited.—The subject of the inheritability of acquired characters—diseases among others—has of late years been brought prominently before the profession by Dr. Archdall Reid, and in the controversy which he has provoked much confusion has resulted from several of the disputants failing to understand the meaning of the term "acquired character." We must, then, first be clear what we mean by it. When germ and sperm unite there is started on its career a new being. The conflict of unlike hereditary tendencies derived from these two elements may lead to the development in the offspring of entirely new characters. Such characters, or natural variations as they are called, are capable of being transmitted to future generations, and it is upon them that natural selection operates, producing in the course of generations profound racial effects; but they are not *acquired* by the new being, though they are often spoken of as if they were; they develop *de novo*. Acquired characters are those impressed upon the new being by its environment; the organism is capable of being moulded by its environment in a multitude of different ways, and it is these *environmental mouldings*, as they might be called, which constitute true acquired characters. Thus all the changes wrought in the nervous system by education are acquisitions, as also are mutilations and the hypertrophy and atrophy of organs from use and disuse, these being due to peculiar influences working through the cell-environment.

Now a careful search by the most eminent biologists throughout the world during the last 20 years has failed to discover a single unmistakeable instance of such an acquired character being inherited. All the valuable acquisitions of the brain and nervous system die with the individual; and in the same way mutilations, such as the piercing of the ears, the circumcision of the prepuce, the docking of tails, though continued through many successive generations, have no effect whatever upon the offspring. If a man develops his biceps muscles to the utmost capacity his children are not born in consequence with these muscles larger than would otherwise be the case. Similarly, the imperfect development of the jaws and teeth among the civilised is not due to any hereditary defect consequent upon their imperfect use through many successive generations; it is acquired for himself by each individual and the defect is not transmitted. Were the children of parents presenting such defects fed from early infancy on coarse food necessitating the thorough use of the jaws and teeth, we should find these structures as well developed in them as in the primitive savage.[6] To mention one other case only here—gout is essentially an acquired disease due to a specific environment, and because the individual has led a gout-producing mode of life his children are not on that account rendered more liable to develop the disease, though they may undoubtedly inherit from him the tendency to respond in the same morbid manner to the same environment if they are exposed to it.

[2] The superficial horny cells of the skin are not thus bathed, but they are practically dead and in process of being shed.

[3] Be it observed that the respiratory and alimentary tracts are, strictly speaking, external to the body.

[4] It is well known to biologists that the mingling of unlike tendencies in germ and sperm may lead in the new being to which they give rise to entirely new characters—i.e., characters not belonging to any ancestor. Such new characters constitute natural variations; and it is the opinion of Weismann that one of the purposes served by sexual reproduction is the creation of such varieties, without which evolution by natural selection would be impossible. Now it is possible that variations thus arising may occasionally be pathological, and it might be argued that they afford instances of diseases in which heredity plays no part. It is, however, probable that such pathological variations, if they do occur, are rare, and they may for all practical purposes be disregarded.

[5] I have shown how by the elimination of the susceptible a race may become adapted to pathogenic microbes, such as those which give rise to malaria (see p. 231 *et seq.* "The Causation of Disease," 1889). Dr. Archdall Reid has independently advanced the same view (see, e.g., his work, "The Present Evolution of Man").

[6] It is, however, possible that sexual selection may have had some influence in causing the jaws of the civilised to be smaller among civilised than among primitive peoples.

Normality in respect of the individual and the environment.—In seeking to discover what constitutes the normal man and his normal environment the prime fact to remember is that neither can be defined except with reference to the other. If an individual can keep healthy in a given environment (a term which, as we have seen, refers to a highly complex series of conditions) he is normal as regards it, and it is normal as regards him; if he cannot, then each is abnormal as regards the other. A negro can keep well in parts of Africa which kill the white man and the white man can keep well in parts of Europe which kill the negro. The one is normal as regards the African environment, abnormal as regards the European; the other is abnormal as regards the African environment, normal as regards the European. And similarly as regards the environment, each may be regarded as normal or abnormal according to the individual living in it.

This relativity of normality has an important therapeutic application. From it we learn that we cannot regard an individual as absolutely abnormal because he cannot keep well in an environment in which the majority can. One who under average conditions suffers from megrim, asthma, gout, or rheumatism may under other conditions enjoy perfect health, and it is the business of the physician to find out what those conditions are. Thus there are few cases of spasmodic asthma so severe that they cannot be cured by residence in some particular region, could one only discover it, and in relation to such a region the sufferer is strictly normal. In like manner victims of gout, megrim, and rheumatism may throw off these disorders under altered conditions of life, being as regards these altered conditions perfectly normal. As a further illustration of the same principle I may cite the case of a lady who, while living in a London suburb where she superintends a household under somewhat harassing conditions, suffers from bronchitis, indigestion, eczema, and general nervousness, all of which disappear, leaving her in the best of health, when she goes to stay with a married daughter in Berlin, but only to reappear on her return to the old environment. We must not, however, push this principle too far. I do not wish to imply that an individual who can only keep well under carefully chosen conditions can be regarded as coming up to a high level of physical fitness. I merely wish to insist upon the relativity of normality. Individuals differ considerably in their ability to cope successfully with different varieties of environment. The more rigorous and varied the conditions under which an individual can keep well, the higher his level of physical fitness. Some there are who can retain their health in many different climes, who can undergo with impunity the severest hardships, who can resist the onslaught of the most deadly microbes, be guilty of all kinds of excesses, eat enormously and of the coarsest foods, smoke all day, and consume large quantities of alcohol, who can undergo great physical and mental toil—and in spite of all this remain in seemingly perfect health; though I am not going to argue that they can do all these things with absolute impunity. Such men, we say, are endowed with a magnificent constitution. Others there are who can only keep well under a comparatively simple and carefully chosen environment who must select a climate with the utmost care, live on the simplest food, avoid alcohol and tobacco, and undertake only moderate mental and physical labour. These must be regarded from the biological standpoint as inferior animals. Nevertheless, they often live longer than their more robust brothers, partly because they have to take greater care of themselves and are thus protected from many agencies which make for destruction, and partly also in some cases because, though apparently frail and constantly ailing, their death-resisting power is actually greater.

And here let me observe that it is a great mistake to measure a man's physical fitness by his stature and muscular strength, as is so often done. Rather should it be measured by his power of endurance and ability to resist death, both of which are independent of great stature and muscular development. The difference between a man of powerful and another of slender muscular build is much the same as that between the cart-horse and the racehorse: it is essentially a matter of breed. As a matter of fact, tall men are generally less enduring and shorter lived than small men, and very muscular men may be in many respects delicate. Dr. Hancock, who has had thousands of coolies under his supervision, tells me that it is precisely those who have the best muscular development and are thus most valuable to their masters who are most frequently carried off by cholera—who have the least germicidal power in respect of this disease.

Now, inasmuch as normality as regards the individual can only be defined in reference to the environment, and inasmuch as it is impossible to construct a rigid standard of normality for the latter, it is obviously impossible to construct a rigid standard of normality for the individual. Nevertheless we have a sufficiently clear notion of what constitutes a normal individual. Such a one must be sound in body and limb, as popularly understood, and he must be endowed with a fair average of intelligence and moral capacity; he must, moreover, be capable of living, under an average rigorous environment, to old age in good health, subject of course to those temporary departures from it which (under the most "easy" possible environment, and *a fortiori* under the influence of those definite pathogenic agencies which the average environment entails) are inseparable from life. Our conception of structural normality, therefore, should have reference not only to any one portion of the life of the individual, but to his entire vital span. If under an average environment, Bright's disease, rheumatic fever, ovarian cyst, strangulated hernia, cancer, or such like disease develops, the individual does not answer our test of normality, and viewed from this standpoint must be regarded as abnormal. If every individual of the community came up to the normal as just defined, then under a perfect system of sanitation the only deaths would be those due to accidental causes. And here I would point out that the hygienist has fallen into the grave error of paying too exclusive attention to the environmental factor in disease.

The inadequacy of a perfect system of sanitation to sustain a high level of racial health.—Sanitation is doing much, and will do more, but it will never by itself secure a supremely healthy race. Its disciples assume that disease originates essentially in a faulty environment, and that by a proper regulation of the environment—i.e., by a perfect system of sanitation and by that alone—we can rear a healthy race. This is one of the most grievous fallacies of our time. Never was there a more fatal delusion. We cannot beguile nature with such a bribe; she will not be propitiated by having the environment carefully adapted to, and made easy for, each individual. The whole history of biological evolution is one long story of the *adaptation of the individual to the environment* by a ceaseless and rigorous elimination of the unfit; and it is in this way and this way only that a high racial efficiency can be sustained among men or any other living things. The hygienists are seeking, but they will ever seek in vain, to elude the inexorable law. Were the human species perfectly stable, showing no tendency to vary from generation to generation, their dream might be realised, but no species is, or ever can be, stereotyped. Individual members of it are constantly varying, many of them falling short of the standard of excellence. No two organisms, indeed, are born exactly alike. Taking all the children of a family, and striking their mean standard of fitness, we find that some surpass, while others fall short of this standard, and it is quite impossible to prevent racial deterioration unless those who fall far short are eliminated (as in the ordinary course of nature they would be), because by the law of heredity all natural variations tend to be inherited, and if the unfit are not eliminated their number must increase from generation to generation. I here refer to general fitness, but my proposition applies to each and every character of the individual. To take an example: "A high *racial* (I use this term as distinguished from *individual*) excellence in respect of visual accommodation can only be maintained by a stringent elimination of those displaying errors of refraction. In civilised communities such are not eliminated, and consequently the race is deteriorating in respect of eyesight. In this instance the defect is remediable and the loss is in the main an æsthetic one, but countless other instances could be mentioned in which defective elimination is lowering the efficiency of our race, and in consequence we have among us a vast multitude of the unfit. As a physician I am seeing every day of my life people whom I am compelled to class among nature's failures—people who fall short of the standard which makes life worth living, people who in virtue of their unfitness suffer more than they enjoy. When, therefore, I see, and share in, the vain struggle to patch up such failures and when I read elaborate systems on treatment, I ask myself: Why not look facts sternly in the

face and strike at the root of the evil by conforming to the supreme and inexorable law?"[7] Nothing is more certain than that it is only by a ceaseless and vigilant weeding-out of the unfit variations (which even under the most perfect system of hygiene must necessarily be born) that a high standard of racial excellence can be obtained.

Strange, indeed, it seems that this stern elemental truth has not been recognised by the pathologist. The explanation lies, I believe, in the fact that, all too intent upon his microscope and test-tubes, he has lost sight of the terrible potency of heredity. But recognising it, as we now, I will suppose, do, how, let us ask ourselves, shall we give full play to that searching process of elimination which alone can sustain a high level of racial fitness? Let me, in answer, repeat what I have already said in another place: "Nature's method of elimination is a merciless one; she unceremoniously sacrifices the individual for the benefit of the race—'so careful of the type is she, so careless of the single life.' The sole object of individual elimination, racially considered, is to prevent the unfit individual from leaving offspring to inherit his unfitness, and Nature in her rough-and-ready way achieves this object by simply wiping him out of existence. The same end can be attained, however, by the unfit abstaining from getting offspring and choosing to join the ever-increasing army of the non-marrying. Elimination from the racial standpoint means not having offspring, and all who do not leave offspring are racially eliminated—unrepresented in posterity."[8]

OUTBREAK OF TYPHUS FEVER IN MANCHESTER.

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HAVING been engaged with Dr. James Niven in dealing with cases of typhus fever which have occurred in Manchester, I beg to forward you the following brief account of the outbreak.

On Jan. 8th the medical officer of health of Manchester was informed that several of the women employed at a rag-sorting establishment had been attacked by some disease about the nature of which there was some doubt. These cases were first reported as cases of enteric fever, but they all gave a negative reaction with Widal's test. On inquiry it was found that of 14 girls and women who were employed in a particular room in this rag-sorting establishment seven, together with an office-boy who was constantly going to and fro in the room, had been attacked by the disease. These women were employed in sorting clean woollen "tailors' clippings" which are collected from various tailors' shops, chiefly in Manchester, but to some extent from other towns. This rag-sorting establishment is a small place containing two rooms which communicate with each other. All the persons attacked were employed in the smaller room where woollen rags are sorted, while not one was attacked in the larger room where only cotton rags are sorted. Both the cotton and woollen rags are quite clean and new, coming only from tailors' and clothiers' establishments and from warehouses. None of them are dirty rags such as are seen in the places of marine-store dealers. It was found that all these persons began to be ill between Dec. 20th and Dec. 24th, 1900, and when the medical officer of health was informed of the outbreak two patients had died, one was moribund, and the rest were convalescent. We were, therefore, under considerable disadvantages in making a diagnosis.

The following were the principal features of the illness in these eight patients:—The onset was sudden, the illness commencing with severe headache, pain in the back and limbs, chills, and in one or two cases, vomiting. The patients were very ill within two or three days of the onset of the disease. In four of the cases deafness came on about the ninth to the eleventh day. In three of the cases a rash described as having been of a "measly" character had been observed in the wrists, arms, chest, and face, coming on in one case on the seventh day, in another case on the fifth day, and in the third case at a period not defined. Three of the eight patients died. In the others the illness terminated by crisis—in one case on the twelfth day, in three cases on the thirteenth day, and in one case on the sixteenth day. A provisional diagnosis of typhus fever was made and subsequent events proved this to be correct.

One of the patients (Kate C——) had been lodging with Mrs. F——, and 10 days after the onset of Kate C——'s illness Mrs. F—— began to be ill and was removed to Monsall and the typical typhus eruption was observed. One of the cases removed to Monsall, but not seen by us on Jan. 5th, we found on the 20th to have presented a distinct typhus eruption. Another patient (Maggie G——) whose illness commenced on Dec. 31st, 1900, was on Jan. 2nd, 1901, admitted into a general hospital. She was removed to the Fever Hospital as soon as the outbreak was discovered and the patient could be traced, but in the meantime she had infected a nurse, on whom also the typical eruption was seen. This girl also infected her father, mother, and two younger children. The disease ran a typical course in these cases. Two children living next door were also infected by Maggie G——. Another of the girls from the workshop (Mary McL——) infected her mother and brother and two sisters. We were able to see these secondary cases at an early stage, to follow the course of the disease, and thus to place the diagnosis beyond doubt. In the course of the investigations we have learned that other girls, working under the same firm but in another warehouse, left off work on account of illness about Christmas. These girls, however, were not notified to the health office as suffering from infectious disease. Subsequently cases have occurred in each house, one of the girls having infected five persons and the other girl three persons. In the Ancoats district, where the workplace is situated and where these girls work, five other cases in one family have arisen in which no direct connexion with these rag stores has so far been traced. Up to Jan. 10th there have been 28 cases connected with this rag-sorting establishment, and five cases occurring in the neighbourhood in which the source of infection is not as yet known, giving 33 cases, the patients in eight of which have died.

On Feb. 1st, a case of typhus fever was notified in another part of the city and found to be a typical case of typhus fever. In connexion with this case a remarkable history has been obtained. It has been traced through a direct succession of cases right back to the beginning of June, 1900. One of the cases, which commenced on July 19th, was at the time diagnosed as typhus fever. Investigations made at the time failed to reveal the origin of the disease, nor did any subsequent cases come to the knowledge of the medical officer of health. There is, however, no doubt now about the diagnosis in the series of cases extending from June, 1900, to February, 1901, of which the above was one, since different observers—the medical officer of health, Dr. E. S. Reynolds, Dr. Marsden, and a medical attendant on some of the cases—had either diagnosed typhus fever or entertained a strong suspicion of it in one or other of the cases. The temperature charts taken in some instances at the workhouse hospital are also typical. In some of these cases, which occurred about July, August, and September, 1900, the patients were rag-sorters. None, however, worked at the place where the sudden outbreak occurred in December. These women were, however, acquainted, and possibly intervening cases connecting the two outbreaks will come to light. At the present moment, however, the sudden outbreak in December is not clearly accounted for. The total number of cases so far ascertained is as follows: (*a*) cases connected with the outbreak among rag-sorters in December, 1900, 33; (*b*) cases traced from June, 1900, to Feb. 1st, 1901, 18; (*c*) a probable case traced, one; (*d*) a case reported as probably typhus and removed to Monsall, one—a total of 53 cases. In addition there have been seven cases reported in which there is considerable doubt as to the diagnosis.

The following is a brief summary of the administrative measures carried out:—All persons who have been attacked have been removed to the Infectious Diseases Hospital, and the houses which they occupied and their clothing have been disinfected. An effort has been made to induce persons who have been in contact with these patients to undergo a fortnight's isolation for observation in a building specially set aside for the purpose. 24 persons are, or have been, under observation in this manner. A house-to-house inspection has been made in the

[7] Campbell: Monogamy in its Relations to Longevity and the Diseases of Late Life, THE LANCET, June 9th, 1900, p. 1654.
[8] Loc. cit.

neighbourhood of all the infected houses with a view of discovering cases of illness. Every house found in a dirty condition has been disinfected. Fortunately, none of the rags which had been sorted in the department where the outbreak occurred had been sent away. We were thus able to disinfect the whole of the rags which could have been infected by these girls and women. The workshop also was disinfected. All persons who have been in contact and who are not undergoing quarantine are being kept under observation at their homes.

A CONSTANT WATER-SUPPLY AND THE LONDON SANITARY AUTHORITIES.

OVER 50 years ago the City of London Commissioners of Sewers received from "their faithful and obedient humble servant, John Simon" (now Sir John Simon, K.C.B., D.C.L., LL.D.), a report[1] on the sanitary condition of the City, to which he was officer of health. The report dealt with questions of drainage, which that year for the first time was under municipal control, with offensive trades, with intramural burial, with unhealthy houses, with the social condition of the poor, and with water-supply. At the present time cesspools in London have ceased to exist, house drainage is universal, offensive trades are placed under strict supervision, intramural burial has been abolished except at St. Paul's Cathedral and Westminster Abbey, large blocks of insanitary houses have been removed, and the social conditions of the poor have greatly improved. Much that is said on these subjects would if stated now be looked upon as platitude—so greatly has the level of sanitary requirements been raised and universally accepted. The water-supply of the City has also been very greatly improved, yet the remarks made 50 years ago with regard to the City to some extent apply to parts of Water London which are still without a constant supply.

"I am sure that I do not exaggerate the sanitary importance of water," wrote Mr. Simon, in the first paragraph of his report on water-supply, "when I affirm that its unrestricted supply is the first essential of decency, of comfort, and of health; that no civilisation of the poorer classes can exist without it; and that any limitation to its use in the metropolis is a barrier which must maintain thousands in a state of the most unwholesome filth and degradation." No one will be found to disagree with Sir John Simon's dictum. When water is constantly supplied it can be drawn as it is required, and there is no reason why it should be stored in a house. When the supply is not constant storage becomes necessary. On the comparative merits of these two systems the report from which we have already quoted contains a decided expression of opinion. The words are as follows: "I consider the system of intermittent water-supply to be radically bad, not only because it is a system of stint in what ought to be lavishly bestowed, but also because of the necessity which it creates that large and extensive receptacles should be provided, and because of the liability to contamination incurred by water which has to be retained often during a considerable period." We are quite aware that many sanitary authorities have spoken in favour of cisterns, but this was in the belief that the water companies might break down, so that storage at home was necessary. If the water companies supply water unfailingly there can be no need for cisterns.

Lord Llandaff's Commission have lately heard evidence given in favour of the rehabilitation of the water cistern by Sir William Knight, chairman of the Southwark and Vauxhall Water Company and a gentleman who has held the position of Lord Mayor of London. The Commissioners had also brought to their notice an ingenious cistern which was constructed so that a deposit in it was practically unknown, because the bottom of it was so arranged that the water consumer drank the sediment daily, as it was made, a method which rendered any considerable deposit a matter of impossibility. Some years ago, when cisterns were universal, or at any rate common, in the East-end, it was found in one case that the receptacle was used as a bath as well as for the storage of water. The house was let out in tenements and the cistern supplying a family on one floor was situated in a room hired by another family which occupied a room on a higher floor, where it was conveniently placed for washing the children. Lord Llandaff's Commission had amongst other interesting exhibits the opportunity of seeing a vessel containing dead mice and mud which it was stated had been removed from an East-end cistern. In dealing with similar pollutions Mr. Simon went into great detail as to the contamination of cisterns in the City 50 years ago and he remarked: "Everyone who is personally familiar with the working of this system of intermittent supply, can testify to its inconvenience; and though its evils press with immeasurably greater severity on the poor than on the rich, yet the latter are by no means without experience on the subject." In summing up the essential conditions of a good water-supply he insists "that there should always and uninterruptedly be a sufficiency of water to fulfil all reasonable requirements of the population."

Theoretically, Parliament soon became convinced that a constant supply was necessary. Practical expression was given to this opinion by the Metropolis Water Act of 1852 (15 & 16 Vict. cap. 84).

Section XV. of this Act provided that after the expiration of five years from that date every company, subject to the provisions of the special Act relating to the company, should provide and keep in the district mains already laid down or hereafter to be laid down by them *a constant supply of pure and wholesome water* sufficient for the domestic use of the inhabitants of all houses supplied by the company at such pressure as would make the water reach the top storey of the highest of such houses, but not exceeding the level prescribed by the special Act of such company,[2] but it was provided that no company should be bound to provide a constant supply of water to any district main until four-fifths of the owners or occupiers of the houses on such main should in writing under their hands require the company to provide such supply, nor even upon such requisition, in case it could be shown by the company objecting to the alteration that more than one-fifth of the houses on such main were not supplied with suitable water fittings, constructed according to the regulations prescribed either by an Act of Parliament or made by the company with the approval of the Board of Trade; and after any such requisition for a constant supply should be delivered to the company it should be lawful for a surveyor, acting under the authority of the company, between certain specified hours, to enter into any house which would be affected by the alteration, in order to ascertain whether the water fittings in the house conformed with the regulations; and it was further provided that any company might, with the consent of the Board of Trade, suspend the giving of a constant supply, or give it in succession to the several districts of the company or any parts of such districts as might be found to be convenient; and the company were allowed, after due notice, to abstain from supplying or to cut off the communication pipes and withdraw the supply of water from any house in which the water apparatus was not in conformity with the regulations.

It will be readily seen that rather cumbrous proceedings were necessary to enforce the working of the provisions of this Act, and the result was that they were not used, and as a matter of fact no requisition for constant supply was ever made under the Metropolis Water Act of 1852. A Parliamentary Committee which was appointed in the year 1871 to report on the Metropolis Water Bill introduced that year pointed out that a written requisition of four-fifths of the inhabitants of a clearly defined area could not be easily obtained even for a good object, but that was not the only difficulty in this particular case, because the term "district main" in the Act of 1852 had no clear and definite meaning, and therefore the terms of the requisition rendered the provision "wholly nugatory." Evidently those who framed the Act were more to blame in the matter than the unfortunate water consumers.

Between the years 1852 and 1871 questions concerning water-supply frequently engaged the attention of Parliament. A report of the Royal Commission on the Prevention of the Pollution of Rivers appeared in the year 1866, and ultimately led to legislation. The outbreak of cholera which was traced to the water distributed by the East London Company led to the introduction of Bills by that company and these were reported on by a committee of the House of Commons in the year 1867. Two years later a Royal Commission issued a report on water-supply. These reports and other evidence led the Parliamentary Committee in 1871 to insist on the advantages of a system of constant supply, and in consequence of their advice the Metropolis Water Act of that year was passed. Under the provisions of this Act the matter was placed in the hands of various metropolitan authorities—for the City their Corporation, for other parts of

[1] Report on the Sanitary Condition of the City of London for the year 848, by John Simon, F.R.S. The report is dated Nov. 6th, 1849.

[2] The Kent Waterworks and the Hampstead Waterworks Company (a business afterwards acquired by the New River Company) were not required to give a supply at any height exceeding 180 feet above Trinity high-water mark, nor the East London Water Company to any height exceeding 40 feet above the level of the pavement nearest the point at which such supply should be required

the metropolis the Metropolitan Board of Works, and for other places the commissioners, local boards, or vestries. The sections of the Act which apply to constant service are Sections 7 and 8.

Under Section 7 every company might, and from and after the expiration of eight months from the passing of the Act every company was compelled, when required so to do, in the manner directed by the Act, to provide and keep throughout their water limits a constant supply of pure and wholesome water sufficient for the domestic purposes of the inhabitants within those limits constantly laid on at such pressure as would make it reach the top storey of the highest houses within the area (but not exceeding the level prescribed by the special Act of each company), and every such company was required, subject to the provisions of the special Act as the same are amended by the Act, to give the inhabitants of the area a constant supply for domestic purposes in the manner prescribed. Section 8 provided that at any time after the expiration of six months from the passing of the Act the metropolitan authority should, whenever they were of opinion that there should be in any district a constant supply, make application to the company within the water limits in which the district is situated, requiring a constant supply in the district, and any company might without any such application propose to the metropolitan authority to give a constant supply in any district.

Sections 26, 27, and 28 dealt with the provision and regulation of the fittings necessitated by water supplied on the constant system and for the publication in the *London Gazette* of notices of the alteration in the system of supply.

In the year 1897 a Metropolis Water Act was passed (60 & 61 Vict. cap. 55) and fresh regulations were made to ensure that continuous supply should be given by the water companies. Under the provisions of this Act any consumer or any local authority was empowered to bring before the Railway and Canal Commissioners any complaint as to the quantity and quality of water supplied or their failure to perform any statutory duty. The Railway and Canal Commissioners were empowered to impose penalties and to direct the removal of the cause of complaint. Water consumers were allowed to have (if they could get it) the assistance of the local authorities in obtaining the determination of any question of general interest in reference to the quantity and quality of the water supplied or the charges made by the companies. The local authorities were authorised to become parties to the legal proceedings and to make themselves liable for costs. Lord Llandaff's Commission in their report say they have been struck by repeated instances of ignorance or neglect on the part of the local authorities and of the water consumers for whose benefit these enactments were made. The local authorities which are empowered under the provisions of the Metropolis Water Act of 1897 to assist any water consumer who may feel himself aggrieved are the council of any county, borough, or district, for the City the Corporation of London, and any vestry, district board, or local board of health in the county of London, each authority having such power in the district in which the aggrieved water consumer is living. Under the provisions of the London Government Act, 1899 (62 & 63 Vict. cap. 14) the metropolitan boroughs have been entrusted with the powers and duties formerly possessed by the vestries in regard to the water-supply. In the interests of the people of London it is to be hoped that they will exercise their power to ensure a constant service of water throughout the whole of London. When there is a constant water-supply cisterns are not only unnecessary and useless, they are harmful, inasmuch as they introduce the possibilities of contamination of the stored water

Enough, we hope, has been said to show that the new regulations which the metropolitan water companies wish to impose on the people of London ought not to be legalised.

FOREIGN UNIVERSITY INTELLIGENCE.—*Basle:* Dr. Karl Haegler, *privat-docent* of Surgery, and Dr. Friedrich Egger, *privat-docent* of Medicine, have been appointed Extraordinary Professors.—*Berlin:* Dr. Georg Wetzel has been recognised as *privat-docent* of Anatomy, Dr. Felix Klemperer as *privat-docent* of Medicine, and Dr. Karl Bruhns as *privat-docent* of Dermatology.—*Copenhagen* Dr. J. Fibiger has been appointed to the chair of Pathological Anatomy in succession to the late Dr. Lange.—*Kiel:* Dr. Theodor Kirchhoff, *privat-docent* of Psychiatry, has been granted the title of Professor.—*Leipsic:* Dr. Richard Burian has been recognised as *privat-docent* of Physiology. A new dermatological clinic has been opened; it is replete with apparatus for Roentgen rays, for urethroscopy, cystoscopy, and the Finsen light treatment, and it is under the charge of Professor G. Riehl.

THE WAR IN SOUTH AFRICA.

FROM a medical point of view the most striking news from South Africa is the appearance of plague at the Cape. The first cases occurred at the Cape Town docks. The outbreak has so far been of a very limited extent, but the two important points connected with it are the appearance of some disease among the rats giving rise to their wholesale migration, and the spread of the infection as indicated by the occurrence of some cases of plague at other places than the docks. It was noticed that the rats at the south arm of the docks, where the military transports discharge, were making an exodus and migrating to the military camp at Greenpoint at which place they soon commenced to swarm. We have said the alleged occurrence of plague because Dr. Edington, the Government bacteriologist, maintains that the disease from which the city rats are suffering is not bubonic plague. On the other hand, medical opinion at the Cape declares that there can be little or no doubt as to the identity of the disease with bubonic plague in the patients under treatment, and stringent measures have been, or are being, taken on that assumption with the view of preventing its spread. The local Government and the civil and military authorities and colonial medical officer of health at Cape Town are acting in concert and a crusade is in progress against rats. Cape Town is below the standard of what it should be according to our present ideas of sanitation. The district where some of the cases have occurred is densely populated by Kaffirs and coloured people. The disease is mainly confined to the Kaffirs, but a few cases have occurred in widely separated parts of the city and one European has been attacked. The existence of plague has, we believe, been officially admitted. It cannot be denied that this is a serious and embarrassing occurrence, but it does not at all follow that, if it be veritably and indeed bubonic plague, it should assume epidemic proportions. Among the principal measures required to be taken are, the prompt isolation of the infected, the introduction of a system of plague inoculation, the wholesale destruction of rats, the evacuation of infected houses and sites, the provision of suitable camping grounds and camps, and, as far as practicable, the application of those sanitary and hygienic measures which have been found generally useful and efficacious in dealing with epidemic diseases of any kind. There is no more practical and effective measure that a change of site under such circumstances.

As regards the South African war news, it may be said that after a period of inaction the war is being prosecuted with energy and with results which, so far as they go, may be regarded as favourable to the British forces. It is evident that Lord Kitchener's movements have been, and still are, much hampered by the want of more mounted troops to follow up any defeats of the Boer forces by actively pursuing then when in retreat, capturing their convoys, and compelling them to surrender. As Lord Roberts has explained in his despatches, he was fully aware when he undertook and successfully carried out his rapid plan of campaign that he was compelled to set aside the ordinary rules of war and accept all the risks to which his strategy laid him open. Although the object was attained and the military precautions usually adopted were set aside in order to do this, it did not follow that the risks were overcome or removed. The tactics of the Boer leaders at the present time are to take any advantage, to surprise and attack isolated posts and lines of communication wherever possible, and thus to prolong the war in the hope of "something turning up." But time is nevertheless fighting against them and when large reinforcements of mounted troops have arrived Lord Kitchener will, it is to be hoped, be in a position to carry on his present system of warfare with redoubled vigour. That the Boers are now fighting with something very like desperation may be inferred from the large numbers of killed on both sides as compared with wounded which have characterised many of their late engagements.

In addition to the list of casualties attributable to the recent fighting in various directions we regret to notice that the lists of the sick and dead from enteric fever and other diseases continue to be lengthy ones.

THE LANCET RELIEF FUND.

TWELFTH ANNUAL REPORT OF THE ALMONERS.

THE LANCET Relief Fund, which has for its Almoners the President of the Royal College of Physicians of London (Sir WILLIAM SELBY CHURCH, Bart., M.D. Oxon), the President of the Royal College of Surgeons of England (Sir WILLIAM MAC CORMAC, Bart., K.C.V.O., F.R.C.S. Eng., F.R.C.S. Irel., M.Ch.), the President of the General Medical Council (Sir WILLIAM TURNER, K.C.B., M.B. Lond., F.R.C.S. Eng. and Edin., F.R.S.), Mr. THOMAS WAKLEY, F.R.C.S. Eng., and Mr. THOMAS WAKLEY, jun., L.R.C.P. Lond., with Sir HENRY PITMAN, M.D. Cantab., F.R.C.P. Lond., as Honorary Auditor, came into operation on the 1st of February, 1889.

In presenting the twelfth annual report the Almoners think it well again to direct attention to the object for which the Fund was established.

The Fund is sustained solely by the Proprietors of THE LANCET who provide every January the sum of at least £300 and is administered free of cost, with the object of affording immediate pecuniary assistance to registered medical practitioners or to the widows and orphans of members of the profession in cases of distress and emergency, by the grant of money by way of loans free of interest, or gifts, as the circumstances of the various cases may require.

When the Fund was inaugurated considerable misapprehension existed as to the precise objects for which it had been established; and as a result the majority of the earlier applications, being cases of *chronic* distress, and not coming, therefore, under the designation of *emergency*, could not be entertained. Attention was called to this fact in THE LANCET of Feb. 16th, 1889, in the following words:—

> We are requested by the Almoners to state that, from the character of a number of the applications received, both personally and by letter, for relief, it is evident that in many cases the object for which this Fund has been established is not quite clearly understood; and if relief had been afforded in the cases of those who suffer from chronic distress the Fund would have been completely exhausted within the first few days of its existence. They would therefore be greatly obliged if those readers of THE LANCET who may be asked to endorse applications would carefully peruse the Application Form and explain the precise object of the Fund to those applicants whose cases do not seem to come within the scope of the purpose for which the Fund has been established, which is to afford prompt aid to registered medical practitioners, or to the widows or orphans of members of the profession, who, in consequence of the supervention of some unexpected emergency, which is not likely to recur, have pressing need of immediate and temporary pecuniary relief.

And who, it may once more be pointed out, are likely to be permanently benefited thereby.

The balance in hand at the end of 1899 amounted to the sum of £358 1*s.* 6*d.* On Jan. 1st, 1900, the Proprietors of THE LANCET placed to the credit of the Fund the sum of £300. The sum of £305 has been granted in relief either by way of loan or of gift, leaving a balance of £352 17*s.* 4*d.* as per Statement of Accounts.

There have been considered altogether during the 12 months ending Dec. 31st, 1900, 42 applications for relief (the number the previous year having been 33). In 34 cases assistance was awarded either as a loan or as a gift, according to the request of the applicant, the amount of the grants ranging this year from £5 to £20.

The Almoners are glad to find from the letters received from recipients of the Fund that it continues to be of service to unfortunate members of the profession and that the particular object of assisting cases of emergency and immediate distress has been attained. (Signed)

WILLIAM MAC CORMAC (Chairman). WM. TURNER. W. S. CHURCH. THOMAS WAKLEY. THOMAS WAKLEY, Junr.

Statement of Accounts for the Year ending Dec. 31st, 1900.

DR.	£	*s.*	*d.*
To Balance at the London and Westminster Bank, Limited (Westminster Branch), Jan. 1st, 1900	358	1	6
,, Proprietors of THE LANCET, Jan. 1st, 1900 ...	300	0	0
	658	1	6
To Balance at Bank	£352	17	4

CR.	£	*s.*	*d.*	£	*s.*	*d.*
By Loans:—						
Case No. 462	20	0	0			
,, 473	10	0	0			
,, 475	10	0	0			
,, 477	20	0	0			
				60	0	0
By Gifts:—						
Case No. 454	5	0	0			
,, 455	5	0	0			
,, 457	5	0	0			
,, 458	5	0	0			
,, 459	10	0	0			
,, 461	10	0	0			
,, 463	5	0	0			
,, 465	5	0	0			
,, 466	15	0	0			
,, 467	10	0	0			
,, 468	10	0	0			
,, 469	10	0	0			
,, 470	10	0	0			
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,, 482	5	0	0			
,, 483	10	0	0			
,, 484	10	0	0			
,, 485	10	0	0			
,, 486	10	0	0			
,, 487	5	0	0			
,, 488	5	0	0			
,, 489	5	0	0			
,, 490	5	0	0			
				245	0	0
,, Cheque Book	...		...	0	4	2
,, Balance at Bank, Dec. 31st, 1900	...		...	352	17	4
				£658	1	6

I find by the Bankers' Book that the actual balance on Jan. 1st, 1900, to the credit of the Fund was £358 1*s.* 6*d.*, to which the sum of £300 was added by the Proprietors of THE LANCET on Jan. 1st, 1900.

The balance at the Bank on Dec. 31st, 1900, was the sum of £352 17*s.* 4*d.* I have also checked the receipts for disbursements and find the above account strictly accurate

January 25th, 1901.

HENRY A. PITMAN, Hon. Auditor

ANNUAL REPORT OF THE MEDICAL OFFICER OF HEALTH OF THE ADMINISTRATIVE COUNTY OF LONDON.

II.[1]

WE now come to that portion of Mr. Shirley Murphy's report which deals with the prevalence and fatality of the commoner forms of infectious disease. For the last two years London has been practically free from small-pox, only 29 cases having been notified in the year 1899 and 33 cases in the preceding year. The London death-rate from small-pox has been scarcely appreciable since the year 1895 and throughout the 10 years 1889–98 it has been below the rate of Paris, Brussels, St. Petersburg, Vienna, Rome, and New York. The fortunate immunity of London from serious invasion by small-pox is, however, to be attributed solely to the promptitude with which the earliest cases have been recognised and isolated. Had it been otherwise the cases freshly imported from time to time, few though they have been, would inevitably have caused a general prevalence of small-pox long before the present time, especially in a community like our own which is so largely composed of unvaccinated children. Having regard to the serious epidemic of small-pox now existing in Glasgow, between which city and the metropolis intercommunication is constant, prudent parents will give heed to Mr. Shirley Murphy's solemn warning, which is to the effect that ever since the appointment of the Royal Commission on vaccination the proportion of unvaccinated children in London has steadily increased year after year. The figures for years subsequent to 1897 are not as yet available, but in that year we learn that the proportion of children not finally accounted for as regards vaccination amounted to 29·1 per cent. of the total births. It may therefore safely be assumed that as the proportion of unvaccinated children has steadily increased during the last decade at least one-third of the children born in London are at the present time suffered to remain unprotected against small-pox.

Judged by the mortality alone London would almost seem to have been freer from scarlet fever in 1899 than in any previous year since the passing of the Notification Act; but on reference to the column showing the number of attacks recorded this appears to be due to the exceptionally low fatality (2·2 per cent.) among the recorded attacks, for the cases of scarlet fever actually notified in 1899 were relatively more numerous than they had been either in the year 1891 or in 1898. The scarlet fever death-rate of London last year was lower than that of any of the other large English towns except Manchester, Birmingham, Bristol, and West Ham, and also lower than that of any of the principal foreign cities except Paris, Brussels, Amsterdam, and Rome. Mr. Shirley Murphy refers yet again in the present report to the occurrence in certain London sanitary districts of "return cases" of scarlet fever —i.e., cases occurring in houses shortly after the return home of a previous case which had been discharged apparently cured from hospital. In Paddington there were nine such cases, in Plumstead 14, in Kensington four, in Fulham 10, and in Stoke Newington three. It appears that in most of these cases the child who had caused the mischief was found on return from hospital to be suffering either from nasal discharge or from enlarged glands. Mr. Shirley Murphy quotes the opinion of the medical officer of health of Stoke Newington to the effect that special provision should be made for the isolation of such cases as the above or at any rate that the medical officer of health should be warned of their return home so that they may be watched. From the present report we learn that "return cases" not infrequently occur in connexion with the convalescent stage of diphtheria also, they are by no means limited to scarlet fever.

Diphtheria was more prevalent in London during 1899 than in the preceding year; the reported cases also exceeded the annual average for 1891–98. The case fatality among the reported attacks was, however, lower last year than in any year since the passing of the Notification Act. Compared with 11 of the largest English towns the London death-rate from diphtheria was higher last year than that of any other except Leeds, Sheffield, and West Ham, whilst it was higher than that of any of the chief foreign cities except Stockholm, St. Petersburg, and New York. The use of antitoxic serum is being encouraged by the sanitary authorities of many of the London districts, some of them charging a fee for the serum, whilst others supply it without charge. Mr. Shirley Murphy states that this provision for the safety of the public is generally appreciated by medical practitioners, who consequently always know where to apply for the serum in case of emergency. In Lambeth the use of antitoxin appears to have been especially satisfactory, for out of 53 cases in that parish thus treated the results were successful in 52. The reduction in the case fatality of diphtheria in recent years is remarkable and highly satisfactory; it is shown graphically in a chart contained in the report. The relative incidence of diphtheria attack upon London children from three to 13 years of age continues to increase from year to year. This is shown in a table which we have not space to reproduce here. Mr. Shirley Murphy adds some useful words of caution with reference to the occurrence of diphtheria attacks in undue proportion among children at school ages. He states his opinion that, irrespective of the general prevalence of this disease, be it great or small, in any locality, a notable increase in the ratio of attacks at school ages should always be taken as the signal for special watchfulness, because such increase may be due to school attendance; and in this way is very likely to be the precursor of a serious outburst of the disease, although there may be no concurrent excess of attacks at other than school ages. Thus, for example, in a particular school cases of diphtheria may occur at intervals far apart from each other in point of time—so far apart, indeed, as to obscure the share the school is taking in spreading the disease. Nevertheless, the succession between the known attacks may be maintained by means of unrecognised cases, although there may exist no abnormal general prevalence of the disease to cause alarm. The disastrous school outbreak at Lewisham in 1896 is quoted as an illustration of the concurrence of a decrease of attacks among the general population with a relative increase among school children, the latter increase culminating in the serious outbreak referred to. We regret to learn that during the last two years the percentage of attacks among school children at Lewisham has again been increasing and that there has been concurrently a serious increase in the number of fresh cases of the disease outside schools in that district. It would therefore appear desirable to inquire, as Mr. Shirley Murphy does inquire very pertinently, whether infection at school was once more responsible for the large prevalence of diphtheria at Lewisham in 1899.

For several years past Mr. Shirley Murphy has commented in considerable detail on the behaviour of typhus fever in the older and poorer parts of the metropolis. Within the memory of many practitioners still living typhus fever was one of the most terrible scourges of certain well-known districts. Even so recently as the year 1869 this disease was responsible for a death-rate of 690 per 1,000,000 of the London population as a whole, and in the denser and more insanitary areas the mortality amounted to many times this figure. Throughout the last decade, however, typhus fever has been attended by but insignificant fatality in London, the deaths in the whole county numbering only two last year and three the year before. The parts of London which have in recent years been associated with the spread of typhus fever are Bermondsey, Rotherhithe, and the neighbouring district of St. George-the-Martyr. The frequent recurrence of typhus fever in this part of London is noteworthy and the history of the cases reported shows how readily the disease may be overlooked, especially in its milder forms. There is much probability that the disease has retained a foothold in these parts through the medium of unrecognised cases. It is well known that the severity of typhus fever varies greatly and the attacks especially amongst children, are often so slight as to amount to little more than mere poorliness. "There is, therefore" says Mr. Shirley Murphy, "no improbability that the disease has been maintained in these districts by persons suffering from so mild a form of typhus that it is impossible to recognise the malady, the cases coming to light being a few of the total number who are suffering from more severe attacks. If natural causes may reduce the severity of disease they

[1] No. I. was published in THE LANCET of Feb. 9th, 1901, p. 421.

may also increase it, and in that event there is no certainty that there will not eventually be much greater prevalence of typhus than has been experienced in late years."

Enteric fever showed greater prevalence in London last year than in any other year since the passing of the Notification Act, the reported cases being in the proportion of 1 in each 1000 of the population. In several instances Mr. Shirley Murphy quotes illustrations of the communication of enteric fever from one person to another. Thus, in the district of Kensington the illness of one person was followed by that of 11 other persons associated with the first sufferer or others infected by him; 10 houses in all were thus invaded. In Fulham a series of six cases was reported, and in St. Pancras a series of nine cases in a family of 11 persons. In yet another district account is given of three similar groups in which the number of persons thus infected from a common source was respectively six, six, and eight. The experience of enteric fever in 1899, as, indeed, in that of previous years, points to the spread of enteric fever infection from previous cases of this disease, the nature of the illness in the first case not having been recognised It further shows the risk of the retention of cases of enteric fever in the houses of poor persons when circumstances do not allow of efficient isolation The early recognition of enteric fever, the use of the Widal test in doubtful cases, the isolation of the sufferer, and the employment of nurses beyond middle life to attend upon the sick are, in Mr. Shirley Murphy's opinion, the precautions which are needed to limit the spread of enteric fever.

We are glad to note that the interesting diagram showing the relation of overcrowding to phthisis mortality—which we noticed for the first time in the report for 1898—has been repeated in the report before us. The diagram shows that in 1899, as in the previous year, the mortality from all causes, from phthisis, and from diseases other than phthisis, increases with overcrowding, and that the maximum increase from diseases other than phthisis occurs somewhat earlier in life than does the maximum increase from that disease itself. Mr. Shirley Murphy's remarks on the relation of the dwelling-house to the production of phthisis are eminently practical and he presses them home very effectively with the help of the diagram before mentioned. In concluding our notice of this excellent report we would especially commend this particular part of it to the study of those who are interested in the success of the outdoor treatment of consumption, feeling confident that it will be found both suggestive and profitable reading.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on Feb. 7th, Sir WILLIAM MAC CORMAC, Bart., K.C.V.O., the President, being in the chair.

The following Address of Condolence was passed and the College seal was affixed:—

THE HUMBLE ADDRESS OF THE PRESIDENT, VICE-PRESIDENTS, AND COUNCIL OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND TO

HIS MOST EXCELLENT MAJESTY EDWARD VII.,
King of Great Britain and Ireland.

MAY IT PLEASE YOUR MAJESTY,—We, the President, Vice-Presidents, and Council of the Royal College of Surgeons of England, venture to approach Your Majesty in order to express our profound grief at the death of Your Majesty's beloved mother, our late revered Sovereign, and we humbly solicit Your Majesty graciously to receive our earnest and respectful sympathy.

We desire to record our heartfelt sorrow at the loss of a Sovereign whose reign has brought unexampled prosperity to the empire and whose dignity of life and unselfish devotion to duty have won the lasting admiration and gratitude of her subjects.

Wise and liberal in her rule and ever solicitous for the welfare and happiness of the nation, Queen Victoria will live in the hearts of her people the symbol of all that is noble and good.

We also desire respectfully to express to Your Majesty our dutiful allegiance and unswerving devotion, and we fervently pray that Your Majesty may long reign in the affections of a loyal, happy, and united people.

In witness whereof, We, Your Majesty's loyal and dutiful subjects, have caused the Common Seal of the College to be hereunto affixed this 7th day of February, 1901.

The PRESIDENT reported that owing to the lamented death of Her Majesty Queen Victoria it had been determined that the dinner arranged in connexion with the Hunterian Festival on Feb. 14th should not take place, but that the Hunterian Oration should be delivered at 4 P.M. on that day in accordance with the terms of the Hunterian Trust.

On the recommendation of the Museum Committee the Council authorised the purchase of two Chinese skeletons and of some Chinese skulls.

The Council passed a vote of thanks to Mr. Alfred Sieveking, of the Uganda Railway Service, for a gift of ethnological specimens from East Africa

Mr. Thomas Bryant was re-appointed as representative of the College on the General Medical Council for a further period of three years.

In response to an invitation from the Chancellor, Council, and Senate of the University of Glasgow, the President, Sir William MacCormac, the Senior Vice-President, Mr. John Langton, and Mr. Mayo Robson were appointed delegates from the College on the occasion of the ninth jubilee celebrations of the University in June next.

The Secretary was authorised to remove from the list of Members published in the College Calendar the names of all Members admitted before the year 1843 whom he may be unable to trace as still living.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6908 births and 4473 deaths were registered during the week ending Feb. 9th. The annual rate of mortality in these towns, which had declined from 19·6 to 16·4 per 1000 in the four preceding weeks, rose again last week to 19·8. In London the death-rate was 18·7 per 1000, while it averaged 20·5 in the 32 large provincial towns. The lowest death-rates in these towns were 12·3 in Cardiff, 12·4 in Croydon, 14·4 in West Ham, and 15·1 in Bolton and in Bradford; the highest rates were 24·7 in Manchester, 27·5 in Salford, 27·9 in Liverpool, and 29·5 in Norwich. The 4473 deaths in these towns included 397 which were referred to the principal zymotic diseases, against 374, 347, and 323 in the three preceding weeks; of these, 129 resulted from whooping-cough, 101 from diphtheria, 57 from measles, 44 from "fever" (principally enteric), 40 from diarrhœal diseases, and 26 from scarlet fever. The lowest death-rates last week from these diseases occurred in Brighton, Swansea, Norwich, Burnley, and Huddersfield; and the highest rates in Nottingham, Birkenhead, Salford, and Blackburn. The greatest mortality from measles occurred in Liverpool; and from whooping-cough in Croydon, Plymouth, Bristol, Nottingham, Birkenhead, and Preston. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 101 deaths from diphtheria included 29 in London, 10 in Sheffield, eight in Leeds, eight in Liverpool, eight in Manchester, seven in Blackburn, and six in Leicester. No fatal case of small-pox was registered in any of the 33 large towns, and only one small-pox patient remained under treatment in the Metropolitan Asylums hospitals on Saturday, Feb. 9th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1963, against numbers declining from 2535 to 2037 on the six preceding Saturdays; 145 new cases were admitted during the week, against 187, 172, and 178 in the three preceding weeks. Influenza was certified as the primary cause of 12 deaths in London last week. The deaths referred to diseases of the respiratory organs in London, which had been 422, 394, and 323 in the three preceding weeks, rose again last week to 397, but were 75 below the corrected average. The causes of 75, or 1·7 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Croydon, Bristol, Bolton, Oldham, and in eight other smaller towns. The largest proportions of uncertified deaths were registered in Birmingham, Liverpool Blackburn, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 21·1 and 22·2 per 1000 in the two preceding weeks, further rose to 23·2 during the week ending Feb. 9th, and showed an excess of 3·4 per 1000

over the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 14·4 in Leith and 20·3 in Dundee to 25 5 in Glasgow and 27·4 in Paisley. The 726 deaths in these towns included 37 which were referred to whooping-cough, 18 to diarrhœa, 14 to measles, 11 to small-pox, 10 to "fever," seven to diphtheria, and six to scarlet fever. In all 103 deaths resulted from these principal zymotic diseases, against 106 and 126 in the two preceding weeks. These 103 deaths were equal to an annual rate of 3·3 per 1000, which was 1·5 per 1000 above the mean rate last week from the same diseases in the 33 large English towns. The deaths from whooping-cough, which had been 39 and 43 in the two preceding weeks, declined again to 37 last week, and included 27 in Glasgow, five in Edinburgh, two in Dundee, and two in Greenock The fatal cases of diarrhœa, which had been 15 and 27 in the two preceding weeks, declined again last week to 18, of which eight were registered in Glasgow, three in Dundee, two in Aberdeen, and two in Leith. The deaths from measles, which had been 23, 18, and 16 in the three preceding weeks, further declined to 14 last week, and included six in Edinburgh and six in Aberdeen. The deaths from small-pox, which had been three, 11, and 24 in the three preceding weeks, declined again to 11 last week, and included 10 in Glasgow and one in Paisley. The fatal cases of "fever," which had been 15 and six in the two preceding weeks, rose again last week to 10, of which nine were recorded in Glasgow. The deaths from diphtheria, which had been eight and seven in the two preceding weeks, were again seven last week, and included two in Glasgow, two in Edinburgh, and two in Dundee. The six fatal cases of scarlet fever showed an excess of three over the number in the preceding week and included four in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 145 and 123 in the two preceding weeks, rose again last week to 158, but were 84 below the number in the corresponding period of last year. The causes of 37, or more than 5 per cent., of the deaths in these eight towns last week were not certified

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HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 30·4, 28·2, and 27·4 per 1000 in the three preceding weeks, rose again to 34·0 during the week ending Feb. 9th During the past four weeks the death-rate in the city has averaged 30·0 per 1000, the rates during the same period being 17·8 in London and 21·2 in Edinburgh The 226 deaths belonging to Dublin registered during the week under notice were 44 in excess of the number in the preceding week, and included 16 which were referred to the principal zymotic diseases, against 20 and 18 in the two preceding weeks; of these, nine resulted from whooping-cough, five from 'fever," and two from diarrhœa These 16 deaths were equal to an annual rate of 2·4 per 1000, the zymotic death-rate during the same period being 1·5 in London and 2·5 in Edinburgh The fatal cases of whooping-cough, which had been eight and 12 in the two preceding weeks, declined again last week to nine. The deaths referred to different forms of "fever," which had been six and three in the two preceding weeks, rose again to five during the week under notice. The 226 deaths in Dublin last week included 37 of children under one year of age and 61 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons showed a marked excess over the numbers recorded in the preceding week. Eight inquest cases and six deaths from violence were registered, and 70, or nearly one-third, of the deaths occurred in public institutions. The causes of 15, or nearly 7 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING JANUARY, 1901.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in each of the 29 boroughs and cities in the county of London. With regard to the notified cases of infectious diseases it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 6·2 per 1000 of the population, estimated at 4,651,113 persons in the middle of the year. In the three preceding months the rates had been 10·7, 10·0, and 8·0 per 1000 respectively. The rates were considerably below the average in Kensington, Westminster, St. Marylebone, City of London, and Wandsworth; while they showed the largest excess in Hammersmith, Fulham, Bethnal Green, Poplar, and Deptford. Four cases of small-pox were notified last month, of which one occurred in Kensington, one in Hampstead, one in Stepney, and one in Poplar. Four small-pox patients were admitted into the Metropolitan Asylums hospitals during the month, and three remained under treatment on Saturday, Feb. 2nd. Scarlet fever was considerably less prevalent than it had been during the four preceding months; among the various metropolitan boroughs this disease showed the greatest proportional prevalence in Hammersmith, Fulham, Stoke Newington, Deptford, and Lewisham The Metropolitan Asylums hospitals contained 1979 scarlet fever patients at the end of January, against 2569, 2659, and 2460 at the end of the three preceding months; the weekly admissions averaged 164, against 314, 259, and 214 in the three preceding months. The prevalence of diphtheria also showed a marked decline as compared with that recorded in recent months; the greatest proportional prevalence of this disease occurred in Hammersmith, Fulham, Bethnal Green, Poplar, and Deptford. There were 1113 diphtheria patients under treatment in the Metropolitan Asylums hospitals at the end of last month, against 1458, 1524, and 1343 at the end of the three preceding months; the weekly admissions averaged 129, against 206, 185, and 157 in the three preceding months. The prevalence of enteric fever last month showed a continued decrease from that recorded in each of the two preceding months; among the various metropolitan boroughs this disease was proportionally most prevalent in Hammersmith, Chelsea, City of London, Bethnal Green, Stepney, and Bermondsey. The number of enteric fever patients in the Metropolitan Asylums hospitals, which had been 444, 436, and 403 at the end of the three preceding months, had further declined to 299 at the end of January; the weekly admissions averaged 32, against 61, 61, and 51 in the three preceding months. Erysipelas was proportionally most prevalent in Hackney, Holborn, Shoreditch, Bethnal Green, and Deptford boroughs. The 38 cases of puerperal fever included six in Islington, six in Camberwell, and three in Hampstead.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various metropolitan boroughs, the deaths occurring in the public institutions of London having been distributed among the various boroughs in which the patients had previously resided. During the five weeks ending Feb. 2nd, the deaths of 7796 persons belonging to London were registered, equal to an annual rate of 17·5 per 1000, against 15·3, 16·8, and 16·2 per 1000 in the three preceding months. The lowest death-rates last month in the various metropolitan boroughs were 12·4 in Hampstead, 13·1 in Stoke Newington, 13 4 in Wandsworth, 14·5 in Hackney, and 14·7 in Battersea; the highest rates were 21·7 in Finsbury, 22·3 in Bermondsey, 22·8 in Southwark, 23 2 in Bethnal Green, and 24 9 in City of London. During the five weeks of January 632 deaths were referred to the principal zymotic diseases; of these, 140 resulted from measles, 43 from scarlet fever, 127 from diphtheria, 180 from whooping-cough, one from typhus, 74 from enteric fever, and 67 from diarrhœa. The lowest death-rates last month from these diseases occurred in City of Westminster, St. Marylebone, Hampstead, Stoke Newington, Lambeth, Battersea, and Woolwich; and the highest rates in Hammersmith, Fulham, Bethnal Green, Southwark, Bermondsey, and Greenwich boroughs. The 140 deaths from measles showed a decline of 119 from the corrected average number; this disease was proportionally most fatal in Bethnal Green, Southwark, Bermondsey, Camberwell, and Greenwich. The 43 fatal cases of scarlet fever were less than one-half of the average number in the corresponding periods of the 10 preceding years; among the various metropolitan boroughs the greatest proportional mortality from this disease occurred in Fulham, St. Pancras, Bermondsey, Camberwell, and Lewisham. The 127 deaths from diphtheria were 99 below the corrected average; this disease showed the greatest proportional fatality in Hammersmith, Fulham, Stoke Newington, Bethnal Green, and Poplar. The 180 fatal cases of whooping-cough were 137 less than the average in the corresponding periods of the 10 preceding years; among the various metropolitan boroughs this disease was proportionally most fatal in Fulham, Shoreditch, Bethnal Green, Southwark, Bermondsey, and Greenwich. The 74 deaths from "fever" showed an excess of 14 over the corrected

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JANUARY, 1901.

(*Specially compiled for* THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1901.	NOTIFIED CASES OF INFECTIOUS DISEASE.										
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.
LONDON...	4,651,113	4	1012	910	8	70	2	38	421	—	2765	6·2
West Districts.												
Paddington	148,148	—	39	18	—	10	—	2	14	—	83	5·8
Kensington	177,205	1	32	17	—	17	—	—	12	—	79	4·6
Hammersmith	111,213	—	36	33	—	15	—	1	13	—	98	9·2
Fulham	141,920	—	41	56	—	10	—	1	19	—	127	9·3
Chelsea	73,843	—	13	10	—	8	—	1	2	—	34	4·8
City of Westminster	189,375	—	25	13	—	12	—	2	14	—	66	3·6
North Districts.												
St. Marylebone	140,460	—	29	9	—	8	—	—	16	—	62	4·6
Hampstead	82,605	1	14	15	—	5	—	3	3	—	41	5·2
St. Pancras	243,098	—	53	60	—	23	—	—	19	—	155	6·6
Islington	353,528	—	76	46	—	24	—	6	28	—	180	5·3
Stoke Newington	55,758	—	22	14	—	—	—	—	3	—	39	7·3
Hackney	228,417	—	47	48	—	20	—	2	32	—	149	6·8
Central Districts.												
Holborn	59,700	—	14	11	—	6	—	—	10	—	41	7·2
Finsbury	106,690	—	16	22	—	8	—	—	10	—	56	5·5
City of London	25,289	—	2	3	—	2	—	—	—	—	7	3·0
East Districts.												
Shoreditch	120,614	—	14	22	—	10	1	—	18	—	65	5·6
Bethnal Green	127,509	—	22	45	—	17	—	1	20	—	105	8·6
Stepney	305,053	1	60	70	—	39	—	2	28	—	200	6·8
Poplar	170,465	1	33	68	—	14	—	—	12	—	128	7·8
South Districts.												
Southwark	208,669	—	45	44	—	18	—	—	28	—	135	6·7
Bermondsey	136,824	—	32	24	—	15	—	1	12	—	84	6·4
Lambeth	318,530	—	78	51	—	17	—	2	18	—	166	5·4
Battersea	180,017	—	40	18	—	8	—	1	16	—	83	4·8
Wandsworth	242,224	—	38	32	—	15	—	2	22	—	109	4·7
Camberwell	269,102	—	54	59	—	24		6	16	—	159	6·2
Dept'ord	113,562	—	63	35	8	8		1	16	—	132	12·1
Greenwich	91,228	—	22	16	—	8	—	2	8	—	56	6·4
Lewisham	112,856	—	34	27	—	4	—	2	5	—	72	6·7
Woolwich...	114,106	—	18	24	—	4	—	—	7	—	53	4·8
Port of London	—	—	—	—	—	1	—	—	—	—	1	—

CITIES AND BOROUGHS.	DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.											Deaths from all causes.	Death-rate per 1000 living.	Deaths of Infants under one year to 1000 births.
	Small-pox.	Measles.	Scarlet fever	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON...	—	140	43	127	180	1	74	—	67	632	1·4	7796	17·5	121
West Districts.														
Paddington	—	1	—	5	7	—	2	—	2	17	1·2	233	16·4	107
Kensington	—	-	1	5	4	—	3	—	2	15	0·9	268	15·7	172
Hammersmith	—	5	2	7	7	—	6	—	-	27	2·5	186	17·4	132
Fulham	—	1	5	7	13	-	1	—	4	31	2·3	232	17·0	143
Chelsea	—	—	-	3	7	—	2	—	1	13	1·8	145	20·5	85
City of Westminster	—	-	—	4	3	-	2	-	3	12	0·7	307	16·9	135
North Districts.														
St. Marylebone		—	1	1	5		2	-	1	10	0·7	224	16·6	110
Hampstead	—	—	-	1	2	—	-	-	2	5	0·6	98	12·4	121
St. Pancras	—	8	5	6	11	-	6	-	—	36	1·5	462	19·6	133
Islington	—	4	1	10	15	-	3	—	1	34	1·0	545	16·1	106
Stoke Newington	—	—	1	2	-	—	-	—	—	3	0·6	70	13·1	83
Hackney	—	7	—	8	4	-	3	—	3	25	1·1	318	14·5	93
Central Districts.														
Holborn	—	—	—	1	-	—	2	—	2	5	0·9	107	18·7	117
Finsbury	—	—	1	2	4	—	4	—	2	13	1·3	222	21·7	126
City of London	—	-	1	—	—	—	1	—	1	3	1·3	58	24·9	273
East Districts.														
Shoreditch	—	7	-	3	8	-	2	—	3	23	2·0	236	20·4	152
Bethnal Green	—	10	2	9	9	—	3	—	4	37	3·0	284	23·2	147
Stepney	—	7	3	7	7	-	7	—	6	37	1·3	593	20·3	126
Poplar	—	2	—	12	5	—	3	—	4	26	1·6	336	20·6	120
South Districts.														
Southwark	—	29	1	5	20	-	3	—	4	62	3·1	457	22·8	131
Bermondsey	—	12	5	4	8	—	1	—	—	30	2·3	293	22·3	141
Lambeth	—	4	4	5	5	—	3	—	1	22	0.7	484	15·8	102
Battersea	—	2	—	3	4	—	2	—	1	12	0·7	255	14·7	130
Wandsworth	—	—	—	2	11	—	3	—	4	20	0·9	310	13·4	84
Camberwell	—	20	5	6	13	-	5	—	6	55	2·1	400	15·5	126
Dept'ord	—	6	1	2	2	1	2	—	4	18	1·7	172	15·8	119
Greenwich	—	11	1	1	5	—	1	—	1	20	2·3	152	17·4	100
Lewisham	—	3	3	4	—	—	2	—	3	15	1·4	187	17·3	124
Woolwich...	—	1	—	2	1	-	—	—	2	6	0·6	162	14·8	115
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 26 cases of membranous croup.

† Including deaths from membranous croup.

average; the highest proportional mortality from "fever" occurred in Hammersmith, Chelsea, St. Pancras, Holborn, Finsbury, and City of London boroughs. The 67 fatal cases of diarrhœa were equal to the average number in the corresponding periods of the 10 preceding years; among the various metropolitan boroughs this disease was proportionally most fatal in Fulham, Holborn, Bethnal Green, Deptford, and Lewisham. In conclusion, it may be stated that the aggregate mortality from these principal zymotic diseases in London during January was more than 35 per cent. below the average.

Infant mortality in London last month, measured by the proportion of deaths of children under one year of age to registered births, was equal to 121 per 1000. The lowest rates of infant mortality were recorded in Chelsea, Stoke Newington, Hackney, Wandsworth, and Greenwich; and the highest rates in Kensington, Fulham, City of London, Shoreditch, and Bethnal Green.

THE SERVICES.

THE VICTORIA CROSS.

THE *London Gazette* of Feb. 12th announces that Lieutenant W. H. S. Nickerson, R.A.M.C., attached to Mounted Infantry, has been awarded the decoration of the Victoria Cross for the following act of courage:—

At Wakkerstroom, on the evening of April 20th, 1900, during the advance of the infantry to support the mounted troops, Lieutenant Nickerson went, in the most gallant manner, under a heavy rifle and shell fire, to attend a wounded man, dressed his wounds, and remained with him till he had him conveyed to a place of safety.

MENTIONED IN DESPATCHES.

In the South African despatches which have now been presented to both Houses of Parliament the following comments are made and names mentioned for gallantry or conspicuous services:—

From Lord Roberts to the Secretary of State for War, dated March 31st, 1900:—

Surgeon-General W. D. Wilson, M.B., has had responsible and important duties to perform. The arrangements necessary to provide for the wants of the many sick and wounded in South Africa have required unremitting care and forethought, and the successful way in which they have been carried out reflects the greatest credit on him.

Colonel W. F. Stevenson, M.B., R.A.M.C., has been principal medical officer with the force, and I desire to draw attention not only to the efficient manner in which he has supervised the working of the Corps but also to the assistance I have received from him at all times. I cannot speak too highly of the care and devotion shown by the medical officers to the sick and wounded, or of the gallant way in which many of them have exposed themselves when performing their duties on the field of battle.

Mr. Watson Cheyne, M.B., F.R.S., and Mr. Kendal Franks, M.B., F.R.C.S.I., consulting surgeons, who have accompanied the army, have rendered invaluable service by their advice and assistance to the medical officers. They have been unwearying in their work among the wounded and sick, and, humanly speaking, many a valuable life has been saved by their skill.

Major J. H. Fiaschi, New South Wales Medical Staff Corps, is deserving of special mention on account of the assistance which he rendered to the sick and wounded, as well as upon the efficient condition in which he has kept the ambulance under his command, the services of which, ever since its arrival, have been most valuable.

Lieutenant-Colonel W. R. Donovan, R.A.M.C., principal medical officer of the Cavalry Divisional Staff and Troops.

Cape Medical Bearer Company.—Captain J. J. Brownlee and Serjeant A. Bettington.

Bearer Company, Royal Army Medical Corps.—Major R. H. S. Sawyer and Captain P. J. Probyn.

Major-General Baden Powell's despatches to Lord Roberts, dated May 18th, 1900, referring to the siege of Mafeking:—

Major Anderson, Royal Army Medical Corps, throughout the siege showed untiring zeal, coupled with coolness and gallantry in attending the wounded under fire in action, in addition to his eminent professional ability. Latterly, as principal medical officer, his unfailing tact and administrative capabilities rendered his services of greatest value. The strain of his devotion to his duty told heavily on his health.

Medical Staff.—Dr. W. Hayes, Surgeon Major Holmden, British South Africa Police, and Dr. T. Hayes. All worked with conspicuous zeal and skill under a never-ending strain of work; all of them very frequently under fire in carrying out their duties, even in their own hospital.

From Sir Charles Warren to Lord Roberts, dated June 29th, 1900, describing the action in the vicinity of Fabers Put on May 30th:—

The main farmhouse was rapidly cleared out and turned into a hospital under the directions of the senior medical officer. All the medical arrangements were most satisfactory, the following officers having done very excellent work, not only in the hospital, but also in the field dressing the wounds under heavy fire—viz.: Major McLaughlin senior medical officer; Major Cox, officer commanding Cape Field Hospital; Major Worthington, attached Canadian Artillery; and Captain C. Smith, attached 8th Battalion Imperial Yeomanry.

From Sir George White to the Secretary of State for War, dated Ladysmith, Dec. 2nd, 1899:—

I also desire to bring to your notice the following ..... have rendered excellent services: ..... Lieutenant-Colonel R. W. Mapleton, R.A.M.C.

Royal Army Medical Corps.—Lieutenant-Colonel P. H. Johnston, Major H. Martin, Major M. W. Kerin, and Captain G. S. Walker.

From Sir George White, dated Cape Town, March 23rd, 1900:—

Colonel R. Exham, Royal Army Medical Corps, did all that a principal medical officer could do in organising the medical services under circumstances of exceptional difficulty, and with *personnel* and *materiel* both inadequate for a siege of such long duration, accompanied by such a great amount of sickness.

Lieutenant-Colonel R. W. Mapleton, Royal Army Medical Corps, in charge of Intombi Hospital Camp, was placed in a most exceptional position, in charge of a neutral camp where the maintenance of discipline in the ordinary way was impossible, but in the face of all difficulties he did everything possible to maintain the sanitation of the camp, and to ensure the well-being of the sick and wounded.

Major F. H. Treherne, Royal Army Medical Corps; Major J. F. Bateson, Royal Army Medical Corps.

Royal Army Medical Corps.—Lieutenant-Colonel S. H. Carter, Major H. Martin, Major R. L. Love, Major M. W. Kerin, Major S. Westcott, Major D. Bruce, and Captain G. S. Walker (died of enteric fever, Feb 23rd, 1901).

Natal Volunteer Medical Staff.—Captain H. T. Platt.

Indian Subordinate Medical Department. — 1st Class Assistant-Surgeon J. Moore, 1st Class Assistant Surgeon J. B. Farrell, 1st Class Assistant-Surgeon A. D. McIntyre, 2nd Class Assistant-Surgeon E. St. Romaine, and 2nd Class Assistant Surgeon V. V. Chiodetti.

From Sir Redvers Buller to the Secretary of State for War, dated March 30th, 1900:—

Medical officers attached to regiments and corps.—Major S. Butterworth, Major H. B Hinde, Major A. S. Rose (wounded), Captain M. L. Hughes (killed), Captain R. H. E Holt (killed), Captain N. Tyacke, Captain J. H. Campbell (wounded), Captain C. Dalton (dangerously wounded), and Lieutenant H. B. Onraët (killed).

Medical officers with bearer companies.—5th Brigade, Major S. Townsend; 10th Brigade, Captain C. Martin; 4th Brigade, Major E. O. Milward; 2nd Brigade, Major J. E. T. Reckett; 6th Brigade, Major T. B. Winter; 11th Brigade, Major Haywood; 5th Brigade, Captain E. M. Morphew; and 6th Brigade, Captain J. D. Alexander.

Medical officers with field hospitals.—2nd Field Hospital, Major J. T. Culling and Captain H. J. Parry; 4th Field Hospital, Major G. T. Goggin, Major F. S. Henston, and Lieutenant and Quartermaster R. Adams; 5th Field Hospital, Major G. H. Younge, Captain E. M. Pilcher, and Lieutenant and Quartermaster J. Hirst; 6th Field Hospital, Major J. B. W. Buchanan and Captain N. Faichnie; 10th Field Hospital, Major E. R. Cree; 11th Field Hospital, Major J. D. Moir, Captain F. G. Faichnie, and Major A. Fitzgerald; 2nd Division Field Hospital, Major A. Baird; and 5th Division Field Hospital, Major J. G. Black.

Volunteer Ambulance Corps.—Major H. Wright, Gordon Highlanders; Captain Lord R. Manners, King's Royal Rifle Corps; Lieutenant E. M. Baker, Manchester Regiment; Lieutenant C. W. McD. Findlay, Gordon Highlanders; Second Lieutenant J. R. E. Stansfield, Gordon Highlanders; and Second Lieutenant P. D. Stewart, Gordon Highlanders.

Indian Ambulance Corps.—Mr. Clarence, superintendent; Mr. Ghandi, assistant superintendent.

The medical arrangements have been everything that could be desired. I am sure that I only express the feelings of the whole force when I say everyone is grateful to Sir William Mac Cormac, Mr. Treves, and Sir William Stokes, whose skill has saved several lives and mitigated much suffering, and whose knowledge and experience have been a blessing to the sick and wounded.

Colonel T. J. Gallwey, C.B., principal medical officer, has devoted himself to his work with marked success, and it is largely due to his great administrative powers and forethought that everything has worked so smoothly.

Colonel J. A Clery, who has been in charge of the general hospital at Mooi, has displayed great powers of organisation and readiness to overcome difficulties. His hospital is a source of admiration to all who have visited it.

Lieutenant-Colonel W. B. Allin has been principal medical officer of the force in the field, and has had to make all the arrangements for the evacuation of hospitals and the removal of the wounded, which have, under great difficulties, been performed with great regularity, and yet with the greatest consideration for the wounded.

Lieutenant-Colonel P. H. Johnston has been most successful in his management of the general hospital at Pietermaritzburg.

Colonel Gallwey mentions in the highest terms the assistance he has received from his secretary, Major W. Babtie. I have already recommended this officer for the Victoria Cross in recognition of his gallantry at Colenso on Dec. 15th.

Lieutenant E. T. Inkson's name has been specially mentioned to me for having habitually distinguished himself in action and for his care of the wounded under fire.

Where all have worked so well it is difficult to discriminate, but the names of the following officers have been specially brought to my notice:—

Line of communications hospitals.—No. 4 Stationary Hospital, Major B. Kirkpatrick and Major R. Mallins; No. 1 Stationary Hospital, Major F. A. B. Daly; and Estcourt Hospital, Major W. S. Dowman.

General hospitals.—No. 4 General Hospital, Major T. R. Lucas and Major S. F. Treyer; General Hospital, Pietermaritzburg, Major A. Dodd and Major T. Browning.

Hospital trains.—Major Brazier-Creagh and Captain Leumann, Indian Medical Service.

Base Depôt Medical Stores.—Major R. J. MacCormack.

Hospital ships.—Lieutenant-Colonel F. Hodder (retired pay), Major T. P. Woodhouse, Civil Surgeon Brodie, and Civil Surgeon Hamilton.

The Volunteer Ambulance Corps, under Major H. Wright, Gordon Highlanders, have shown great devotion and gallantry, and the Indian Ambulance Corps, under Superintendent Clarence, have been most careful of the wounded—the conditions of their enlistment did not allow them to go under fire.

From Sir Charles Warren, dated, Hutlings Farm, Feb. 1st, 1900:

With regard to the medical staff, they are deserving of all praise, and I do not like to pick out of the principal medical officer's report any particular case when the reports show that all behaved so well.

From Sir Redvers Buller to the Secretary of State for War, dated Laings Nek, June 19th, 1900:—

Royal Army Medical Corps.—Major J. D. T. Recktit and Major E. R. Cree.

I have to add to these certain officers of my staff who assisted General Hildyard in every manner in their power:—

Lieutenant-Colonel W. B. Allin, Royal Army Medical Corps, principal medical officer field force, who was in charge of all the medical arrangements, which were carried out to my entire satisfaction.

Major J. D. Moir, Royal Army Medical Corps, in charge of 11th Brigade Field Hospital, did excellent work after the action at Allemann's Nek.

Captain C. B. Martin, Royal Army Medical Corps, Commanding 10th Bearer Company.

Colonel H. S. G. Miles, M.V.O., chief of the staff.

Lieutenant-Colonel O. Todd, Royal Army Medical Corps, senior medical officer, 5th Division of General Hildyard's staff.

From Sir Redvers Buller to Lord Roberts, Nov. 9th, 1900:—

Medical Department.

Colonel T. J. Gallwey, M.D., C.B., has been principal medical officer of the Natal Field Force throughout. I believe that he has succeeded in maintaining on the lines of communication and at the front a higher standard of comfort in general, stationary, and field hospitals, and a better service in bearer companies than has ever before been attained with a force in the field. His unbounded energy and his unrivalled powers of organisation have aided him in this work, but beyond this he has shown a devotion to his work, a grasp of the situation, and a capacity of forethought that justifies me in saying that I consider his services eminently deserving of the highest consideration that can be given to them.

Colonel J. A. Clery, M.B., principal medical officer of the lines of communication is an officer of sound judgment, common sense, and high administrative power. In his hands the hospital at Mooi river became remarkable as a model of what a hospital should be and since that he has done most valuable service in supervising the hospitals and medical work along the lines of communication in Natal. I trust his services may be rewarded.

Lieutenant Colonel P. H. Johnston, M.D., did admirable work at a time of great pressure at the commencement of the campaign, showing much foresight and good powers of organisation.

The following medical officers deserve mention for the excellent duties they performed in connexion with general and stationary hospitals; Lieutenant-Colonel J. G. MacNeece, No. 7 General Hospital; Lieutenant-Colonel H. Martin, M.B., No. 14 General Hospital; Major T. R. Lucas, M.B., secretary and registrar, No. 4 General Hospital; Major F. A. B. Daly, M.B., No. 1 Stationary Hospital; Major H. H. Johnston, M.D., Mooi River General Hospital; Major G. W. Brazier-Creagh, excellent service with ambulance train; Major S. Westcott; Major R. J. McCormack, M.D., Base Depôt, Medical Stores; Lieutenant and Quarter-Master G. H. Painton, No. 4 General Hospital; and Lieutenant and Quarter-Master F. W. Hall, Howick General Hospital.

With the lines of communication such a great length the number of warrant and non-commissioned officers of the Royal Army Medical Corps who have in different places performed work that was locally considered worthy of special mention is naturally very large, and the same remark applies to the Militia and Volunteer Medical Staff Corps and St. John's Ambulance Brigade, to the army nursing sisters, to the *personnel* of the Indian Medical Service (who were attached), to the men of the Imperial Irregular Corps and the Natal Volunteers, to the large number of civil surgeons engaged in England and locally, and to the colonial nurses engaged locally, and from colonies over sea. I am quite unable to make a selection of the names that have been forwarded to me, and have forwarded the list to the Director-General, Army Medical Service, begging him to obtain, later, your permission to publish such names as he may think desirable, but I wish to record here my thanks to all the members of those organisations.

In dealing with the medical service of the lines of communication, I should fail in my duty if I did not express the gratitude of the whole force to the following: H.R.H. Princess Christian of Schleswig-Holstein for the gift of a hospital train, which has been the greatest blessing to our sick and wounded; the Red Cross Society, under Sir J. Furley; the Durban Women's Patriotic League; the Army Hospital Aid, Pietermaritzburg; Mr. A. Mosely for his munificent donation of the Princess Christian Hospital, Pinetown; Mr. F. Stevens, who gave the use of his house and grounds for the Princess Christian Hospital; Mr. Coope, who gave his yacht *Sunrise* for the use of sick and wounded officers; and Sir Samuel Scott who similarly took sick and wounded officers on board the *Golden Eagle*. These cases stand out, but there were many other instances too numerous to mention in which private individuals generously contributed to alleviate the sufferings of the sick and wounded, and in the name of the Natal Field Force I express our most grateful thanks to all of them.

Lieutenant-Colonel S. H. Carter, M.B., Royal Army Medical Corps, principal medical officer, 4th Infantry Division, has discharged his duties to my entire satisfaction.

Lieutenant-Colonel R. L. Love, M.D., Royal Army Medical Corps, and Major O. R. A. Julian, Royal Army Medical Corps, deserve mention for the manner they respectively looked after the 8th Infantry Brigade Field Hospital and Brigade Bearer Company.

ROYAL NAVY MEDICAL SERVICE.

The following appointments are notified:—Staff Surgeons: R. Miller to the *Eagle*, temporary; G. Wilson to the *Arrogant*; H. F. Iliewicz to the *Cambrian*; H. W. A. Burke to the *Pembroke*; J. L. Barrington to the *Mars*; and R. H. J. Browne to the *Alacrity*, on promotion. Surgeons: C. R. Nicholson to the *Cambrian*; W. P. Dyer to the *Nile*; E. A. Shaw to the *Medea*; A. F. Fraser to the *Resolution*; H. B. Hall to Yarmouth Hospital; E. Grazebrook to Hong-Kong Hospital; and H. H. Gill to the *Impregnable*.

VOLUNTEER CORPS.

The undermentioned Supernumerary Officers are absorbed into the Establishment of their respective Volunteer Corps on the disbandment of the City of London Imperial Volunteers, with effect from Dec. 1st, 1900, viz.:—*Artillery:* 2nd Middlesex: Surgeon-Captain A. Thorne. *Rifle:* 16th Middlesex (London Irish): Surgeon-Captain E. W. St. V. Ryan. 20th Middlesex (Artists'): Surgeon-Captain R. R. Sleman. *Royal Engineers:* Submarine Miners: The Forth Division: Neish Park Watt to be Surgeon Lieutenant. *Rifle:* 4th Volunteer Battalion the South Wales Borderers: Surgeon-Lieutenant H. C. Groves resigns his commission. 1st (Renfrewshire) Volunteer Battalion, Princess Louise's (Argyll and Sutherland Highlanders): Surgeon-Captain T. Philip to be Surgeon-Major.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Major S. P. Smith, having resigned his Volunteer appointment, ceases to belong to the Army Medical Reserve of Officers. Surgeon-Major D. E. Flinn to be Surgeon-Lieutenant-Colonel.

AN EXPERIENCE OF ANTI-TYPHOID INOCULATION.

The January number of the *Medical Chronicle* contains an article, 28 pages in length, entitled, "Six Months with a Military Hospital in South Africa," written by Mr. J. W. Smith of Manchester, lately in charge of the surgical division, No. 9 General Hospital, South African Field Force. In the beginning of February, 1900, the Manchester detachment of the Medical Staff Corps was enrolled in the Royal Army Medical Corps and transported to Aldershot, and Mr. Smith, having been gazetted to a temporary commission in the Royal Army Medical Corps, was detailed to the staff of No. 9 General Hospital and sailed for South Africa early in March. The staff of No. 9 General Hospital consisted of 20 medical officers, of whom 13 were civilian surgeons and seven belonged to the Royal Army Medical Corps, including one officer from the London Volunteer Medical Staff Corps and Mr. Smith himself. The following is his description of what must have been the principal medical event of the voyage:—

On the voyage out we all underwent the process of anti-typhoid inoculation. This is by no means a pleasant experience. Thirty of us were done one afternoon, the dose, which consists of a sterile culture of the typhoid bacillus, being injected under the skin of the flank. Within two hours we were all prostrate. The effects came on suddenly, so much so that several men fainted, whilst some vomited and the majority had a well-marked rigor. The effects are pretty severe for two days and then pass rapidly away. On the second day there is a plaque of effusion as large as the hand round the point of puncture, the skin very red with much subcutaneous effusion and œdema, and red lines of lymphatics running upwards towards the axilla and downwards to the inguinal glands, which are swollen and tender. At this stage walking is by no means a pleasure, and the erect posture quite out of the question. Some had slighter local disturbance, and in them the constitutional symptoms were usually more severe. Personally, I had a severe rigor lasting for over an hour and a high temperature all night. Next afternoon another slight rigor, the temperature rising to over 101°, and on the third afternoon only a slight rise of temperature. No one demanded a second inoculation, which is strongly recommended to secure immunity lasting for some time. It is impossible to speak of the success of this anti-typhoid inoculation until the statistics of the war have been published. Professor Wright has already published them with respect to the Ladysmith garrison. In Ladysmith there were in round numbers 10,000 not inoculated, and 1700 inoculated. Of the non-inoculated one in seven took enteric, of the inoculated one in 48; the proportion of deaths amongst those attacked was very nearly the same in the two groups. The general impression amongst the medical officers in our hospital was that a single inoculation probably did not confer an immunity lasting very long—the length of time differing in individuals; and also that there was a tendency in the cases of enteric in inoculated patients to abort at the end of 10 or 14 days. I should say, however, that a very considerable number of our detachment who had been inoculated suffered from enteric, of whom four at least died. Of the medical staff the only member of the junior staff who had not been inoculated died of enteric.

SOUTH AFRICAN NOTES.

Civil Surgeon Kellage was slightly wounded in the railway action near Vlakfontein on Feb. 6th.

A telegram from Krugersdorp, dated Feb. 2nd, states that at an outpost engagement at Modderfontein on Jan. 31st Dr. Walker, who was among the killed, had received three

bullet wounds, but was finally despatched by a Boer, who battered in his skull with a stone.

The following have been discharged from hospital to duty:—Captain F. Smith, R.A.M.C., Civil Surgeons H. C. Adams, W. J. Moir, Brincker, H. Brown, and P. Stewart (Jan. 27th). Major W. L. Gray, R.A.M.C., Major G. E. Hale, R.A.M.C., and Major R. G. Hanley, R.A.M.C. (Feb. 3rd).

Civil Surgeon John Ironside Bruce is reported dangerously ill at Newcastle from enteric fever on Feb. 7th.

DEATHS IN THE SERVICES.

Surgeon General Stephen Chapman Townsend, C.B., I.M.S., at Exeter on Feb. 9th, aged 75 years. The deceased entered the Indian Medical Service in 1852, and was engaged in the Burmah campaign of 1852–3 (medal). He was appointed principal medical officer of the Kuran field force in 1878 during the Afghan war, and was chief of the medical staff under General Roberts in the Cabul expedition of 1879. He was severely wounded in the advance through the Shutagardar Pass whilst talking to General Roberts. From 1868 to 1878 the deceased was civil sanitary commissioner in the Chitral Provinces, and was appointed surgeon-general of the Punjab in 1880. On his retirement he received the C.B.

REVACCINATION IN THE ROYAL NAVY.

News was received at Plymouth on Feb. 5th that H.M.S. *Blenheim* had arrived at Port Said from Gibraltar *en route* for China. On the voyage the whole of the ship's company and the majority of the officers had been revaccinated. This is in accordance with an Admiralty order for ships proceeding to the China station.

Inspector-General of Hospitals and Fleets Henry Charles Woods has been promoted to a Commandership of his order.

Correspondence.

"Audi alteram partem."

"THE SURGERY OF PREGNANCY AND LABOUR COMPLICATED WITH TUMOURS."

To the Editors of THE LANCET.

SIRS,—In his lecture published in THE LANCET of Feb. 9th, p. 382, Mr. J. Bland-Sutton says: "Some accoucheurs recommend in cases where a cyst obstructs the transit of the child that it should be emptied through a vaginal puncture (Herman)." I take it that anyone reading this would think that I advised tapping as a routine proceeding rather than the better treatment advocated by Mr. Bland-Sutton. This is not an opinion that I hold or have expressed. I therefore asked Mr. Bland-Sutton to correct this misrepresentation. I have received from him the following reply:—

48, Queen Anne-street, Cavendish-square, W.,
Feb. 11th, 1901.

DEAR HERMAN,—Being so often misrepresented myself, I always endeavour to present other men's views carefully and justly. I gathered your views on this matter from the Trans. Obstet. Society, vol. xl., p. 8. I have re-read them and find that you do recommend the practice as stated in my lecture and I fail to find any misrepresentation. I added your name because as a known teacher of obstetrics at a London hospital it gave sanction to the method when adopted by a practitioner not skilled in operative surgery. You will, if you read carefully, find in the lecture that I particularly criticise palliative measures instead of placing the patient in skilled surroundings.

Yours sincerely,
J. BLAND-SUTTON.

PS.—If you make any public reference to this matter also kindly include this letter.—J. B.-S.

I find in the remarks to which Mr. Bland-Sutton refers no recommendation of tapping, unless it be inferred from a general expression of agreement with the paper under discussion. (In this paper tapping is discussed so fully and impartially that I think it would be unjust to the author to say that he recommends tapping.) On the contrary, I pointed out the dangers of tapping, I advised that in circumstances which did not permit ovariotomy the cyst should be incised and stitched to the vagina, and I said that this should not be done when ovariotomy could be performed.

I would ask those of your readers whom this small question may interest to read the remarks referred to by Mr. Bland-Sutton, and judge how far his representation of them is a fair one.

I am, Sirs, yours faithfully,
Feb. 14th, 1901. G. E. HERMAN.

"DIPHTHERITIC PARALYSIS."

To the Editors of THE LANCET.

SIRS,—The interesting case reported by Dr. Rice Oxley in THE LANCET of Feb. 2nd, p. 321, is a good instance of how an attack of diphtheria attended by very mild symptoms may be followed by paralysis. Such cases are not particularly rare and have given rise to the notion that the frequency of paralysis bears no relation to the severity of the initial attack of diphtheria. Thus Gowers states that paralysis "is equally likely to follow attacks that are severe as those that are trifling." This appears to have been the general opinion, especially before the antitoxin treatment was discovered, although authorities were not unanimous on the point. I cannot help thinking that to a large extent this belief was due to the fact that the severity of the attack of diphtheria was often estimated from the history given by the patient, the symptoms having been so slight that no medical man had been consulted. In other words, the feelings of the patient and not the extent of the anatomical lesion—the symptoms and not the signs—were taken as the criterion of severity. It is a commonplace observation that membrane extensive enough to cover a large part of the tonsils may exist with only the very slightest malaise. Indeed, in some cases the patient may be unaware that the throat is the seat of the mischief. He may consider himself to be only slightly out of sorts, though in reality his attack is of quite average severity. Such cases are frequently met with among the staff of a fever hospital, so that the only safe rule is never to omit an examination of the throat, whatever may be the symptoms for which the patient seeks advice. In the following table, taken from a paper in the Metropolitan Asylums Board's report for 1898, I have classified 829 consecutive cases of diphtheria uncomplicated by any other infectious disease. The classification depends entirely on the amount of the local lesions, no account being taken of merely subjective symptoms.

Nature of case.	Total cases.	Cases of paralysis.	Percentage of paralysis.	Cases of severe paralysis.	Deaths from paralysis.
Severe ...	223	64	28·6	19	5
Moderate ...	566	75	13·2	7	1
Mild	40	—	—	—	—

The first group comprises cases with extensive faucial membrane with swelling of the glands and rhinorrhœa. In the group of mild cases the faucial lesion was slight, the diagnosis depending chiefly on the history of exposure to infection, confirmed in every case by bacteriological methods. The intermediate group contained cases with a moderate amount of membrane, and many of them, if classified according to the symptoms complained of, would have been considered very mild. Of the "severe" group, 128 patients died before paralysis had had time to develop. Out of the 95 survivors 64, or 67·4 per cent., became paralysed.

From the above table the following conclusions may be drawn: (1) severe attacks of diphtheria are especially liable to be followed by paralysis, often of a severe character; (2) in less severe attacks paralysis is less frequent; and (3) in mild attacks paralysis is improbable. Of course, I do not mean to deny that even the mildest attack may be complicated by paralysis, merely asserting that such an event is relatively infrequent. Two sources of fallacy are obvious: (1) that all exudation may have cleared up before the case comes under treatment; and (2) that membrane, though present, may not be visible by the ordinary method of examination. Making every allowance for possible errors, it is justifiable to conclude that the severity of an attack has a very definite relation to the frequency and character of the subsequent paralysis. Besides the amount of membranous exudation indications of the severity of diphtheria are found in the urine, the blood, and the heart. Albuminuria, anæmia, and disturbance of the heart's action are most marked in the severe cases, and each one of these signs serves as a warning of the possible approach of paralysis. In hospital work we have long been accustomed to estimate on

these lines the likelihood of paralysis supervening, and very useful help in treatment is thus obtained. It should be mentioned that all the cases in the above table were treated with antitoxin. In pre-antitoxic years I believe the rule just stated still holds good, though the problem is complicated by the fact that no treatment was available for preventing a mild case from becoming severe; and severe cases usually died. At the same time the diagnosis was less accurate than at present, bacteriological methods not being used. As patients who survived a severe attack were not numerous, a few cases of paralysis occurring among them would represent a high percentage. Thus, in the table I have given less than half the total paralysis was associated with severe attacks of diphtheria, though in consequence of the comparatively small number of such cases the percentage of paralysis is decidedly high. In patients at the present time admitted to hospital, and in consequence of the mildness of the disease not treated with antitoxin, paralysis is, I believe, very unusual. After all, this is only what one would expect, since with surfaces of equal absorptive power the absorption of toxins would vary directly with the extent of the membrane.

I am, Sirs, yours faithfully,

F. J. WOOLLACOTT.

Eastern Hospital, Homerton, N.E., Feb. 3rd, 1901.

THE EXCISION OF HÆMORRHOIDS.

To the Editors of THE LANCET.

SIRS,—I was glad to read your criticism of a recent publication on "Diseases of the Anus and Rectum" in THE LANCET of Jan. 26th, p. 261, in which you very justly comment on the two authors who condemn the removal of hæmorrhoids by excision. These two authors state that their objections to the operation by excision are "that it leads to a severe loss of blood, is tardy in healing, and is liable to cause ultimate contraction of the lower part of the rectum." I very much appreciate your remarks when you reply that "all these objections are imaginary and none of these evils result when operations are carefully performed."

My experience of excision, which now covers a vast number of cases and extends during a period of 25 years, has completely convinced me that when the operation is performed as directed, and the common intelligent principles of general surgery are observed there is no excessive hæmorrhage, and I can absolutely deny that the slightest contraction of the lower bowel ever can or ever does take place. Unless some of the skin at the verge of the anus is sacrificed—which would be a distinct violation of the instructions given for excision—no stricture of the anus ever results. Contraction depends entirely upon the removal of skin, and the contraction bears almost an exact relation to the amount of skin removed. Cutting away the small tabs just outside the anus is one of the treacherous snares which is common to all operations for hæmorrhoids and ought only to be resorted to with the greatest caution and consideration. As to convalescence I am positive that it is not only quicker but far more perfect than that following any other operation for the removal of hæmorrhoids.

I cannot understand how the authors referred to can consider themselves entitled to express their opinions on the merits of excision when they so naïvely boast that they never employ any other method than that of the antiquated ligature. The patients I operate upon by excision invariably have an action of the bowels on the fifth day and after that event they are at liberty to return home on the day following, and more frequently than not they are quite equal to resume their ordinary avocation within a fortnight. The ligature as applied to hæmorrhoids is after all only a relic of the principles which domioated mediæval surgery and cannot compare in rapidity of cure with excision. I may go further and assert that I have never after excision met with a single one of those numerous complications which other authors allege follow the use of the ligature. As a matter of fact, it was the tedium of recovery after using the ligature which originally induced me to abandon that practice for excision. What surgeon at the present day ligatures an artery when he can employ torsion? Early in my surgical career I recognised the absurdity and inconsistency of devising special and exceptional methods for removing a simple pathological condition like hæmorrhoids instead of treating them by the ordinary and rational rules of general surgery.

I am, Sirs, yours faithfully,

Manchester, Feb. 5th, 1901. WALTER WHITEHEAD.

"GASTRIC HÆMORRHAGE AND ITS SURGICAL TREATMENT."

To the Editors of THE LANCET

SIRS,—I have read with interest Mr. Robson's address on the above subject published in THE LANCET of Feb. 9th, p. 375. I think that many will agree with me that by including stomach cases in which chronic hæmatemesis happened to be one of the symptoms before or at the time of operation he puts the surgery of gastric hæmorrhage in an unduly favourable light. "Chronic" hæmatemesis, by which we mean coffee-ground vomiting, is, after all, only one of the symptoms of a disease which may or may not require surgical relief. It seems to me that there should be a very clear distinction made between operations on stomach cases in which chronic hæmatemesis is one of the symptoms and operations undertaken to save a patient's life during an attack of gastric hæmorrhage—acute hæmatemesis—which threatens to be fatal. The question at present vexing the minds of the profession is, Given a profuse and oft-recurring hæmorrhage from the stomach which is threatening life, are we justified in operating or should we trust to medical treatment? In other words, are we to operate for hæmorrhage *per se*, apart from the pyloric obstruction and other stomach disabilities produced by ulceration?

The five cases quoted give us a wrong impression because they are not all cases operated on for gastric hæmorrhage. The first case is a pylorectomy. The chronic hæmatemesis is only an incident in the case, for the result would have been the same had it not been present. The operation was for pyloric obstruction and cannot, therefore, be reckoned as supporting the argument for the surgical treatment of gastric hæmorrhage. I may add, for I know the case well, that the symptoms of pyloric obstruction rapidly reappeared and the patient died within the year. The hæmatemesis, therefore was only an incident in the course of a fatal disease which killed by symptoms other than bleeding. The second case should certainly be excluded as the operation was not performed on the stomach. Moreover, Mr. Robson is mistaken when he says that the patient was "vomiting bright arterial blood." In his report of the case in the *British Medical Journal*, July 10th, 1897, it is only recorded that "the patient was *said* to have vomited blood immediately after the accident." Now, I personally admitted the patient into the hospital. His fellow-workman told me that he thought blood had been vomited. I therefore assumed a "wound of the stomach." At the operation there was no wound of the stomach and I was therefore interested to notice if any sign of gastric hæmorrhage appeared subsequently. None ever occurred, so that beyond the workman's statement there was no evidence whatever of gastric hæmorrhage. These two cases should therefore be excluded. In the remaining three an operation seems to have been done in order to prevent a fatal result from a recurring gastric hæmorrhage, and this is the point that I wish to emphasise—namely, that the presence of "coffee-ground" vomiting is only one of the symptoms of a disease for which surgical interference may be necessary; but what we want deciding is whether we are justified in opening the abdomen on account of the sudden occurrence or recurrence of a "gastric hæmorrhage" so profuse as to threaten life precisely on the same lines as we have been taught to expose a bleeding point in other parts of the body.

I am, Sirs, yours faithfully.

Bradford, Feb. 9th, 1901. J. BASIL HALL.

"LEGISLATION AGAINST NATIONAL INTEMPERANCE."

To the Editors of THE LANCET.

SIRS.—Your leading article in THE LANCET of Feb. 9th, p. 410, on the topic of legislation as applied to the disease of alcoholism should induce many useful thoughts in the minds of those who do not view the question from an intemperate standpoint. The facts which Dr. Carter has adduced are such as will impress the profession that this question must be viewed as one of the first importance by those who love their country. Personally I have never "signed the pledge," but have the reputation of being "strong on temperance" according to a local publican. Pardon me also if I say that I am an active organiser of

more than one branch of athletics. Being thus, perhaps, absolved from some of the prejudice which often clings around any man who feels strongly on the alcohol question, I would like to point out that for a general practitioner it is unpopular to profess a marked adherence to temperance principles. The publican's influence swings against him at once; and that, as everyone knows, means a certain loss of practice by no means small, especially if neighbouring medical men adopt a *laissez faire* attitude on the alcohol question. The fact is, that general practitioners have more reason than the "front rank" men for being shy of speaking the plain truth about alcohol. You may say to your patient without fear of offence, "You are not taking precautions about your sanitary state: your drains smell abominably"; but you will often give great offence if you say, "You are indulging too freely in alcohol: you smell badly of your continual nipping."

It is admitted that the abuse of alcohol is one of the worst evils affecting the British nation. No body of men know that better than the medical profession. Further, if the proved facts are admitted—if, for instance, it is admitted both that the habitual use of alcohol is unnecessary to most people and harmful to many, and that none of the alcoholic drinks in common use have any nutritive value whatever, surely it is time that we general practitioners should raise our voices loudly and unanimously against this national danger just as we have openly and emphatically condemned those breaches of sanitary laws which have in times past nursed the diseases of small-pox, typhus fever, or typhoid fever. At present we are not decided enough: we are not unanimous enough on the alcohol question.

I am, Sirs, yours faithfully,

Feb. 11th, 1901. A COUNTRY PRACTITIONER.

MR. VICTOR HORSLEY'S REPORT.

To the Editors of THE LANCET

SIRS,—I have read Mr. Horsley's report to the Registered Practitioners of England and Wales with rather mingled feelings. No one can have a higher opinion than I of my friend's energy, devotion to his constituents, and desire to be accurate as to his facts. But here his facts are incorrect and his dicta in the highest degree misleading. It is as nearly as possible the opposite of the truth to say that the representatives of the friendly societies would never consent to the question of a wage-limit being discussed at the Conciliation Board. On the contrary, this was one of the questions which were expressly deferred for discussion until such a Board would be formed.

I am, Sirs, yours faithfully,

WILLIAM BRUCE,
Direct Representative for Scotland on the
Dingwall, N.B., Feb. 13th, 1901. General Medical Council.

LEGISLATION FOR THE PREVENTION OF VENEREAL DISEASE.

To the Editors of THE LANCET.

SIRS,—I should be most grateful if any of the readers of THE LANCET would supply me with information, or indicate sources of information, concerning the workings of legislation for the prevention of venereal disease both at home and abroad? Is it possible to ascertain what proportion of the troops destined for South Africa were rejected for venereal disease?

I am, Sirs, yours faithfully,

G. ARCHDALL REID.
Netherby, Victoria-road S., Southsea, Feb. 10th, 1901.

A SAD CASE.

To the Editors of THE LANCET.

SIRS,—As chaplain to the deaf and dumb at St. Saviour's Church, 419, Oxford-street, W., I have had applications for help in getting work from a gentleman whose difficulties do not really lie within the scope of our work, for the reason that the gentleman is able to hear with a tube, being only partly deaf, and is not dumb. I write to THE LANCET because X, as I will call him, passed the second examination in medicine at the Royal University of Ireland in 1884 and is now but 35 years of age. Just as he was ready for his final scarlet fever partly destroyed his hearing and ruined his career. Ever since that X has honourably maintained himself as a dispenser until lately, when through the laying on of a telephone he has had to give place to another with perfect hearing. The situation he now holds at the sum of 25*s.* weekly he must soon give up for good reasons; meanwhile he bravely holds on, rising at 4 A.M. daily to go to this work, which is a long way off. Here is an educated man of refinement, practically an abstainer, a non-smoker, one who is not a broken-down hack or shabby genteel man ruined by vice, but one who can to all outward appearances still hold his own in society and has a cheerful manner and decent coat on his back. Will someone take him on as dispenser or clerk?—in a large business there should surely be room for one who is quick and full of sense though somewhat deaf. The case is fully vouched for by the names hereunder written: the late Samuel R. Mason, B.A., M.D. Dub., ex-Master of Coombe Hospital; J. Torrens M.D., M Ch. R.U.I., &c., late Demonstrator in Anatomy, Royal College of Surgeons in Ireland, 32 Harcourt-street, Dublin; D. M. Greig, M.B. Lond. Monkridge, Crouch-end-hill, N. (who last employed X); G. S V. Wills, F.L.S., Westminster College of Chemistry—and by yours faithfully,

F. W. G. GILBY,
Chaplain to the Deaf.

419, Oxford-street, London, W., Feb. 11th, 1901.

"THE STATISTICS OF MORTALITY OF 1900."

To the Editors of THE LANCET.

SIRS,—Will you oblige by publishing next week the birth-rate, death-rate, zymotic death-rate, and infantile mortality figures for the 33 largest towns, the 67 next largest towns, and the rest of England and Wales for 1900?

I am, Sirs, yours faithfully,

Feb. 8th, 1901. M. O. H.

*** As we have received several inquiries from local medical officers of health for the following statistics of mortality in 1900 we have decided to publish them for the benefit of those specially interested.—ED. L.

Birth-rate—England and Wales—28·9 per 1000.

—	Death-rate. All causes.	Death-rate. Chief zymotic diseases.	Infant mortality (per 1000 births).
England and Wales	18·3	2·00	154
33 great towns	19·5	2·50	172
67 other large towns	18·1	2·25	166
England and Wales less 100 towns	17·5	1·57	138

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT)

The Strain on the Indian Medical Service.—The Murder of Captain Johnston, I.M.S.—Further Development of the Plague Epidemic in Bombay City and Western Bengal.—The Health of the British Army in India.

FOR some few years officers of the Indian Medical Service have had hard work and very little leave. The shorthandedness of the service is at the bottom of the trouble, but I understand that proposals are on foot for taking in a certain number of men on nomination. In 1895 there was the Chitral campaign, which caused all leave to be stopped for many months. In 1897 there was the frontier trouble, when not only was all leave stopped but those on leave were recalled. In 1899 it was practically only possible for the accumulated leave to be taken by the seniors. Last year many men, after from 12 to 15 years' service, went on leave for the first time and were recalled later in the year. The China war caused all leave to be again stopped and every officer was recalled several even on the point of retiring had to come out to India again. It is important to note the very large contingent sent to China—viz., 130 officers for 17,000 troops and 8000 followers. Of these, 122 belonged to the Indian Medical Service. On the other hand, there have been in Calcutta for the past few months 10 medical officers without any patients until recently to look after. The great

strain has taken commissioned officers from numerous large districts, no less than 50 having been taken from civil to military employment. It has been pertinently asked why civil surgeons were not sent to China to man the base hospitals as was done in South Africa, instead of crippling the medical service of India. These continued difficulties have, I understand, led the Government of India to advise the admission of "outside" surgeons for certain appointments.

The murder of Captain D. C. Johnston, I.M.S., was particularly revolting. The murderer, a Ghazi, lay in wait near the entrance to the bazaar at Loralai armed with a sword and dagger to kill the first European he saw. Captain Johnston was going his rounds as civil surgeon when the fanatic rushed out on him and stabbed him to death in a moment. Captain Johnston was senior medical officer at Loralai in the Quetta command. He was only 30 years of age. Several of these outrages have occurred, and it is almost invariably the custom not to be content with the punishment of the fanatics themselves, but to make the community to which they belong suffer also for the crime.

Plague shows a marked increase during the past week. For the whole of India there were 2839 deaths, compared with 2463 during the previous seven days and with 1279 during the corresponding week of last year. There were 575 deaths in the Bombay Presidency, 1863 in the Bengal Presidency, 37 in the Madras Presidency, 23 in the Punjab, and 341 in the Mysore province. In Calcutta there were 78 cases with 76 deaths, including 34 returned under the head of "suspicious." In Bombay city there were 293 deaths from plague—a considerable increase over the previous week. In western Bengal plague continues steadily to increase. There were 1014 deaths in Patna district, 181 in Monghyr, 357 in Saran, and 230 in the Gya district. A slight recrudescence is reported in the Punjab and in the Kolar gold-fields it continues to increase. Bombay city had a mortality of 1119, equal to a rate of 68·97 per 1000 per annum. Of this number 222 were returned as due to plague, being an increase of 68. There is no doubt that the fifth outbreak is now developing and the disease is fairly distributed over the city. The disease shows the same virulence and lately several dead bodies have been found in the public roads.

The retirement is notified of Lieutenant-Colonel G. M. J. Giles, who will be especially remembered in connexion with his investigation of kala azar in Assam, his scientific researches on the subject of the deep sea fauna of the Bay of Bengal, and more recently with his work on mosquitoes.

Cases of Malta fever continue to be proved in the north-western districts of India. Cases of cerebro-spinal meningitis have been occurring for some months past in the city of Calcutta. It is probable that many of the rapidly fatal cases diagnosed as due to cerebro-spinal meningitis were in reality due to plague. With the exception of those officers engaged on the plague staff very few medical men in Calcutta have had any experience of plague, and it is only the later cases of cerebro-spinal meningitis which can be said to have been proved as due to that disease. This view of the history of this outbreak is supported by the fact that some of the early cases were recognised by an officer of the plague staff as due to plague.

It is satisfactory to learn from the latest blue-book that the health of the European army in India has much improved since 1898. There has been a diminution of disease under almost every head. Venereal diseases still continue to cause the largest number of admissions to hospital. It is interesting to note that in Bengal heatstroke, phthisis, and dysentery were more common than in the other commands; that in the Punjab enteric fever had the greatest prevalence; and that in Madras hepatic derangements were the most noteworthy. The mounted arm of the service appears to have the most sickness and the infantry the least. There was only one death from cholera. This is a record. Also only one death occurred from small-pox. In view of the large amount of malaria at Dum Dum and Barrackpore it is a question whether these places should not cease to be kept for military stations. There was a great decrease in 1899 both in the number of cases of enteric fever and in the mortality. The admission ratio fell from 36·9 to 20·6, and the death ratio from 10·17 to 5·14. Perhaps this is explained by the much smaller influx of drafts from England and that there was no field service. There were 1392 admissions and 348 deaths from enteric fever alone making 213 men constantly sick and a loss of service of 77,818 days. The results of inoculation for enteric fever, have not been decisive, but the figures show that the percentage of enteric fever among the inoculated was 20·45 per cent. as compared with 22·22 per cent. among the uninoculated of the same corps and with 25·14 per cent. in the army as a whole. As in former years it is proved that the ages between 20 and 25 are the most vulnerable and also the first year of residence in India. Seven cases of plague with two deaths were reported. In the whole army of India 2142 men were invalided, being 31·64 per 1000 of strength as compared with 38·09 in the preceding year. This result seems chiefly due to the smaller number of men invalided for ague.

Jan. 17th.

Further Development of the Plague Epidemic.—Native Expressions of Sorrow at the Death of the Queen-Empress.

Again this week there is an increase in the plague mortality. For the whole of India 3277 deaths are recorded, as against 2839 during the previous seven days. The increase is chiefly in Bengal and Bombay city. For the Bengal Presidency there were 2181 deaths, of which Patna recorded 1236 and Saran 559. In Bombay city there were 370 deaths from plague, while the general mortality rose from 1192 to 1337. In the Madras Presidency there were 35 deaths and in the Punjab also 35. In Calcutta 73 deaths were recorded. The mortality in this city continues to be much higher than it was last year, although at present there is not apparently more plague, the exceptionally cold weather of the present season, together with an outbreak of small-pox, probably accounting for the greater part of this increase.

It is gratifying to hear that the expressions of regret and sorrow for the death of the Queen-Empress are universal. From the different communities of the natives have been sent messages of profound sorrow, and the greatest respect has been shown by all classes. One hears from time to time all sorts of talk about the decline of the British power; but under the mournful circumstances of the Queen's loss every section of the people gives utterance to its grief. One native paper expresses the general feeling admirably: "She had the tenderest regard for her Indian children and the people of India gave her a mother's affection. We mourn for her as we do for our dearest parent."

Jan. 24th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Salicylic Acid in Fruit Wines: Prosecution by the Health Committee.

Messrs. R. Paterson and Son were summoned under the Food and Drugs Act at the instance of the Health Committee, for selling ginger wine to which was added salicylic acid in the proportion of 13 grains to the pint and raspberry wine which contained 19½ grains of the same drug to the pint. Professor R. W. Boyce, for the prosecution, stated that he had fed a kitten exclusively on milk containing salicylic acid in the proportion in which it was found in the wine, and the kitten lost weight and died. In cross-examination he admitted that the kitten did not take much of the milk, which it appears was curdled by the acid. Mr. F. T. Paul stated that in his experience salicylic acid in full doses was apt to be attended by serious symptoms. Dr. A. S. F. Grünbaum, assistant lecturer on physiological chemistry at University College, Liverpool, stated that salicylic acid increased the action of the kidneys and led to an increase of uric acid—"the substance which forms stone." Asked whether the mucous membrane of the stomach or of the eye was the more sensitive to irritation, he said that there was no mucous membrane of the eye. For the defence Dr. C. J. Macalister and Mr. T. H. Bickerton said that they had taken the wines freely and given them to their households and that no evil results had been observed. Dr. T. R. Bradshaw had taken five grains of salicylic acid daily for a considerable period without any unpleasant effects whatever. The wine was meant to be drunk largely diluted with water, and he was confident that the presence of salicylic acid in the proportions stated was no contra-indication to its use. Counsel for the defence explained that the wines in question, being made from fresh fruit and free from alcohol, could not be made with a smaller proportion of antiseptic, owing to the tendency of the juices to ferment.

The stipendiary dismissed the case. This is the second time these manufacturers have been prosecuted within the last few months; last October the case was also dismissed by Mr. Kinghorn, the deputy stipendiary magistrate

The Dangers of Overhead Electrical Wires.

During a snowstorm last week a bunch of telephone wires, becoming overweighted with snow, fell across the overhead electrical wires in connexion with the tramway system now so general throughout the city. The telephone wires, which immediately became charged with electricity, came in contact with a number of pedestrians, causing them severe electric shocks. Many people became entangled in the wires and writhed about in an agony of convulsions for a long time before they could be extricated. Unfortunately two men were found to be dead upon removal to the hospital, whilst 20 or more individuals were taken to the Royal Infirmary and were found to be suffering from severe injuries, such as burns and extensive lacerations of the integuments, besides injuries to the nervous system caused by shock. An inquiry into the circumstances attending the two deaths is being held by the city coroner. It is sincerely to be desired that the responsibility for the lamentable occurrences may be placed upon the proper shoulders. The introduction of the electric cars into Liverpool has already been attended by many disasters. The proximity of telephone wires to the trolley wires, which are charged with a high voltage, is a danger to life which should not be tolerated, and it is time for the public to demand that some degree of safety in the neighbourhood of the electric tramway lines be assured to them.

The Royal Infirmary; Annual Meeting; the Vacant Honorary Physiciancy

The annual meeting was held on Jan. 30th at the boardroom of the infirmary. The Lord Mayor and the Bishop of Liverpool were specially invited to attend. The bishop, in proposing a vote of thanks to the honorary physicians and surgeons, alluded to Dr. T. R. Glynn's long services to the hospital, which he eulogised in flattering terms His lordship said that, as one connected with the medical profession all his life, he thought he was justified in saying that the part of the work which a doctor liked best was his hospital work. Work which was thus well loved was sure to be well done, and not only was it well done but it was done at the cost of great self-sacrifice. His lordship concluded a sympathetic speech by proposing the appointment of Dr. Glynn as consulting physician, which was unanimously carried. The bishop also alluded to the generosity of Mr. George Melly, a member of the committee, who had provided the installation of the electric light in the wards and corridors at his own cost. It is expected that Dr. T. R. Bradshaw, the senior assistant physician, will have an unopposed election. It is generally recognised that Dr. Bradshaw has earned his promotion to the higher post of honorary physician.

The Royal Southern Hospital.

At the annual meeting of the subscribers to the Royal Southern Hospital on Feb. 11th, the treasurer's statement showed a very unsatisfactory state of things. The debit balance, which at the end of 1899 was £4140, had now increased to £7170. The president made an earnest appeal for funds to support the only general hospital at the south end of the city. During the course of the meeting Mr. Alfred L. Jones intimated that his firm (Elder, Dempster, and Co.) would increase their subscription to £50 a year and also give a donation of £500 towards the reduction of the debt. It also transpired that a further donation of £500 had been received from Mr. F. J. Harrison. Alderman Paull also promised to double his subscription and he appealed to others to do the same. There is now every prospect of a large reduction of the hospital debt, if not its total liquidation, by the assistance which, in due time, it will receive from the proportion of the Lord Mayor's hospital century fund, which is progressing satisfactorily, more than half the amount asked for by the Lord Mayor having been already subscribed. The annual dinner, which had been arranged for Feb. 12th, in conjunction with the Liverpool School of Tropical Medicine, and which the Duke of Northumberland, the Earl of Derby, Professor Ray Lankester, and others had promised to attend, will not take place owing to the national mourning and the death in Brazil of Dr. Walter Myers.

Another Disruption at the Cancer and Skin Hospital.

The income of this charity does not appear to be altogether satisfactory. The treasurer's report states that there is a credit balance of £196 16*s.* 1*d.* as against a debit balance of £217 on Dec. 31st, 1899. This apparently satisfactory result had, however, only been arrived at by the expenditure of capital. Legacies and donations, instead of being invested, have had to be used as current income. An undercurrent of feeling appears to exist in the management of the charity in spite of the lessons of former troubles. Colonel Pilkington, the chairman of the hospital committee (one of the new members elected since the resignation of the old committee, which has already been recorded in THE LANCET),[1] was opposed by a clique at the annual meeting held on Feb. 11th and was defeated by a small majority. Colonel Pilkington accepted a seat on the committee at a time when it was difficult to get anyone to serve. In the words of Mr. A. T. Miller, a member of the committee, "he had endeavoured to do his duty and had had to thwart the designs and ambitions of some people." Truly the charity is still in troubled waters. Will this latter evidence of discord encourage the Hospital Sunday and Saturday Committee to restore to the hospital the grant which under pressure of public opinion was withdrawn a year ago?

Feb. 12th.

WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Plague in Cardiff.

THE suspicion that the man who died from plague at Cardiff on Jan. 31st was infected by a plague-stricken rat has been verified by Dr. W. G. Savage who has reported that in one rat which he examined plague bacilli were found to be present in large numbers. The corporation has announced by public advertisement that the sum of 4*d.* will be paid for every rat guaranteed to have been caught within the borough or port sanitary district and delivered at the corporation depôt. There are three official rat-catchers in the employment of the corporation and this number has been temporarily increased to six. The practical utility of the Cardiff and County Public Health Laboratory is emphasised by Dr. E. Walford in his report for the last quarter of 1900 when he states that in connexion with the October case of plague the facilities offered by the laboratory enabled a provisional diagnosis to be given 18 hours after the patient was seen by the bacteriologist. Upon a subsequent page of the same report we are told that the cook of a steamship was removed on Dec. 31st, 1900, to hospital presenting symptoms of plague with inguinal and axillary glands on both sides of the body slightly enlarged and inflamed. Some blood and exudation from the glands were taken for bacteriological examination, the results of which were completely negative, and the case was treated as one of septicæmia.

Insanitary Houses in Cardiff.

Although Cardiff is one of the oldest towns in the kingdom it did not increase in size to any very considerable extent until the latter half of last century. In 1881 the population was about 80,000 and it is now estimated at 200,000. One is not surprised, therefore, to find in a report of the medical officer of health presented to the Health Committee on Feb. 4th that there are in the town comparatively few slums or courts. The report, which is apparently made in compliance with sec. 32 of the Housing of the Working Classes Act, 1890, refers to 134 houses in different parts of the town containing an aggregate of 331 rooms and with a total population at the time of inspection of 395 persons. Dr. Walford represents that 129 of these houses in 28 groups are unfit for human habitation and the committee adopted his suggestion that they should be dealt with in accordance with the provisions of sec. 32 of the Act of 1890. The report does not state when the houses in question were erected—an omission which is to be regretted in view of the fact that until quite recently the building by-laws in force in the borough were not by any means based upon the most approved lines.

Remuneration of Colliery Surgeons.

It has been well known that the colliers in South Wales have been earning during the past year unusually good wages—10*s.* a day is said to be the average—and at the Merthyr County Court last week it was proved that several

[1] THE LANCET, August 5th (p. 366) and 19th (p. 515), 1899.

defaulting debtors were colliers earning considerably more than this sum. It is gratifying to know that those colliery surgeons who are paid by a poundage—usually 3*d* in the pound—upon the men's earnings have now an opportunity of recouping themselves for the losses which they sustained during the recent five months' strike, when many of them received no payment at all although there was no diminution in the attendance upon the colliers and their families.

Remuneration of Medical Officers of Health.

Judging from several recent instances the Local Government Board seem to have decided that the minimum salary of a medical officer of health who devotes his whole time to the service shall be £500 per annum. The Merthyr Urban District Council, the medical officer of health having recently resigned, propose to pay his successor a salary of £400 per annum, rising by annual increments of £25 to £500 per annum. The Local Government Board do not refuse their sanction to this salary, but will not agree to the requirement that the officer appointed shall devote his whole time to the duties, until the salary shall have reached £500. The appointment will be for a period of five years and will be made on March 6th next. There is no town in South Wales which requires more vigorous sanitary administration than Merthyr, and it is a great pity that the Local Government Board cannot get the district council to appreciate the full extent of their responsibilities.

Liabilities of Medical Officers of Friendly Societies.

A case of considerable importance to the surgeons of friendly societies was heard before Judge Owen at the Barry County Court on Feb. 5th. A member of the Barry lodge of the Ancient Order of Foresters who was suffering from pleurisy was attended on Nov. 20th, 1900, by Mr. P. J. O'Donnell, the surgeon to the lodge, who when he called at the man's house on the following day found the door locked and was unable to gain admittance. Later in the day and during surgery hours the patient's wife asked Mr. O'Donnell to visit her husband the same evening. He replied that as he had seen the man the previous day and had already called at the house once that day he could not see him again until the following morning. The woman thereupon called upon another medical man to attend her husband and his fees, amounting to 21*s.*, were sued for in the county court. A special meeting of the lodge had been held to inquire into the circumstances of the case, and Mr. O'Donnell had been exonerated by the members from all blame in the matter. The county court judge, however, held that he should have attended when asked to do so by the patient's wife, and gave judgment in the man's favour.

Small-pox at Barry.

Upon the arrival at Barry of a Spanish steamer from Barrow-in-Furness, on Feb. 6th, it was found that three members of the crew were suffering from small pox. They had been vaccinated, together with the remainder of the crew, at Barrow a few days before owing to the occurrence of a fatal case of small-pox among the sailors on board. A fourth case was found on Feb. 9th on a steamship which had left Cardiff on the day before. The Barry Urban District Council have had plans prepared and have even received tenders for a small-pox hospital, but in consequence of the opposition of some of the townspeople the erection of the buildings has been indefinitely postponed. Fortunately, however, the town possesses a very well-appointed hospital for the isolation of infectious diseases other than small-pox and the medical officer of health (Mr. George Neale) has very properly refused to allow it to be occupied in view of a contingency such as the present arising. His forethought is now fully justified, for the four men in question were promptly removed to this institution. It is to be hoped that the opponents of the council will now withdraw their opposition, which they must see is most ill-advised and not at all conducive to the best interests of the town.

Newport Medical Society.

An ordinary meeting of the members of this society was held on Jan. 30th, Mr. Walter Basset, the president, being in the chair.—The honorary secretary (Dr. J. Howard-Jones) was instructed to enter upon the minutes of the meeting the profound regret of the society at the death of the Queen.—Mr. A. Falconer Hayden exhibited a case of Sarcoma of the Humerus of large size and very rapid growth in a girl of 17 years, and Dr. A. Garrod Thomas brought before the members a case of Infantile Paralysis affecting Muscles around the Shoulder Joint. Curiously enough both patients had in the first instance been treated by bone-setters for injuries.—Mr. J. Lynn Thomas and Dr. A. William Sheen, two members of the society who have recently returned from South Africa, gave some details of their experiences, Mr. Thomas with the Welsh Hospital and Dr. Sheen with the Langman Field Hospital Limelight views taken by both the speakers were thrown upon the screen, and they included two photographs of the Dutch commander De Wet which had been taken by Dr. Sheen. From the remarks that were made it was evident that the Welsh Hospital and the Yeomanry Field Hospitals were thoroughly efficient.

South Devon and East Cornwall Hospital.

The annual meeting of the subscribers of this institution was held at Plymouth on Feb. 8th. The medical report stated that during 1900 the in-patients numbered 1282, an increase of 38 compared with 1899. There were also 2654 out-patients treated against 2650 in the previous year. 287 patients had been sent to the Pearn Convalescent Home, against 253 in 1899. The financial statement showed that the income amounted to £6492 and the expenditure to £6755. During the past year a donation of £2000 had been received from Mrs. F. Cubitt, and in December last the trustees of the late Mrs. E. S. Hains sent £21,000 to form a fund to be called the "Elizabeth Hay Fund."

Clifton Dispensary.

The eighty-eighth meeting of the subscribers of the Clifton Dispensary was held on Feb. 5th under the presidency of the Rev. G. Hemming. The medical report stated that 3451 patients had been treated during 1900, including 73 cases of midwifery, as compared with 4203 in 1899. The financial statement showed that there was a favourable balance of £127. 20 patients had been sent to the Jubilee Convalescent Home at Clifton.

Feb. 11th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal College of Physicians of Edinburgh.

A QUARTERLY meeting of the Royal College of Physicians of Edinburgh was held on Feb. 5th, Dr. Fraser, the President, being in the chair. At the commencement of the proceedings it was unanimously resolved that the College present to His Majesty King Edward VII. an address of condolence on the death of Her Majesty Queen Victoria and of congratulation on His Majesty's accession to the throne.

Dr R. M. Ronaldson was introduced and took his seat as a Fellow of the College. Mr. Tom Henry Trevethan Frampton was admitted by ballot to the Fellowship of the College. On a ballot the following candidates were admitted to the Membership of the College after examination: Dr. Noel Dean Bardswell, Banchory; Mr. Charles Plumley Childe, Southsea; Dr. George William Hamilton Cumming, Torquay; and Dr. Charles Harold Johnson, Edinburgh. The Registrar reported that since the last quarterly meeting 33 persons had obtained the licence of the College by examination.

The Curator submitted his report for the past year regarding the research and reporting undertaken in the laboratory during the year and the expenditure incurred. The report showed that 25 workers had been engaged in research, 1122 specimens had been reported on, and the expenditure had amounted to £822 6*s.* 10*d.* The arrangements which had been concluded between the College and the town council, by which the bacteriological diagnosis of suspected cases of tubercle, diphtheria, and enteric fever occurring among the citizens of Edinburgh is carried out in the laboratory at the expense of the town, had been in working order for some months. Negotiations were in progress between the College and the Local Government Board, whereby it was intended that the bacteriological examination of suspected cases of plague would be conducted within the laboratory on payment of a fee for each report identical with that paid by the English Local Government Board. A special department of the laboratory, isolated from the rest of the premises and judged suitable by the President (Dr. Fraser), had been set apart for the purpose.

Dr. Alexander Bruce was after examination recognised as a lecturer in Practice of Medicine and Dr. William Wood

was similarly recognised as a lecturer on Materia Medica and Therapeutics, the President conferring on them certificates of qualification.

The Parkin Prize, which is in the gift of the College, was awarded after competition equally between Dr. W. G. Aitchison Robertson and Dr. Noel Dean Bardswell. The subject of the essay on the present occasion was in terms of the deed of bequest: "On the effects of volcanic action in the production of epidemic diseases in the animal and in the vegetable creation and in the production of hurricanes and abnormal atmospherical vicissitudes."

A letter was submitted from the Principal and Vice-Chancellor of the University of Glasgow inviting the College to take part in the celebration of the ninth jubilee of the University. It was unanimously agreed to accept the invitation and remitted to the council to prepare an address of congratulation for presentation on the occasion.

Aberdeen Royal Infirmary.

The annual report shows that the total income for the year 1900 was £11,708 9*s*. 4*d*. and the expenditure £12,032 1*s*. 11*d*., leaving a deficit in the year's work of £323 12*s*. 7*d*. The number of occupied beds has increased from 202·3 to 207·5, and along with other institutions the hospital has suffered from the high prices prevailing for coals, provisions, &c. The cost per occupied bed thus rose to £50 13*s*. 9*d*., compared with £48 0*s*. 7*d* in 1899. The donation of £25,000 by Lord Mount-Stephen enabled the whole debt on the institution to be cleared off, leaving a balance to the good of £11 6*s*. 5*d*. On buildings in connexion with the jubilee extension scheme there has been a total expenditure of £75,297 7*s*. 8*d*. The revenue for the year included £68 10*s*. for medical students' fees. At the Convalescent Hospital, Cults, 252 patients were received and treated during the year. The total expenditure was £612 5*s*. 2*d*., being £24 0*s*. 7*d*. above the income for the year.

Aberdeen Royal Asylum.

The number of patients in the Royal Lunatic Asylum on Dec. 31st last was 887. During last year there were 308 admissions, 81 discharges, and 81 deaths. The building improvements have gone on steadily, and the new hospital wings have relieved the overcrowding of patients in the main asylum. Additional ground has been purchased in Aberdeen, and the branch at Daviot has been restored and the furniture which had been destroyed by fire there has been replaced. The total income for 1900 was £32,618 5*s*. 1*d*. and the expenditure was £29,317 7*s*. 3*d*., leaving a surplus of £3300 17*s*. 10*d*. The report by Dr. W. Reid, the medical superintendent, shows that though there were many difficult and anxious cases to treat there were no serious accidents during the year.

Small-pox in Glasgow.

The number of patients officially reported under treatment on Feb. 11th was 436, a number only eight in excess of the total a week earlier. Considering the rapid rate of advance which marked the course of the epidemic in its earlier phases the record just quoted is relatively satisfactory. But it must be remembered that many of the patients admitted to hospital during January are now convalescent and are being discharged. Thus a mere comparison of the weekly totals gives too favourable a few of the facts of the epidemic. On the whole, however, the position and outlook are improving. The new cases, as the figures just quoted show, are only occurring in sufficient numbers to keep the total number under treatment substantially the same as it was a week ago. With few exceptions, too, the admissions come from the recognised infected areas. Revaccination has become much more popular, and it is only just to the public to add that there has been little or no disposition to indulge in panic or to listen to exaggerated or alarming statements. So far the sanitary authorities have found no time to issue a tabulated statement of the details of the epidemic. Their energies, as can readily be imagined, have been severely taxed, and it is to be hoped that soon they will be able to claim that the epidemic is stayed.

Scottish Triple Qualification.

The last quarterly conjoint examinations of the Scottish Medical Corporations were distinguished by a very high percentage of rejections, the significance of which may possibly be open to various interpretations. The facts are as follows. At the first examination of 26 candidates nine passed; for the second examination, 35 candidates entered and 13 passed; at the third examination, 22 passed out of 30 candidates; and of 74 entrants for the final examination, 35 were successful. The high percentage of rejections in the earlier examinations is noteworthy.

Return of a Medical Officer.

Dr. Hugh Colligan Donald has recently received a cordial welcome from his numerous friends in Paisley on his return from South Africa, where he has been serving for over a year. Shortly before he sailed for home Dr. Donald had the misfortune to sustain a fracture of the leg, from the effects of which, however, he has now practically recovered.

Professor Cleland on Education.

At a recent meeting of the Educational Hand-work Association of Scotland an address was delivered by Professor Cleland, F.R.S., who discussed the value of the promotion of manual dexterity as a means of cultivating the intelligence. Professor Cleland, after alluding to the fact that the early mental processes of the child were all concerned with sense impressions or muscular efforts, considered it was rational that in the training of children use should continue to be made of the method by which nature had already taught them so much. It was necessary, however, that exercises should be chosen which would teach the child to observe and to think, actions capable of being performed by routine having necessarily but little mental educational value. Modelling and drawing were commended as specially valuable methods of training for children.

Feb. 12th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Direct Representative for Ireland.

SIR WILLIAM THOMSON has been re-elected Direct Representative for Ireland upon the General Medical Council. He received 1130 votes, against 245 given for Mr. T. Laffan of Cashel.

Belfast Medical Students' Association.

THE fourth annual meeting of this society was held in the students' union of Queen's College, Belfast, on Feb. 5th, the President (Mr. Walter Phillips, B.A.) being in the chair. The President introduced Mr. J. E. MacIlwaine, B.Sc., who gave an account of his experiences as dresser with the Irish Hospital which was sent by Lord Iveagh to South Africa. The paper, which was admirably illustrated by a series of slides prepared from photographs which had been taken in Africa, gave an extremely interesting account of the good work which had been done by the Irish Hospital, and, coming from one who took such a personal part as the author did in all details of the work, it presented a very vivid picture. The staff of the Irish Hospital saw little surgery but an immense deal of medical ailments, especially enteric fever, which apparently is almost invariably returned as "simple continued fever" Many of the cases of this disease treated were very severe, and Mr. MacIlwaine spoke hopefully of the results of inoculation against the disease but thought that the immunity gained was not a very long one. Several of the college medical professors and of the Royal Victoria Hospital staff who were present spoke in very commendatory terms of Mr. MacIlwaine's most excellent paper.

North of Ireland Branch of the British Medical Association.

The adjourned winter meeting (owing to the death of the late Queen) was held in the Belfast Museum on Feb. 7th, Professor John W. Byers, the President, being in the chair. Dr. T. S. Kirk showed a girl in whom he had by operation restored the nose after Lupus. Dr. J. B. Moore showed the specimens from a case of Gastro-jejunostomy. Professor T. Sinclair showed a series of Vesical Calculi of unusual size removed by suprapubic cystotomy, and a number of Gall-stones removed from a case of persistent jaundice in a woman. Dr. Moore read notes of a case of Perforated Gastric Ulcer successfully operated on; Dr. A. B. Mitchell read notes of a case of Hour-glass Stomach (the result of cicatrisation following an ulcer) which had been successfully operated on; and Dr. W. Calwell read a paper on When Should a Case of Chronic Dyspepsia be Explored by the Surgeon? These communications led to a most interesting discussion on recent advances in the surgery of the stomach in which the following took part: Dr. P. Redfern, Dr. A. Fullerton,

Dr. A. Dempsey, Professor Sinclair, Dr. J. S. Darling (Lurgan), and the President. It was brought out in the debate that the first successful operations in Ireland for a perforated gastric ulcer and for hour-glass contraction of the stomach were done by two Belfast surgeons, and that up to the present date 21 cases of operation for perforated gastric ulcer have been done by Belfast surgeons, with 12 recoveries, within the last three years.

Portaferry Dispensary District.

Mr. E. Smyth was on Feb. 9th elected by the Downpatrick Board of Guardians as medical officer of the Portaferry Dispensary District.

The Belfast Lunatic Asylum.

The visiting committee reported to the committee of management of the asylum on Feb. 11th that they endorsed the statements made by Sir G. P. O'Farrell, the Government inspector, in regard to the great insufficiency of accommodation, particularly for female patients, there being an excess of 228 inmates beyond the certified limits of accommodation in the establishment. It would appear that out of 322 admissions during last year 188 were received from the workhouse, as compared with 72 in the previous year. In reply to inquiries as to the cost of construction of asylums of various types the medical superintendent, Dr. W. Graham, said that at Aberdeen the cost of the villa type was £142 per bed, at Berlin £200 per bed, at Leipsic £142 per bed, at Birmingham £415 per bed on the pavilion or corridor plan (and this did not include the land); at Canterbury it was £460 per bed, at Croydon £458 per bed, and in East Sussex £282 per bed, but none of these sums included maintenance. He had no doubt that it would be cheaper to erect on the villa colony system rather than to build one huge establishment. The proposed asylum for Belfast was for 820 patients, and with land, furnishing, and equipment it would run to almost £300 per bed. They used their land up very largely in this system. A resolution approving of the adoption of the villa system as recommended by the medical superintendent was carried; and it was agreed that the surveying of the ground should be carried out by the borough surveyor's department, and that a ground plan should be prepared with the advice and coöperation of the medical superintendent as to where the villas should be placed.

Feb. 12th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Alleged Scandal with regard to a Post-mortem Examination.

A FORTNIGHT ago the daily press discovered an alleged scandal which gave the opportunity of writing many articles against the medical profession. Last year a police official named D—— met with a carriage accident. He was laid up for some months and was finally admitted to a hospital where he died some days after admission. His widow, on the advice of her friends, tried to exploit the accident with a view to getting damages out of the owner of the carriage which was the cause of the accident. The hospital authorities certified that the patient had died from alcoholic cirrhosis. The presiding judge ordered an inquiry and Dr. Socquet was bidden to make a post-mortem examination on the body which had been buried for nearly a year. According to the daily press Dr. Socquet was much surprised to find that the body had been disgracefully treated. The skull had been opened and in place of the brain it was found to contain some old newspapers and some tow. The viscera were missing from the abdomen and the thorax, which cavities contained three livers and sundry foreign bodies, such as cigarette ends, pipe-stems, string, vegetable peelings, and the various rubbish generally found in a room, which had apparently been emptied into the body. Of course there was a great scandal and interviews were published with the Director of the St. Antoine Hospital, with Dr. Gilles de la Tourette, in whose wards the man died, with the Assistance Publique, with the *internes*, and generally with everybody except Dr. Socquet. Well, I learn from him that the whole story is an absolute invention, except that he found that a necropsy had been held on the body of D——. He knew that already, for the post-mortem examination had been held by permission of the family of D——; the foreign bodies, however, existed only in the imagination of the reporters. Nevertheless, to give some satisfaction, the Director of the Assistance Publique has revived an ancient regulation which has been vigorously put into action as regards the hospitals. The result will be the disappearance of pathological anatomy. As it is no post-mortem examination can be made without the express permission of the family of the deceased, a permission which is more and more rarely given But in addition, by the strict letter of the law now applied the operating pathologist cannot take away an organ, even in a granted post-mortem examination, without a special permit for each case which has to be obtained from the Director of the Assistance Publique. As a matter of fact, necropsies cannot be made within 24 hours of death and burial usually takes place as soon as possible after the examination, so that the medical man has only about two or three hours in which to make his examination. It will therefore be impossible for him, if he should come across any interesting pathological condition of an organ, to get the requisite permission from the director in the time at his disposal. As a rule this regulation is never insisted upon, so that its enforcement can only be considered as a pandering to the daily press. The last meeting of the Society of Legal Medicine gave the sequel to the matter. Dr. Gilles de la Tourette explained that the post-mortem room at his hospital was very small and held only two tables. If there happened to be many post-mortem examinations to make in one morning it was difficult to keep the various organs removed separate, and mistakes easily occurred when the post-mortem room porter was putting them back. The responsibility rested first with the porter, next with the authorities for not providing a post-mortem room of sufficient size for a big hospital, and, finally, with the examining magistrate, who should have been cognisant of the fact that a post-mortem examination had been already performed. Finally, Dr. Gilles de la Tourette asked his colleagues to appoint a committee which should demand both from the courts and the Administration the favour that post-mortem examinations and their results should be absolutely privileged (*secret absolu de l'autopsie*). M. Brouardel, who was prevented from being present, asked that a second meeting should be held, as he had some important information bearing on the case of D—— to bring forward. The matter was referred to a committee consisting of M. Piquet, M. Vibert, M. Lefuel, M. Constant, Dr. Gilles de la Tourette, and two other medical men versed in forensic medicine.

Hygiene in the Post Office.

The Minister of Commerce, Posts, and Telegraphs recently set on foot an inquiry into the hygienic conditions of post-office employés with special regard to the question of tuberculosis. He instructed one of the departmental medical officers, Dr. Mignot, to report to him on the matter. The report shows that tuberculosis is responsible for 36 per cent. of the deaths among the staff, a much higher rate than the general tuberculosis death-rate for the whole of France. As probably the death-rate among the office staff is higher than the rate among the out-door staff the Minister has adopted the conclusions of the report and has issued three regulations relative to (1) the improving from a hygienic point of view of post-office buildings; (2) a medical examination of applicants for employ in the department; and (3) the creation of a committee to investigate the best means of establishing a sanatorium for the use of post-office employés suffering from tuberculosis. None of the staff is allowed to spit on the floor, special spittoons being served out, and all floors are to be rubbed over with a damp cloth instead of being swept dry. It is much to be hoped that all the great State departments will follow the example set by the Minister of Commerce.

The International Psychological Institute.

Last week the International Psychological Institute was founded at Paris, being the outcome of a private society which was started with that end in view. The institute is directed by an international committee of organisation of which the chief members are as follows:—Germany: Freiherr von Schrenck; England;[1] America: William James; France: d'Arsonval, Bouchard, Duclaux, Marey, Sully-Prudhomme, and Th. Ribot; Italy: Lombroso; Russia: Mendeleieff and Ochorowicz; and Switzerland: Th. Flournoy. The society is composed of members of three classes (1)

[1] The English member of committee was the late Mr. Frederic Myers.

foundation members who subscribe 10,000 francs; (2) subscribing members (*donateurs*) who give a donation of 1000 francs or an annual subscription of 100 francs; (3) ordinary members who give a donation of 250 francs or an annual subscription of 20 francs. The address of the institute is 28, Rue Serpente, Hôtel des Sociétés Savantes. The work of the institute will comprise experimental psychology, the anatomy, physiology, and pathology of the nervous system, hypnotism and other psychical phenomena, and social and criminal psychology. It is intended that the institute should be an experimental centre where *savants* throughout the world may find laboratories and clinical material with which they may pursue their researches under conditions of scientific accuracy. The first lecture, which was given by M. Duclaux, was a great success and bodes well for the future of the new undertaking. A notable audience assembled in the lecture-room in the Rue Danton, where many ladies, members of the institute, members of the Academy, and members of the Academy of Medicine were present. The forthcoming lectures should be as good—those of M. Dussaud, Mr. Frank Hales (Cambridge), M. Bergson, M. Van Gehuchten (Louvain), and of M. Pierre Janet have been already announced. M. d'Arsonval, M. Tardes, M. Ochorowicz and M. Bairac will announce theirs shortly.

Feb. 13th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Public Health Service in Prussia.

THE public health service in the kingdom of Prussia, which in the opinion not only of the medical profession but also of the general public is no longer in accordance with modern requirements, will now be reformed. The present state of this service and the reforms proposed by the Royal Commission have been described in former numbers of THE LANCET.[1] Unfortunately, the thorough reform so much desired by public opinion did not meet with the approval of the Prussian Parliament for political reasons which it would take too long to explain to foreigners. It will be remembered that the Royal Commission proposed the formation of a board of health in every district and circuit and the providing of a laboratory for hygienic work in every province. The medical officers to circuits (*Kreise*), who had hitherto been receiving small salaries and were thus compelled to engage in private practice, ought, in the Commission's opinion, to be made fully-salaried Government officials and to be debarred from private practice. In Parliament, however, the majority of these proposals were not accepted, and there is no longer any question either of laboratories or of boards of health for districts or of the general appointment of fully-salaried medical officers. The "reform," in fact, is limited to the institution of local boards of health, where they are desired by the local authorities, whilst the appointment of medical officers with adequate salaries and no private practice will only take place in those districts where there is a great amount of work. Except in a very few of the larger towns the medical officers will continue to act as medico-legal experts. The hopes once entertained as to the goodwill of the Government in this matter have been small enough since the Bill became law, and they have been additionally disappointed by the new Budget for the financial year beginning on April 1st. The Government asks for funds for the appointment of only 21 fully-salaried medical officers out of 499 at present employed. The salaries when private practice is not allowed are very small, beginning with 3600 marks (£180) and rising to 5700 marks (£285). Moreover, they receive a sum for house rent and are entitled to pensions when they retire, and in the event of their death pensions will be granted to their widows and children. The second class, the medical officers with permission to practice, will form the great majority. Hitherto they have been receiving the ridiculous sum of 900 marks (£45), but now they will have from 2250 marks (£112 10*s.*) to 4200 marks (210), but no pension. Special medical officers to law courts are to be appointed in 15 cases only. The *Deutsche Medicinische Wochenschrift*, in criticising the Government proposals, states that the expenses of the "reformed" public health service are only 500,000 marks (£25,000) higher than they were before the reform. Dr. Wallichs, the district officer of health at Altona, forcibly remarks in the *Aerztliche Vereinsblatt* that care for the public health in Prussia continues to be a matter of secondary interest. He says that owing to the inadequate salaries paid to the medical officers who are debarred from private practice the great majority will prefer not to belong to this category but will rather remain in the second class with a still lower salary where they will have at least an opportunity of earning a livelihood by private practice. No reform at all would have been better than this "torso," which will for many years to come continue to be the organisation of the public health service in Prussia. Undoubtedly in this matter, so important for the public welfare, the leading State of Germany has been outdone by a good many of the smaller States where the sanitary organisation has been brought up to date.

[1] THE LANCET, Sept. 26th, 1896, p. 915, and April 24th, 1897, p. 1179.

Plague-infected Rats on Board Ship.

Some anxiety was felt lately at Hamburg when the port sanitary authorities found many dead rats on board the steamer *Pergamon*, and bacteriological examination showed that the animals had suffered from plague. The steamer and the cargo were therefore thoroughly disinfected and everything that the rats had gnawed was burnt by the fire brigade. No case of plague has subsequently occurred among the crew and the steamer has been allowed to leave for Italy.

The Imperial Council of Hygiene.

The regulations for the new Reichsgesundheitsrath (Imperial Council of Hygiene) have been published by the Federal Council. The council has been instituted in conformity with the new laws relative to epidemic diseases to be a consulting body in connexion with the Imperial Health Office. The members are elected by the Federal Council and the president and vice-president are appointed by the Imperial Chancellor. The membership is an honorary office and is tenable for only five years, after which time fresh elections will take place. The Imperial authorities and also the authorities of the individual confederated States have the right to send representatives to the meetings. The council is authorised to send commissioners to make inquiries in any part of the empire where intervention in hygienic matters seems to be necessary. There will be nine special committees of the council, the functions of which will be to take cognisance of the following subjects: (1) public health, including hygiene of dwellings, ventilation, &c.; (2) hygiene of food; (3) water-supply; (4) hygiene of factories; (5) epidemic diseases; (6) hygiene of hospitals; (7) the pharmacopœia; (8) hygiene of shipping; and (9) veterinary hygiene. The "plenum" of the council will meet only when convoked by the Imperial Secretary of State for the Interior. The proceedings are not public. It remains to be seen whether this programme will be realised and how often the Imperial Government will think it requisite to convoke the council. Care must be taken to prevent the council from coming into collision with the medical departments of the individual States which are very anxious to maintain their prerogatives in this respect, and whose influence is the greater as the executive is entirely under their control, whilst the Imperial Council of Health is only a consulting body without executive functions. Of the members of the council the following prominent names may be mentioned: Professor von Bergmann, honorary F.R.C.S. Eng., the well-known professor of surgery in Berlin University; Professor Binz of Bonn; Professor Buchner of Munich; Professor Flügge of Breslau; Professor Fränkel of Halle; Professor Gaffky of Giessen; Professor Gerhardt of Berlin; Professor Robert Koch, the bacteriologist; Professor Löffler of Greifswald; Professor van Noorden of Frankfurt; Professor Rubner of Berlin; Professor von Ziemssen of Munich; and many others.

Statistics of German Universities.

The number of students registered at the German Universities this winter is 34,363, as compared with 27,784 in the winter of 1894-95, so that an increase of 20 per cent. has taken place during the past six years. The attendance of students at the various universities is as follows:—6673 in Berlin, 4184 in Munich, 3584 in Leipsic, 1917 in Bonn, 1731 in Halle, 1638 in Breslau, 1350 in Tübingen, 1317 in Göttingen, 1230 in Heidelberg, 1218 in Freiburg, 1264 in Würzburg, 1132 in Strassburg. 1053 in Marburg, 967 in Erlangen, 874 in Königsberg, 847 in Giessen, 780 in Kiel,

733 in Munster, 726 in Greifswald, 681 in Jena, and 512 in Rostock. As regards attendance in the various faculties there are 2327 students of Protestant theology, 1584 of Roman Catholic theology, 10,511 of law and national economy, 7113 of medicine, 5200 of philosophy and history, 4722 of mathematics and natural science, 1157 of pharmacy, 1512 of agriculture, and 448 of dental surgery. Moreover, at the University of Giessen there are 126 students of veterinary medicine, but in other parts of Germany veterinary medicine is taught at special colleges not belonging to the universities. These figures, compared with those of the previous year, show that the students of Protestant theology have decreased by 86 and the students of medicine by 430. The students of other branches have increased considerably, especially the students of law, where the increase has been 47 per cent. during the past 10 years. At the University of Berlin there are 366 students registered in the faculty of theology, 2359 in the faculty of jurisprudence, 1312 in the faculty of medicine, and 2636 in the faculty of philosophy. With respect to nationality, 4679 students come from Prussia, 994 from the other States of the empire, and 714 from foreign countries. Of foreigners of European origin the majority (318) come from Russia, 112 from Austria, 88 from Switzerland, 62 from Hungary, 32 from Great Britain and Ireland, 22 from Italy, 20 from France, 20 from Roumania, 17 from Turkey, 17 from Servia, 16 from Bulgaria, 15 from Sweden, 15 from Greece, 12 from the Netherlands, 11 from Luxemburg, five from Belgium, four from Spain, three from Denmark, and one from Portugal. Of foreign students from distant parts of the world 114 come from America, 62 from Asia, three from Africa, and one from Australia. Berlin University is therefore in reality cosmopolitan. In addition to the duly registered students there are 5466 persons who are entitled to attend the lectures there; for instance, the students of the technical and other academies and others to whom this right has been granted by a special decree of the Senate of the University. The number of female students is 439.

Feb. 11th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Mortality and Serum Treatment of Diphtheria in Rome.

A PAPER by Dr. Spolverini in a recent number of the *Policlinico*[1] on the mortality from diphtheria in Rome shows that a remarkable increase occurred last year both in the number of cases and in the death-rate of that disease in this city. The period studied (from July 1st, 1895, to May 31st, 1900) covers the time following the introduction of the serum treatment. During each of the first four years of that period the average mortality was only 16 per cent., whereas previously it had ranged between 60 and 70 per cent. From July 1st, 1899, to May 31st, 1900, however, the cases were much more numerous than in the four preceding years, whilst the death-rate was almost doubled, reaching no less than 28 per cent. To explain such a sudden and exceptional rise various factors must be considered, chief amongst which is the occurrence of previous febrile diseases, more especially of measles. This complaint was indeed very prevalent in Rome from November, 1899, till the end of the following May, and an analysis of the cases treated in hospital during that time shows that out of a total of 56 cases 20 had a history of an attack of measles preceding the diphtheria. Amongst these same cases there were 16 deaths, of which 12 occurred in children who had suffered from measles not long before. The localisation of the false membrane is always a powerful factor in determining a high rate of mortality in diphtheria. This is well seen from the following analysis of the 985 cases notified to the authorities during the years under consideration:—

Localisation.	Cases.	Deaths.	Mortality per cent.
Pharynx	538	78	14·49
Larynx	447	112	25·05

[1] Policlinico, Sezione Pratica, anno vii., fasc. 5.

This cause operated still more fatally in children the resistance of whose tissues had been weakened by preceding attacks of measles, for of the 133 laryngeal cases which occurred between July 1st, 1899, and May 31st, 1900, no less than 44 (33·83 per cent.) were fatal. Over the same period intercurrent acute affections (which invariably swell the rate of mortality in diphtheria) were exactly double the average of the first four years and the death-rate was increased to a corresponding degree. The paper concludes with remarks on the serum treatment, which Spolverini regards as unfailing if employed on the first day of an attack of diphtheria, but as next to useless if delayed until the third or fourth day, as happens only too often in a hospital, to which the most desperate cases are usually sent, very frequently late in the course of the disease. A quantity of serum varying from 3000 to 4000 units was used, and the first signs of improvement were generally noticed after 24 hours from the time of injection. No bad results are attributed to the administration of the serum and in those cases treated early all the patients recovered completely without ever presenting any complication.

Proposed Law for the Prevention of Malaria.

The text of this Bill as drawn up by Celli and others has been published. It consists of five articles, the first of which provides for the official declaration of affected zones, and the second for the gratuitous distribution of quinine to the poor by municipal authorities and the taxation of the property for the purpose of raising the necessary funds. Article 3 makes it incumbent upon the Governmental department or Government contractor responsible for the execution of any public works which give rise to the occurrence of malarial fevers to supply quinine gratuitously, and requires that if any person dies or becomes permanently disabled from malaria whilst employed on such works the same indemnity must be paid as that established for persons under the Employers' Liability Act of 1893. Article 4 enjoins the protection against the entrance of insects to all houses within the malarial zone inhabited by persons employed in the public service and on public works from the beginning of June till the end of December, and offers rewards not exceeding 1000 lire (£40) to proprietors and manufacturers who do the like for the houses of their employés and of the peasants. Article 5 empowers the Government to take whatever further measures may seem necessary for the carrying out of the provisions of the law after such measures have been approved by the Superior Council of Sanitation and by the Council of State.

The Foreign Practitioner Question.

On coming up for discussion in the Chamber of Deputies the Bill proposing amendments in the law regulating foreign practice in Italy, the text of which I gave in my last letter,[2] was, at the request of its sponsor, Dr. Santini, referred back to the Parliamentary Committee which drew it up. On account of the change of Government now taking place a considerable time must elapse before the measure can be reintroduced, and hopes are entertained that it will be abandoned altogether.

Feb. 9th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Elmira Reformatory, New York State.

IN this large reformatory there has been within the past year and a half a complete change in management with a corresponding somewhat radical alteration in the methods pursued. Mr. Brockway, the late superintendent, had been at the head of the institution for a number of years, and although the means followed by him to preserve discipline among and to educate the inmates had for a considerable time been harshly criticised in the lay papers as unnecessarily severe, it must in his favour be said that his results were on the whole satisfactory and met with the general approval of the majority of the medical journals of America. The twenty-fifth annual report of the board of managers has recently been presented to the New York State Legislature, and referring to methods of administration the report says: "The radical difference of views which had existed between the remaining members of the old board

[2] THE LANCET, Jan. 26th, 1901, p. 290.

and those more recently appointed by Governor Roosevelt had made harmony of action impossible and it was not until the beginning of the year 1900 that the latter were able to undertake and enforce the measures for improvement. For a number of years tuberculosis has been an increasing and dangerous feature among our prisoners. Many have it upon arrival in a more or less advanced stage; others develop it under the trying conditions of prison life and association with those already affected. The management further became convinced, by careful scrutiny extending over many months, that prisoners healthy on arrival became affected. There was marked absence in the medical department of our predecessors of full and detailed records both as to cases of ordinary disease and of insanity." Under the head "discipline" the report says: "Since the statement in the last annual report that flogging had been abandoned at Elmira some sincere friends of the reformatory have expressed the fear that its discipline would deteriorate. The board has not shared that fear." The maintenance of the educational system by the present board has been seriously questioned by those who profess to see in the withdrawal of Mr. Brockway the first step towards the destruction of the fabric which he has laboriously created. The board finds in this system much to admire and uphold, something to criticise and modify, and something to condemn. The gross number of inmates who have been on the books during the past 12 months is 2050, of whom 666 were received during that period and 774 were dismissed, producing a daily average of 1365. The efficient control of so large a reformatory is an undertaking which will tax the brains and energies of the most active and intelligent superintendent and staff. It remains to be seen how the new methods will work. The result will be a matter of much interest to philanthropists everywhere.

Dental Surgeons in the United States Army.

The new Army Bill before Congress has the following provision: The Surgeon-General of the Army, with the approval of the Secretary of War is authorised to employ dental surgeons, to serve the officers and enlisted men of the regular and volunteer army, in the proportion of not exceeding one for every 1000 of said army and not exceeding 30 in all. The said dental surgeons shall be employed as contract dental surgeons under the terms and conditions applicable to army contract surgeons, and shall be graduates of standard medical or dental colleges, trained in the various branches of dentistry, and of good moral and professional character, and shall pass a satisfactory professional examination. It is also provided that three of the number of dental surgeons to be employed shall be first appointed by the surgeon-general, with the approval of the Secretary of War, with reference to their fitness for assignment under the direction of the surgeon-general, to the special service of conducting the examinations and supervising the operations of the others, and for such special service an extra compensation of $60 per month will be allowed; also, further, that dental college graduates now employed in the hospital corps, who have been detailed for a period of not less than 12 months to render dental service to the army and who are shown by the reports of their superior officers to have rendered such service satisfactorily, may be appointed contract dental surgeons without examination.

Vaccination in Alaska.

The Yukon Council, the legislative body of the region, has passed an ordinance requiring all persons in Yukon Territory, extending from White Horse to Forty Mile, to be vaccinated as soon as the vaccine arrives. This order affects from 10,000 to 15,000 persons. The Council has appointed the six Dawson physicians to make a house-to-house visitation throughout Dawson and along all the Klondyke creeks and to vaccinate all persons who have not been vaccinated within the last seven years. The Government bears all cost of vaccination under this compulsory order and the operators are paid $30 a day for their services. A mounted policeman will accompany each physician to see that his mission is not abused. Anyone refusing to submit to vaccination will be liable to a fine of $250 or three months in jail, and anyone not reporting a case of rash or anything looking like small-pox will be subject to a much heavier penalty.

Notification of Tuberculosis.

Dr. H. M. Biggs, of the Board of Health of New York City, in a recent address referred to certain English writers who had argued against the notification of tuberculosis, among whom was the late Sir Richard Thorne. To Dr. Biggs it seemed incomprehensible that a tuberculous person should be permitted to live in a crowded workroom where he would be a menace to all about him. Tuberculosis, while it is a highly infectious disease, in his opinion should be put in a class by itself. As to the means of limiting its spread, the best plan is compulsory notification and registration. The New York Board of Health has not classed it as a "contagious disease" but as a "communicable" disease. When a report comes into that department notices are at once sent out to the physician and to the patient giving proper instructions as to preventive measures. Another important thing is that it is not necessary for the general public to be aware that a case of tuberculosis has been reported to the Board of Health; the records are simply for the use of the department. It was from fear of publicity that a strong protest was made against compulsory registration in New York. At this time in New York, where there is compulsory registration, about 10 000 cases are reported annually, excluding duplicates. It has been found that a man suffering from the disease goes from institution to institution, thus being reported as many as 15 or 20 times. City hospitals for advanced cases and country hospitals for incipient cases seem to Dr. Biggs to be the ideal plan.

Jan. 18th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The New Medical Act, New South Wales.

THE first prosecution under the new Medical Practitioners Amendment Act took place at the Central Court, Sydney, on Dec. 28th, 1900, when Charles Saunders was charged that, "not being a legally qualified medical practitioner within the meaning of the Medical Practitioners Act, 1898, or entitled to be registered as a legally qualified medical practitioner within the meaning of the Medical Practitioners Amendment Act, 1900, he did on Dec. 12th use the title 'Doctor,' implying that he was a legally qualified medical practitioner." The proceedings were taken by the police and conducted by the Crown law officers. Evidence was given that suspended from the balcony of defendant's residence in Pitt-street, Sydney, was a lamp with "Dr. Saunders" printed on it, and on the window was printed, "Advice and medicine free." The defendant was not registered and he admitted that he intended the letters "Dr." to mean "doctor," though he was merely a chemist. He was fined £50 and costs with the alternative of a month's imprisonment.—The Council of the New South Wales Branch of the British Medical Association has passed the following resolution with reference to Mr. Meagher, M.P., who took charge of the Medical Act in the Legislative Assembly:—

The council desires to convey to you its high appreciation of your endeavour to improve the legislation governing the relations between the medical profession and the public.

Election of Dr. James Graham as Mayor of Sydney.

On Dec. 13th, 1900, was held the first meeting of the new council of the city of Sydney and one of its first acts was to elect Dr. James Graham as mayor. The Sydney City Council has of late come in for very searching criticism for its lax conduct, especially of the financial and sanitary affairs of the city. A party of reform was instituted which took active measures when the plague broke out, a vigilance committee being appointed to inquire into sanitary defects. Dr. Graham took a very leading part in this reform movement and was chairman of the vigilance committee. In this capacity he gave a great deal of time and labour to the work and roused the civic authorities out of their lethargy. The value of his services to the community in this respect can hardly be over-estimated and it is gratifying to find that they have been rewarded. The new mayor promises to do his utmost for the reorganisation of the health department of the city. The medical officer of health of Sydney will in future be required to give his whole time to the duties of his office with a reorganised and enlarged staff of competent inspectors. The new mayor will also endeavour to conduct the business of the council on more orderly lines and to have the exact financial position of the city made clear. The past career of Dr. Graham both in the profession and in public life is a warrant that he will be successful in carrying out the proposed and necessary reforms. He is a native of Edinburgh and is 44 years of age. He graduated as M.A. and M.D. at

Edinburgh, gaining the gold medal for his thesis on "Hydatid Disease in Australia." He was for some years medical superintendent of the Prince Alfred Hospital and was also on the honorary staff. He is now a director both of the Prince Alfred Hospital and the Sydney Hospital and was the founder of the Women's Hospital. For seven years he has been the Parliamentary representative of the Belmore electorate in the Legislative Assembly. He entered the city council two years ago and, as stated, from the first he was the leader of the Reform party. In his profession he has been very successful and is very popular. His election as mayor has given great satisfaction to the medical profession.

The Sydney and Suburban Provident Medical Association.

Rule 24 of the Sydney and Suburban Provident Medical Association is to the effect that "a general meeting of the profession shall be held once a year to receive a report on the working of the association." Such a meeting was recently held, Dr. P. Sydney Jones presiding. The report showed that the association had met with a fair measure of success and that the working expenses were about 17 per cent. This was a little higher than those of the similar association at Eastbourne, but the large area embraced by the Sydney association increased the cost of working.

Experiences of Australian Surgeons in the South African War.

The Australian surgeons who went to South Africa either as consultants or with the various contingents are now returning and describing their experiences. In the *Intercolonial Medical Journal of Australasia* for December appear two papers, one by Sir T. N. Fitz-Gerald, who went from Melbourne as consulting surgeon, and the other by Mr. A. Honman, medical officer in charge of the second Victorian contingent. Sir T. Fitz-Gerald was appointed to inspect Natal and he gives an account, necessarily brief, of the military hospitals there—at Pietermaritzburg, Mooi river, Estcourt, Ladysmith, and Newcastle. He speaks in the highest terms of the work done both by the Royal Army Medical Corps and the army nursing service, but he says that the instruments supplied to the various hospitals were of a very obsolete kind and reminded him of the antiquated cases provided by economising governments for the emigration service 50 years ago. The only exception was the x ray apparatus, which was complete and very successfully used, though in many cases the results obtained by it in locating bullets were misleading. He narrates several interesting cases that came under his observation. He found generally that wounds healed much better at the camp than at the base hospital, that there was not much difference between the effects of the Mauser bullet at long and short ranges, and that the wounds of entry and exit gave little information as to the extent of the injury. The amount of splintering of bone probably depended upon the angle at which it was struck or was due to an expanding bullet, the apex of which had been purposely divided. Mr. Honman also discusses in some detail the effects of the Mauser bullet at different ranges and quotes a number of cases to show the extreme diversity of the nature of the injuries inflicted, especially on bones. The chief impression left was "that however shattered a bone may be it may marvellously recover" and that the conclusions as to the effects of bullets derived from experiments on dead bodies had not been borne out by actual results. As a regimental surgeon whose duty it was to follow on with the troops he had not much opportunity of watching the progress of wounds, but of those he did see few went wrong. The first-aid dressing that every soldier carried with him, gauze, gauze tissue, and jaconette, was sufficient for most cases, and it was astonishing how quickly wounds healed and how soon wounded men rejoined their regiments. Dr. A. MacCormick of Sydney, who went with the New South Wales Army Corps, has just returned. He accompanied the troops *viâ* Stormberg to Bloemfontein, where the corps was divided and Dr. MacCormick with half a company joined the troops under Ian Hamilton *viâ* Kroonstad and Lindley to Heilbron and then to Pretoria and Diamond Hills. He was several times under fire, but he says that enteric fever was far more disastrous to the troops than was the enemy. Major Fiaschi, who was with the New South Wales Army Medical Corps No. 1 Field Hospital, has also returned to Sydney and speaks in the highest praise of the men of his corps, who have been nearly all the time under fire since they arrived at the front twelve months ago. The corps was first sent to the Orange river and then accompanied Lord Roberts's column up to the Modder, Jacobsdal, and Paardeberg. They were present at the storming of Cronje's laager and at the battles of Poplar Grove and Abram's Kraal. They were in the advances on Johannesburg and Pretoria, then to Middleburg, where they got the worst cases from General Buller. Finally they accompanied General Hutton to Kaafsche Hoof and then retired to Heidelberg. Major Fiaschi considered the New South Wales Field Hospital as good as any in the war, but its equipment was not sufficient and the military orders want remodelling. If the surgeons had not taken their own instruments with them many an operation would have been unsuccessful or impossible. Major Fiaschi was personally complimented by Lord Roberts at Bloemfontein, and General French spoke in warm eulogy of the services of the New South Wales Army Corps.

Perigastric Adhesions.

Mr. Fred. D. Bird contributes a long and interesting paper to the *Intercolonial Medical Journal* for December on the subject of Perigastric Adhesions, dealing, not with the denser forms to which attention has been drawn by others, but to very slight forms which are apt to be overlooked in an operation unless the operator specifically searches for them. Some are secondary to healed gastric ulcer, but most, he believes, are in the neighbourhood of the bile-ducts, due to a cholangitis from bacterial infection. The adhesions are not dense and widespread but thin and wiry. The main symptom is epigastric pain, started or increased by food and not relieved by medical treatment. Mr. Bird quotes a number of cases in support of his views.

Successful Suturing of the Ends of a Destroyed Median Nerve to the Ulnar Nerve.

In the same number of the *Intercolonial Medical Journal* Dr. W. Moore records a very interesting case. A boy aged 14 years was admitted to the Melbourne Hospital suffering from a gunshot wound of the forearm which exposed the flexor muscles, while the median nerve was seen as a dark cord on the wound surface and sensation in the fingers supplied by it was completely gone. Ten days after the injury four inches of the exposed nerve separated as a slough. Five weeks after the injury, when the wound was a uniform granulating surface, an operation was undertaken for the repair of the nerve. The two ends of the median nerve were dissected free and the ulnar nerve was then exposed at the wrist and at the upper part of the forearm. The divided ends of the median nerve were freshened, the sheath of the ulnar nerve was opened opposite them, and the ends of the median were attached to the ulnar by fine catgut passing through the whole thickness of the median and through a few fibres of the ulnar, and by catgut sutures bringing the sheaths of the nerves into accurate apposition. The surface of the wound was covered by a skin flap from the upper abdomen against which the arm was fixed. A month later the wound was soundly healed and sensation had returned in the parts of the hand supplied by the median.

Jan. 10th.

Obituary.

LESLIE OGILVIE, B.Sc., M.B. EDIN., M.R.C.P. LOND.

THE death of Dr. Leslie Ogilvie, which took place at his house in Welbeck-street on the evening of Feb. 2nd, must have come as a painful shock to his numerous friends, many of whom had seen him apparently as strong and vigorous as usual only a few days before. He first became ill on the morning of Sunday, Jan. 27th, and symptoms of pneumonia of a peculiarly sthenic type soon became manifest. It was no doubt on account of his fine bodily health and his strong constitution that he was able to maintain the fight against the disease as long as he did.

Leslie Ogilvie was born in Glasgow in 1853, the son of a man remarkable even in Glasgow for his energy and enterprise and no less for his high standard of business rectitude. He was educated at Gilbertfield House, Hamilton, and at the High School of Glasgow, and he went to Edinburgh University in 1868. He was keenly interested in natural science and at first devoted himself to this and took his B.Sc. degree. He was particularly fascinated by geology, then taught in Edinburgh by Mr., now Sir, Archibald Geikie, his favourite professor, and ever since a most cordial friend. Like so

many men who, in those days especially, went to Edinburgh with other views, he was caught in the vortex of medical interests and drawn into the curriculum. He took excellent places in his classes and during one session he acted as prosector in anatomy to Professor (now Sir William) Turner. Still maintaining his interest in natural history he also at this time dissected a shark to illustrate Professor Turner's monograph on the Elasmobranch fishes. After taking his medical degree in 1876 he studied in Paris for a time but returned to Scotland to act as locum tenens for Dr. David Stirling of Perth, one of the best known and most highly esteemed practitioners in Scotland. He afterwards went abroad for two years, studying in Vienna and elsewhere, acquiring a good knowledge of French, German, and Italian, languages from which he subsequently derived much literary pleasure. He came to London in 1879 and commenced practice. Very soon after his arrival he, along with Dr. G. L. Laycock, Dr. Colcott Fox, and others, became interested in a somewhat languishing dispensary then known as the Bell-street Dispensary for Children. Thanks to their combined labours it soon became so much appreciated that it seemed justifiable to associate beds with the out-patients' work and it was converted into a hospital, the now well-known Paddington-green Children's Hospital, of which he was senior physician at the time of his death. For many years he devoted much time and energy to his work here, and those who knew his cordial and genial manner will understand how much his work was valued both by patients and colleagues. Latterly his chief interest was in insurance work. He was medical referee to the Standard and Scottish Life Companies and a paper read by him a few years ago before the Edinburgh Society of Actuaries is one of the most thoughtful and important contributions to the medical aspects of life insurance in recent years. He became M.R.C.P. in 1889, and two years ago was elected a member of the Athenæum Club. His social gifts imposed many duties upon him. For nearly 15 years he was a most popular secretary of the Edinburgh University Club of London, and he was for several years President of the Burns Club. He was married a few years ago and leaves a widow and three children.

Such was Leslie Ogilvie's career as it appeared to the public. To a large circle of friends, however, he was much more than such a bare outline would seem to indicate. His was one of those rare fine natures which attract to themselves the devoted affection, one might almost say the love, of those who know them well. It was not only that he was genial, kind-hearted, and open-handed almost to a fault, but he possessed also that singular personal attractiveness which attached to him in a peculiarly close way those who knew him well and induced mere acquaintances to enrol themselves in the ranks of his friends. He was fond of music and literature, especially poetry, and he had a peculiarly fine literary instinct which a busy life left him too little opportunity of exercising. He was also fond of outdoor amusements; for many years he was an ardent member of the London Scottish, and up till the last a keen and good golfer. Such are but a few of the facets of a many-sided and lovable nature. His death will be deeply mourned by many who knew him only slightly; to those who knew him well it is nothing less than an irreparable calamity.

Medical News.

ROYAL COLLEGE OF SURGEONS IN IRELAND: EXAMINATION FOR REGISTERED PRACTITIONERS.—Mr. Thomas Blanchard Sellors, L.S.A. Lond., having passed the necessary examination has been admitted a Licentiate in Surgery of the College.

METHODS OF VACCINATION.—At the meeting of the Devonport Board of Guardians held on Feb. 4th it was decided, upon the suggestion of the Vaccination Committee, to draw the attention of the Local Government Board to the fact that a private medical practitioner might legally vaccinate a person in one place only and certify that such person had been successfully vaccinated, whereas a public vaccinator must vaccinate in four places. The guardians consider that a child ought to be vaccinated in more places than one, and they therefore urge the Local Government Board to endeavour to get the law altered.

BATH ROYAL UNITED HOSPITAL.—Through the liberality of two members of the committee of this hospital a bacteriological laboratory has been added to the institution.

FROM a return presented at the last meeting of the Leicester Board of Guardians it appears that during the year 1900 there were 446 cases of successful primary vaccination in the borough as against 219 for the year 1899.

MEDICAL SERVICES APPRECIATED.—At a meeting held on Feb. 7th of the Stratford-on-Avon Board of Guardians, Mr. C. Couchman (the vice-chairman) proposed a motion, which was unanimously adopted, tendering grateful thanks to Mr. James Arthur, M.R.C.S., on his resigning the post of medical officer and public vaccinator of the Wootton Wawen district of the union, after 35 years' efficient performance of the duties attached to the office.

A HANDSOME BEQUEST.—Probate has been granted in the Gloucester Registry of the will of the late Mr. John William Ormond Howes, a retired Cheltenham tradesman, who died about a month ago and whose estate has been proved at just under £14,800. After payment of personal bequests to the executors, solicitor, and housekeeper, amounting to £1200, the residue is bequeathed to the Cheltenham General Hospital, which will receive the net sum, after payment of legacy duty, of about £11,500.

UNIVERSITY OF CAMBRIDGE.—Dr. A. W. Ward, Master of Peterhouse, has been elected a member of the council of the Senate.—Professor A. Macalister has been appointed an elector to the chair of Chemistry, Professor Newton an elector to the chair of Anatomy, Professor R. Liveing an elector to the Downing chair of Medicine, Dr. F. Darwin an elector to the chair of Zoology and Comparative Anatomy, Dr. Pye-Smith an elector to the chair of Physiology, Dr. D. MacAlister an elector to the chairs of Surgery and of Agriculture, and Professor Allbutt an elector to the chair of Pathology.—Mr. Clinton T. Dent has been appointed an Examiner in Surgery in the place of Professor Chiene, resigned.—Caius College will elect to a Shuttleworth Scholarship in Botany and Comparative Anatomy, value £55 per annum for three years, next March. Candidates must be medical students of the University of at least eight terms' standing. Applications are to be sent to the senior tutor before March 2nd.—At the congregation on Feb. 14th, Mr. E. S. Verdon, M.A., M.B. Cantab., was admitted to the degree of M.D. *in absentiâ*. Dr. Verdon is resident at the Court of Morocco.

LEICESTER BOROUGH ASYLUM: OPENING OF NEW BUILDINGS.—On Feb. 8th the extensive new buildings of the Leicester Borough Asylum, which, exclusive of the land, have been erected and furnished at a cost of £94,743, were formally opened. The extension, which is to the east of the old buildings and comprises a complete asylum for males, provides accommodation for 335 patients. The total number of beds now provided in the whole institution is 855, which is greatly in excess of the present requirements of the borough. In the meantime the surplus accommodation will be used by outside patients and will, it is hoped, prove to be a source of revenue to the institution. From an exterior point of view the new extension presents no striking features, the severe red brick being relieved by a dressing of stone only. The wards have been arranged in blocks in echelon, but as a continuous building, with a main corridor in the rear, giving a separate approach to each ward. The formation of the site, which slopes considerably to the south, made this arrangement necessary, and as a result the whole of the wards face the south and receive much more sunshine than would otherwise be the case. The wards have a bright and cheery appearance and are lofty, well lighted, well ventilated, and comfortably furnished. The recreation hall, in which a weekly entertainment will be given to the inmates, is a very fine building with a stage at one end and dressing and property rooms and other accessories for theatrical performances. The administrative buildings have been excellently arranged and include a spacious and handsome committee-room. The whole of the buildings are heated by steam on the most approved principle and electrically lighted throughout, the total cost of the installation for the latter being no less than £4000. The buildings are also fitted with fire-alarms, and by a most ingenious tell-tale clock the superintendent will be able to

see at what hour the wards and dormitories are visited by the attendants, each visit being automatically registered by the clock. The plans for the extension were prepared by Mr. Hine of London, consulting architect to His Majesty's Commissioners in Lunacy, and Messrs. Moss and Sons, Limited, of Loughborough, secured the building contract, the work being commenced in the autumn of 1897. The old asylum, with its administrative block, was built to accommodate between 300 and 400 patients, and that the institution has not been extended much too soon is evidenced by the fact that the number of patients is now no less than 576. The opening ceremony was performed by Alderman Dr. Clifton, the chairman of the asylum committee, in the presence of the mayor and corporation and representatives of the local public bodies.

BOOKS, ETC., RECEIVED.

ALLEN, GEORGE, Charing-cross-road, London.
Helwân and the Egyptian Desert. By W. Page May, M.D., B.Sc., M.R.C.P. Price 3s.

BAILLIÈRE ET FILS, Paris.
L'Avortement. By P. Brouardel. Price 7 francs 50 cents.

BAILLIÈRE, TINDALL, AND COX, King William-street, Strand, and Henrietta-street, Strand, London.
The Asphyxial Factor in Anæsthesia, and other Essays. By H. Bellamy Gardner, M.R.C.S. Eng., L.R.C.P. Lond. Price 3s. net.
Mock-Nurses of the Latest Fashion, A.D. 1901. By F. J. Gant, F.R.C.S. Second edition. Price 3s. 6d. net.
The Practical Guide to the Public Health Acts. By T. W. Hime, B.A., M.D. Second edition. Price 15s. net.
Physical Diagnosis of Diseases of the Chest. By Richard C. Cabot, M.D. Price 10s. 6d. net.

BAUERMEISTER, Glasgow.
Grenzfragen des Nerven- und Seelenlebens. VI.-VII.: Über Wahnideen im Völkerleben. By Dr. M. Friedmann. Price 2s. 3d. VIII.: Über den Traum. By Dr. Sigm. Freud. Price 1s. 3d.
Atlas der Nasenkrankheiten. Lieferungen Dritte und Vierte. Price 6s. each.

CASSELL AND CO., London.
Difficult Labour. By G. Ernest Herman, M.B. Lond., L.R.C.P New and revised edition. Price 12s. 6d.

CHURCHILL, J. & A., Great Marlborough-street, London.
Diet and Food Considered in Relation to Strength and Power of Endurance, Training, and Athletics. By Alexander Haig, M.D. Oxon., F.R.C.P. Third edition. Price 2s.

DAVIS COMPANY, Philadelphia, New York, and Chicago.
A Practical Treatise on Materia Medica and Therapeutica. By John V. Shoemaker, M.D., LL.D. Fifth edition. Price 16s. net.

FOWLER AND CO., Imperial-arcade, Ludgate-circus, London.
Perfect Health: How to Get It and How to Keep It. By One Who Has It. Price 2s. 6d. net.

GEORGI, ARTHUR, Leipsic.
Die Therapie beim engen Becken. By Dr. B. Krönig.

HUTCHINSON AND CO, Paternoster-row, London.
Disciples of Æsculapius. By Sir Benjamin Ward Richardson, M.D. F.R.S. With a Life of the Author by his Daughter, Mrs. George Martin. In two volumes. Price 36s.

KIMPTON, HENRY, Furnival-street, London.
A Manual of Otology. By Gorham Bacon, A.B., M.D. With an Introductory Chapter by Clarence John Blake, M.D. Second edition, revised and enlarged. Price 10s. 6d. net.
A Treatise on Mental Diseases. By Henry J. Berkley, M.D. Price 21s. net.
A Practical Treatise on Medical Diagnosis. By John H. Musser, M.D. Fourth edition, revised and enlarged. Price 28s. net.
A Practical Treatise on Genito-Urinary and Venereal Disease and Syphilis. By Robert W. Taylor, A.M., M.D. Second edition, thoroughly revised. Price 25s. net.

LEHMANN, J. F., München.
Atlas und Grundriss der Pathologischen Anatomie. II. Band. Harnapparat, Geschlechtsorgane, Nervensystem, Knochen, Gelenke. By Dr. O. Bollinger. Price 12 marks.
Atlas und Grundriss der Speciellen Pathologischen Histologie. II. Band. Leber, Harnorgane, Geschlechtsorgane, Nervensystem, Haut, Muskeln, Knochen. By Dr. Hermann Dürck. Price 11 marks.
Atlas und Grundriss der Traumatischen Frakturen und Luxationen. By Dr. H. Helferich. Price 12 marks.
Atlas und Grundriss der Orthopädischen Chirurgie für Studierende und Aertze. By Dr. A. Lüning und Dr. W. Schulthess. Price 16 marks.

LIPPINCOTT COMPANY, London and Philadelphia.
Photographic Atlas of the Diseases of the Skin. Parts I., II., and III. By George Henry Fox, A.M., M.D. Price 6s. each part net.

MALOINE, Rue de l'École de Médecine, Paris.
La Surdi-Mutité. By Etienne Saint-Hilaire.

MURRAY, JOHN, Albemarle-street, London.
Comparative Physiology of the Brain and Comparative Psychology. By Jacques Loeb, M.D. Price 6s.

NEW SYDENHAM SOCIETY, London.
The Fundamental Data of Modern Pathology: History, Criticisms, Comparisons, Applications. By Dr. Achille Monti. Translated by John Joseph Eyre, M.R.C.P., L.R.C.S.I., D.P.H. Camb.

PUTNAM'S SONS, London and New York.
The Laws of Scientific Hand-reading: a Practical Treatise on the Art commonly called Palmistry. By William G. Benham. Price 18s.

REBMAN, LIMITED, Shaftesbury-avenue, London.
A Dictionary of Medicine and the Allied Sciences. By Alexander Duane, M.D. Third edition, enlarged and revised. Price 14s. net.
Normal Histology. By Edward K. Dunham, Ph.B., M.D. Second edition. Price 12s. net.
The Practice of Medicine. By James Tyson, M.D. Second edition. Price 24s. net.
Laryngeal Phthisis; or, Consumption of the Throat. By Richard Lake, F.R.C.S. Price 7s. 6d. net.

SAUNDERS, W. B., AND CO., Strand, London, and Philadelphia.
The International Text-book of Surgery, by American and British Authors. Edited by J. Collins Warren, M.D., LL.D., and A. Pearce Gould, M.S., F.R.C.S. In two volumes. Price 42s. net.
The American Illustrated Medical Dictionary. By W. A. Newman Dorland, A.M., M.D. Price 19s. net.
A Text-book of Obstetrics. By Barton Cooke Hirst, M.D. Second edition. Price 21s. net.
A Text-book of the Diseases of the Nose and Throat. By D. Braden Kyle, M.D. Second edition. Price 17s. net.
Atlas and Epitome of Special Pathologic Histology. By Dr. Hermann Dürck. Edited by Dr. Ludvig Hektoen. Price 13s. net.
A Text-book of the Practice of Medicine. By James M. Anders, M.D., Ph.D., LL.D. Fourth edition, revised. Price 24s. net.

SCIENTIFIC PRESS, LIMITED, Southampton-street, Strand, London.
The Nursing Profession: How and Where to Train. By Sir Henry Burdett, K.C.B. Price 2s. net.

SIMPKIN, MARSHALL, AND CO., London.
Practical Household Cookery Recipes. By A. M. Westcott, L.C.A. Price 1s. net.

URBAN AND SCHWARZENBERG, Berlin and Wien.
Functionelle Nierendiagnostik, mit besonderer Berücksichtigung der Nierenchirurgie. By Dr. Leopold Casper and Dr. Paul Friedrich Richter. Price 4 marks.

VIRTUE AND CO., Ivy-lane, London.
The Convalescent's Diet: How to Provide and Prepare It. By Lucy Helen Yates. Price 1s.

VOGEL, F. C. W., Leipsic.
Lehrbuch der Physiologie des Menschen. Erster Band. Sinne, Nerven, Muskeln, Fortpflanrung in Achtundzwanzig Vorträgen. By G. von Bunge. Price 10 marks.

WILLIAMS AND NORGATE, London, Edinburgh, and Oxford.
A Topographical Atlas of the Spinal Cord. By Alexander Bruce, M.A., M.D., F.R.C.P.E., F.R.S.E. Price 42s. net.

WILSON, EFFINGHAM, Royal Exchange, London.
Cordingley's Guide to the Stock Exchange. By W. G. Cordingley, Price 2s. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

ANNIS, E. G., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer of Health for the Borough of Huddersfield.

APTHOMAS, G., M.B., M.C., has been re-appointed Ophthalmic Surgeon to the Oldham Infirmary, and has also been re-appointed Ophthalmic Surgeon to the Workhouse Infirmary, Oldham.

AWDRY, WALTER ROBERT, M.B. Durh., M.R.C.S., has been appointed Honorary Surgeon to the Berkeley (Gloucestershire) Hospital.

BATTEN, RAYMOND WINTERBOTHAM, M.D., F.R.C.P. Lond., M.R.C.S., J.P., has been appointed Consulting Physician to the Berkeley (Gloucestershire) Hospital.

BEACHCROFT, F. S., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Petworth District of Sussex.

BRODRICK, CHARLES CUMBERLAND, L.R.C.P., L.R.C.S., L.M. Edin., has been re-appointed Medical Officer and Public Vaccinator for the Whitchurch and South Lydford Districts of the Tavistock Union.

BROWN, R. K., M.B., B.Ch. Irel., D.P.H., has been appointed Medical Officer of Health for the Borough of Bermondsey.

BROWN, WARBURTON, L.R.C.P., M.R.C.S., L.D.S., has been appointed Junior Dental Surgeon to the Seamen's Hospital Society, Greenwich, S.E.

CAMMIDGE, P. J., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Bacteriologist on the staff of the County Medical Officer for the West Riding of Yorkshire.

COLE-BAKER, LYSTER, B.A. Dub., M.D., B.Ch., has been appointed Honorary Assistant Physician to the Royal Portsmouth Hospital.

COMPTON, M. W., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Keyingham District of the East Riding of York.

CROCKER, J. HEDLEY, M.D. Vict., D.P.H., has been appointed Medical Officer of Health of Richmond, Surrey.

DINGWALL, A., M.B., Ch.M. Aberd., has been appointed Certifying Surgeon under the Factory Acts for the Presteigne District of the County of Radnor.

DUCKWORTH, SIR DYCE, M.D., F.R.C.P. Lond., has been appointed Consulting Physician to the Italian Hospital, Queen-square, London.

ELDER, GEORGE, M.D. Glasg., has been appointed Consulting Surgeon to the Samaritan Hospital for Women, Nottingham.

ENSOR, C. A., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Tisbury District of Wilts.

FLETCHER, JAMES, M.B., C.M. Aberd., D.P.H., has been appointed Resident Medical Officer to the City Fever Hospital, Ham Green, near Bristol, vice F. P. Mackie, resigned.

FORD, ROSA, M.B. Lond., has been appointed Resident Medical Officer to the York Dispensary.

FOWLER, E. G., M.R.C.S., L.R.C.P., has been appointed House Physician at the Leeds General Infirmary.

GOADBY, KENNETH W., M.R.C.S., L.R.C.P., L.D.S. Eng., has been appointed Senior Dental Surgeon to the Seamen's Hospitals, London.

HANDLEY, W. SAMPSON, M.S., M.D. Lond., F.R.C.S. Eng., has been appointed Surgeon to Out-patients at the Samaritan Free Hospital for Women and Children, Marylebone-road, N.W.

HODGSON, J. F., M.B., Ch.B. Vict., has been appointed, Senior House Surgeon to the Oldham Infirmary.

JOHNSTON, L. A. W., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant Medical Officer to the City Fever Hospital, Lodge-road, Birmingham.

SCOTT, D. WOLSELEY, L.R.C.P., L.R.C.S. Edin., L.F.P. & S. Glasg., has been appointed Medical Officer to the Hendreforgan and other collieries, Guys, near Swansea.

SOUTH, P. C., M.D. Glasg., D.P.H. Camb., has been re-appointed Medical Officer of Health for the Borough of Wandsworth.

STENHOUSE, J. W., M.B., C.M. Edin., L.R.C.P. Lond., M.R.C.S., has been appointed Surgeon-in-ordinary to Henshaw's Blind Asylum, Old Trafford.

WILLIAMS, THOS., L.R.C.P., L.R.C.S. Irel., has been appointed Certifying Surgeon under the Factory Acts for the Masham District of the North Riding of York.

WORGER, RICHARD GEORGE, L.R.C.P. Lond., L.S.A., M.R.C.S., has been appointed Medical Officer for the Kilmersdon District of the Frome Union, vice T. H. Worger, resigned.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Senior House Surgeon. Salary £65 per annum. Also Junior House Surgeon. Salary £60 per annum, with board, lodgings, and attendance.

BIRMINGHAM AND MIDLAND FREE HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer. Salary £60, with board, washing, and attendance.

BOROUGH HOSPITAL, BIRKENHEAD.—Senior and also Junior Resident House Surgeon. Salary £100 and £80 respectively per annum, with board and washing.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—Two House Surgeons. Salary £160 per annum, with coals, gas, apartments, washing, and attendance.

BRISTOL ROYAL INFIRMARY.—Resident Obstetric Officer. Salary £40 per annum, with board, lodging, and washing.

COUNTY ASYLUM, Whittingham, Lancashire.—Senior Assistant Medical Officer. Salary £225 per annum, rising to £250 at the end of 12 months, with board, lodging, washing, and attendance.

DISTRICT INFIRMARY, Ashton-under-Lyne.—House Surgeon. Salary £100 a year and board and lodging.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Surgeon. Board, residence, &c., and honorarium of £25 after completion of six months' approved service. Also Casualty Medical Officer for six months, renewable. Salary at the rate of £100 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark-bridge-road, S.E.—Junior Resident Medical Officer and Registrar. Salary £50, with board and washing.

GUILDFORD, GODALMING, AND WOKING JOINT HOSPITAL BOARD.—Medical Officer for the Isolation Hospital at Woodbridge, Guildford. Salary £175 per annum.

GUILDFORD RURAL DISTRICT COUNCIL.—Medical Officer of Health. Salary £250 per annum, which will include travelling and all other expenses.

HEIGHAM HALL ASYLUM, Norwich.—Assistant Medical Officer.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—Two House Physicians, unmarried, for six months and nine months respectively. Salary £20, with board and residence in the hospital.

HULL ROYAL INFIRMARY.—Junior Assistant House Surgeon. Salary £40, with board and lodging.

ISLANDS OF SANDAY AND NORTH RONALDSHAY.—Resident Medical Officer. Salary £80 per annum, with dwelling-house, offices, garden, and ten acres of ground, subject to annual rent of £22.

KENT COUNTY ASYLUM, Barming Heath, Maidstone.—Fourth Assistant Medical Officer and Pathologist. Salary £175 per annum (rising £5 a year), with furnished quarters, attendance, coal, gas, garden produce, and washing.

KING'S COLLEGE, LONDON.—Sambrook Surgical Registrarship (open to King's College students only).

LAMBETH INFIRMARY, Brook-street, Kennington-road, S.E.—Second Assistant Medical Officer for six months. Salary at the rate of £80 per annum, with board, lodging, and washing.

LIVERPOOL INFIRMARY FOR CHILDREN, Myrtle-street.—House Surgeon. Salary £85 per annum, with board and lodging.

LIVERPOOL STANLEY HOSPITAL.—Senior House Surgeon. Salary £80 per annum, with board, residence, and washing.

MANCHESTER CLINICAL HOSPITAL FOR WOMEN AND CHILDREN, Cheetham Hill-road.—Honorary Physician for Diseases of Children.

METROPOLITAN BOROUGH OF BERMONDSEY.—Analyst.

NORTH RIDING ASYLUM, Clifton, York.—Assistant Medical Officer, not more than 30 years of age. Salary commencing at £125, rising to £175, and £10 in lieu of liquor, with board, lodging, washing, and attendance.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Salary £140 per annum, all found except board.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Physician. Salary £100, with board, lodging, and washing. Also Assistant House Surgeon. Salary £100 per annum, with board, lodging, and washing.

OWENS COLLEGE, Manchester.—Junior Assistant to the Professor of Obstetrics and Gynæcology.

ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN, Dyke-road, Brighton.—House Surgeon. Salary £80, with board, lodging, and washing.

ROYAL PIMLICO DISPENSARY, Buckingham Palace-road.—Resident Medical Officer and Secretary. Salary £100 and house.

ROYAL SEA-BATHING HOSPITAL, Margate.—Assistant Resident Surgeon. Salary £60 per annum, with board and residence.

ST. PANCRAS AND NORTHERN DISPENSARY, 126, Euston-road.—Resident Medical Officer. Salary £105 per year, with residence and attendance.

SALFORD ROYAL HOSPITAL.—House Surgeon, salary £100 per annum; also House Physician, salary £80 per annum; also Junior House Surgeon, salary £70 per annum, with board and residence in each case.

SHEFFIELD ROYAL INFIRMARY.—House Surgeon. Salary £120 per annum, with board, lodging, and washing, with an advance of £10 for the second and third years.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies as Certifying Surgeons under the Factory Acts at Rawtenstall, in the County of Lancaster, and at Kirkpatrick Durham, in the County of Kirkcudbright.

TOWNSHIP OF MANCHESTER.—Visiting Surgeon for Workhouse Infirmary at Crumpsall. Salary £160 per annum.

WARNEFORD ASYLUM, Oxford.—Assistant Medical Officer, unmarried. Salary £100 a year, with board, lodging, and washing.

WARRINGTON INFIRMARY AND DISPENSARY.—Senior Resident House Surgeon, unmarried. Salary £120 per annum, with furnished residence and board.

WEST BROMWICH DISTRICT HOSPITAL. — Resident Junior House Surgeon. Salary £50 per annum, with board, lodgings, washing, and attendance.

WEST KENT GENERAL HOSPITAL, Maidstone.—Honorary Surgeon.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House Physician for six months. Honorarium at the rate of £75 per annum and board, lodging, and washing.

WOOLWICH INFIRMARY.—Assistant Medical Officer (single, not over 30 years of age). Salary £150 per annum, with apartments, rations, and washing.

YORK COUNTY HOSPITAL.—Resident Assistant House Surgeon. Salary £60 per annum, with board, attendance and washing.

Births, Marriages, and Deaths.

BIRTHS.

HEWLETT.—On Feb. 7th, at Lyddon House, Southfields, S.W., the wife of R. Tanner Hewlett, M.D., M.R.C.P., of a son.

KENT.—On Feb. 11th, at Holland House, Paignton, S. Devon, the wife of R. T. Kent, M.A. Oxon., F.R.C.S., of a son.

REID.—On Feb. 5th, at Broc Hill, Milford, Stafford, the wife of George Reid, M.D., of a son.

VOELCKER.—On Feb. 9th, at Harley-street, the wife of Arthur Francis Voelcker, M.D., F.R.C.P., of a son.

MARRIAGES.

ROBERTSON—HOLL—On Feb. 7th, at St. Alban's, Acton-green, on Jan. 31st, by Rev. Bernard Spink, W. J. Robertson, M.R.C.S. Eng., L.R.C.P. Lond., eldest son of W. Robertson, M.D., of Glanton House, Northumberland, to Theodora, eldest daughter of W. J. Holloway, Esq., of Mia Gunyah, Bedford Park, W. No cards.

TALBOT—GIBSON.—On Feb. 6th, at St. George's, Bloomsbury, Alfred George Talbot, M.B., M.S. Edin., of Richmond, Nelson, New Zealand, to Beatrice Esther, second daughter of Frederick Denhame Gibson of Christchurch, New Zealand.

WHITE—MEGRET.—On Feb. 12th, at the Roxburghe Hotel, Edinburgh, T. B. White, M.B. Edin., Moffat, to Constance, daughter of Adolphe Mégret, No. 68, Rue de Grenelle, Paris.

DEATHS.

BARNETT.—On Feb. 6th, at The Brook House, Leominster, Herefordshire, Samuel Barnett, M.R.C.S., J.P., aged 80 years.

BAYLEY.—On Jan. 12th, at Johannesburg, Richard King Bayley, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., second son of W. H. Bayley, solicitor, Basingstoke, aged 30 years.

CULBARD.—On Feb. 9th, at Dunkeld, John C. Culbard, M.D., M.R.C.S.

JONES.—On Feb. 11th, at Sheep-street, Northampton, Arthur Henry Jones, M.D. Lond. aged 48 years.

RUGG.—On Monday, Feb. 11th, at Avenue Lodge, Wood Green, Baron Alfred Rugg, L.R.C.P. Lond., M.R.C.S., aged 53 years.

SCRATCHLEY.—On Feb. 6th, at Pelham House, Poole, Dorset, Henry William Scratchley, L.R.C.P., M.R.C.S., aged 38 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE FEES OF A MEDICAL WITNESS.

MR. JUSTICE RIDLEY allowed himself to speak in terms almost of stricture because a consultant medical man demanded 20 guineas for giving medical evidence. The witness explained that to attend the court was a serious inconvenience, and that evidence might well have been given by a practitioner whose time was, perhaps, not so valuable. Mr. Justice Ridley would find it difficult to explain why, in these circumstances, there was anything extortionate or even inconsiderate in the price fixed by the medical witness for his services. Practising barristers could tell his lordship stories of the fees demanded and exacted by experts in other provinces of art and science that would make the 20 guineas asked by the medical expert seem boundlessly moderate.

MEDICAL SUPERSTITIONS.

To the Editors of THE LANCET.

SIRS,—Could you or any of your readers recommend me a book to refer to for a popular lecture on medical superstitions? Thanking you in anticipation,

I am, Sirs, yours faithfully,

Feb. 11th, 1901. M.B. LOND.

*** We take it that our correspondent requires literature on superstitions connected with medicine. Almost any book on folk-lore will give him information on the subject—e.g., Henderson's "Folk Lore of the Northern Counties of England." Gould's "Anomalies and Curiosities of Medicine" will also help him, and a mine of wealth as to drugs and the medicinal properties of animals is to be found in "The History of Four-footed Beasts," by Topsell, a sixteenth-century writer. If our correspondent has time he might study the works of Sir Thomas Browne and Sir Kenelm Digby. Anti-vaccination literature will also be found fruitful, especially in its early days when it was stated that any child who was vaccinated developed horns and a tail. Perhaps some of our readers can suggest other works of reference.—ED. L.

A MISTAKE SOMEWHERE?

To the Editors of THE LANCET.

SIRS,—Surely the report of Lord Lister's speech at the York-road, Lambeth, Hospital as it appeared in the *Standard* cannot be correct. Speaking of certified midwives, he is credited with these words in *oratio obliqua*: "The inmates of that institution are far better off than the middle classes who had to trust to the 'general practitioner,' who hitherto had not, on the average, been persuaded of the enormous importance of antiseptic precautions."

I am, Sirs, yours faithfully,

Feb. 6th, 1901. H. W.

LANTERN SLIDES FOR THE PASSION PLAY.

To the Editors of THE LANCET.

SIRS,—Your correspondent "G. P.," who asks in THE LANCET of Feb. 9th, p. 444, where he can obtain slides, &c., for a lecture on the Oberammergau Passion Play, can purchase a lecture and hire slides from E. G. Wood, 1 and 2, Queen-street, Cheapside, E.C. The slides, however, illustrate only the performance of 1890, not that of 1900; slides of the latter are very expensive.

I am, Sirs, yours faithfully,

Feb. 8th, 1901. J. W. C.

"CHRONIC DIARRHŒA: SUGGESTIONS FOR TREATMENT DESIRED."

To the Editors of THE LANCET.

SIRS,—In reply to "Perplexed" the chronic diarrhœa may be due to want of complete evacuation of the bowels in an aged person. I suggest enemata of warm injections with oil and some turpentine twice or thrice a week. The diarrhœa may yield to the following: one and a half ounces of sulphate of magnesia and one ounce of sulphate of soda; mix, take a teaspoonful in half a tumbler of hot water every morning before breakfast. It might be well to explore the rectum.

I am, Sirs, yours faithfully,

Jan. 29th, 1901. LIEUTENANT-COLONEL, R.A.M.C.

H. M. W. D. writes:—I should be glad of suggestions as to cause and treatment in the following case. The patient, a lady, married, aged 40 years, no children, suffers from what she well describes as uncontrollable fidgets. The attacks come on every evening with more or less severity; the disturbance is in the lower limbs only and begins with pain and tingling; she is quite unable to keep the limbs quiet or sit still; the condition passes off during the night. The trouble has existed for some years, but is becoming much worse and is a source of distress to herself and friends. A sister and brother deceased were affected in the same way. The condition causes insomnia. The patient leads an active life, takes much exercise, and has good digestion. There is chronic constipation, which at one time occasioned a serious obstruction; there are slight varicose veins and many dilated venules on the legs. The slightest injury produces extensive ecchymosis. Is the condition due to toxic or mechanical effects of constipation? It is not relieved by ordinary laxatives. Or is it a nervous condition and beyond treatment?

Dr. H. J. Gardiner.—The question of medical certificates for a school board is a thorny one. For various points connected with the subject we would refer our correspondent to THE LANCET, vol. ii., 1895, pp. 48, 165, *et seq.*; to vol. i., 1896, pp. 1511, 1808, 1823; to vol ii., 1896, pp. 259, 330, *et seq.*; and to vol. i., 1897, p. 331. The chief points to be noted are these. A school board has no right to demand a medical certificate, but it has a right and a duty to see that children attend school. If the parents or guardians of the children cannot show a reasonable excuse the board can summon them and the magistrate can demand a certificate. The medical man can, if he likes, give a certificate gratis, or he may prefer to attend the police-court and give evidence on behalf of the child.

A. R. perceives, as no one can help perceiving, the possible awkwardness of the position. We strongly advise him to avoid the appearance of connexion with an unqualified dentist that must follow upon the use of a common room on the same premises. No enalty can follow if he can prove that he has clean hands, but why incur the chance of a complaint being made to the General Medical Council?

J. H. H.—1. In our opinion the whole club should subscribe for a medical man. The fact that many of the members belong to other clubs does not free them from the obligation of helping to support a medical man for the benefit of their fellow-members who do not belong to other clubs. 2. Not less than 1½*d.* per head per week.

Enquirer.—We have never heard of "Zox" powders. From the label it would seem that they are ordinary quack remedies advertised to cure all sorts of things of different origin. A specimen of the powders can be sent for analysis. 2. We do not know what "Tatcho" is or what claims are made for it in the advertisements.

Luson.—The graduate in question may be somewhat improperly described in the paper. But there is no reason to suppose that he wrote the paragraph himself, and the editor of a lay journal cannot be asked to observe the minutiæ of medical titles. Who, then, are we invited to put the blame upon?

M.R.C.S. (1).—The communication is founded upon a misreading of our article.

M.R.C.S. (2).—We will endeavour to be of assistance.

G. A. F. should disregard the matter entirely.

Ward should consult his medical man.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

WEDNESDAY (20th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.). Cancer (2 P.M.)

THURSDAY (21st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

FRIDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

SATURDAY (23rd).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (18th).—SOCIETY OF ARTS.—8 P.M. Mr. W. J. Pope: The Bearings of Geometry on the Chemistry of Fermentation. (Cantor Lecture.)

TUESDAY (19th).—PATHOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M. Dr. W. P. Herringham: On the Condition of the Renal Arterioles in Cases of Chronic Renal Disease (lantern demonstration).—Dr. A. G. Auld: Additional Remarks on the Toxins of the Pneumococcus.—Mr. R. Johnson: Congenital Atresia of the Vesical Orifice in One Ureter with Prolapse of its Dilated Extremity through the Urethra.—Dr. W. C. Bosanquet: Multiple Inflammation of Serous Membranes in Children. Card Specimens:—Mr. C. Keep: Pyronephrosis.—Mr. Drew: Double Renal Calculus.
CHELSEA CLINICAL SOCIETY (Holy Trinity Parish Hall, Pavilion-road, Sloane-square, S.W.).—8.30 P.M. Papers:—Mr. F. C. Abbott: Spinal Curvature and Physical Exercises (with demonstration).—Dr. C. J. Harrison: Acute Rheumatism of Childhood.

WEDNESDAY (20th).—ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.).—7.30 P.M. Mr. C. Beck: Exhibition of Bacteria and Blood Parasites.

THURSDAY (21st).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road, W.).—8.30 P.M. Clinical Evening.
CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M. Exhibition of Clinical Cases followed by discussion. Patients will be in attendance from 8 P.M. to 9 P.M.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (18th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. J. Pringle: Consultation. (Skin.)
ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Mr. W. Edmunds: The Pathology and Diseases of the Thyroid Gland. (Erasmus Wilson Lecture.)
ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. Mr. A. Willey: The Origin of Vertebrate Animals.
WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. Moullin: Gynæcological Cases.

TUESDAY (19th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. C. T. Williams: Consultation. (Medical).

WEDNESDAY (20th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—5 P.M. Clinical Lecture:—Sir J. B. Tuke: Insanity a Symptom of Organic Disease.
ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Mr. W. Edmunds: The Pathology and Diseases of the Thyroid Gland. (Erasmus Wilson Lecture.)
LONDON THROAT HOSPITAL (204, Gt. Portland-street, W.).—5 P.M. Dr. F. Potter: Hoarseness and Aphonia. (Post-graduate Course.)
HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—3 P.M. Dr. Fowler: The Treatment of Cardiac Failure in Aortic Regurgitation.

THURSDAY (21st).—CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Dr. D. Grant: Treatment of Nervous Disorders of the Pharynx and Larynx.
CHARING-CROSS HOSPITAL.—4 P.M. Dr. A. Routh: Gynæcological Demonstration. (Post-graduate Course.)
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—3 P.M. Dr. H. Low: Class. Roentgen Rays. 4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)
THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. F. E. Batten: Cerebral Diplegias in Children.
THE HOSPITAL FOR DISEASES OF THE SKIN (Stamford-street, Blackfriars).—3 P.M. Clinical Demonstration:—Dr. P. S. Abraham.
WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. C. B. Keetley: Surgery of the Joints.

FRIDAY (22nd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. R. Lake: Consultation. (Ear.)
ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Mr. W. Edmunds: The Pathology and Diseases of the Thyroid Gland. (Erasmus Wilson Lecture.)

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1900, which was completed with the issue of Dec. 29th, and the Title-page to the Volume were given in THE LANCET of Jan. 5th.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1900, bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers, cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 14th, 1901.

Date.	Barometer reduced to Sea Level and 32° F	Direction of Wind.	Rainfall	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb	Dry Bulb.	Remarks at 8.30 A.M.
Feb. 8	30·30	W.	...	49	43	35	35	36	Foggy
" 9	30·34	W.	...	50	43	36	39	40	Foggy
" 10	30·39	W.	...	52	42	39	40	42	Cloudy
" 11	30·28	N.E.	...	49	40	39	38	39	Overcast
" 12	30·25	NNW	...	61	40	28	28	30	Fine
" 13	30·19	N.	...	47	38	30	33	35	Overcast
" 14	30·49	S.	...	52	33	25	Fzn.	27	Foggy

During the week marked copies of the following newspapers have been received:—*West Hartlepool Guardian, Newcastle Daily Chronicle, North Star (Darlington), Leeds Mercury, Birmingham Daily Gazette, Dundee Advertiser, Bradford Observer, Yorkshire Post, Alliance News (Manchester), Vegetarian, Glasgow Herald, Manchester Guardian, Morning News (Plymouth), Scotsman, Liverpool Daily Post, Bristol Mercury, Times of India, Pioneer Mail, Herald of Wales, Citizen, Spalding Press, Surrey Comet, Builder, Architect, Evesham Standard, Hertfordshire Mercury, Mining Journal, Reading Mercury, City Press, Local Government Chronicle, Daily Express, Sanitary Record, Plumber and Decorator, Brighton Times, Railway Herald, Western Advertiser (Yeovil), Hastings and St. Leonards News, Surrey Advertiser, Local Government Journal, The Welshman, Middlesbrough Daily Gazette, Sussex Courier, Derby Express, Cornish Echo, Western Daily Mercury, West London Observer, Waterloc Herald, Worthing Observer, Dunfermline Journal, Perth Constitution, Christian World, &c., &c.*

Communications, Letters, &c., have been received from—

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B.—Dr. J. Burnet, Edinburgh; Messrs. Burroughs, Wellcome, and Co., Lond.; Bristol Royal Infirmary, Secretary of; British Medical Association, Lond.; Mr. F. D. N. Brown, Swanage; Messrs. Battley and Watts, Lond.; B. and M.; Dr. G. Brown, Colchester; Mr. H. R. Beale, Lond.; Dr. G. W. Bannatyne, Bath.

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A Clinical Lecture

ON

A QUIET EFFUSION INTO THE KNEE-JOINTS OCCURRING IN WOMEN AND YOUNG GIRLS.[1]

Delivered at St. George's Hospital

BY WILLIAM H. BENNETT, F.R.C.S. ENG.,

SENIOR SURGEON TO THE HOSPITAL; MEMBER OF THE COURT OF EXAMINERS, ROYAL COLLEGE OF SURGEONS OF ENGLAND, &C.

GENTLEMEN,—I am anxious to-day to call your attention to a very interesting condition of the knee-joint about which I do not think there is anything to be found in your text-books; it is, however, not uncommon, and as it is from a practical point of view of importance it is naturally worthy of some consideration. The condition is, so far as I can judge, one of passive effusion into the joint; it rarely occurs in any other joint than the knee, although I have seen it on one occasion in the ankle. The joints of the opposite sides are usually involved at the same time, but the effusion is, as a rule, much more marked on one side than on the other, that on the right side being generally the greater. There is rarely any pain unless some injury has been received; beyond a feeling sometimes of weakness there is nothing to attract attention to the matter—indeed, a considerable percentage of those who suffer from the complaint are unaware of its existence unless attention is called to it accidentally. It is limited to girls and women and is always associated with menstrual irregularity or uterine trouble. It occurs mainly at two periods of life—viz., at the time of puberty, when the catamenial affairs are establishing themselves, and at the climacteric time when menstruation begins to cease. It may, however, occur at any intermediate period if there is menorrhagia, excessive hæmorrhage from the uterus, or great irregularity and difficulty in connexion with the menstrual affairs.

My attention was first attracted to this affection some years ago when I met with several cases of painless and unnoticed effusion into the knee-joints of girls of 12 and 13 years of age; and I found upon examining a number of girls who were attending as out-patients at St. George's Hospital that a certain number had painless swellings of the knees of which they and their parents were unaware. In all these cases there was delayed onset of menstruation. Upon inquiry it was found that in some of them, although neither the children nor their parents were aware of anything being wrong, the children tired easily and in some cases were prone to fall down or "double" up without any obvious cause. The character of the joint is peculiar; although containing a considerable amount of fluid it is never tense excepting after superadded injury. The fluid, if the patient is standing, sinks to the lower part of the joint cavity and sometimes leads to a pouch-like overhanging of the synovial membrane at its lower anterior aspect.[2] In the older subjects the aspects of the condition are similar, the main points being the absence of tension and heat and the freedom from pain. The patients are usually anæmic but not invariably so.

As already mentioned, the common cause of the discovery of the condition is an injury, generally very slight, such as a twist or fall; the occurrence of an injury and the existence of effusion naturally lead to a diagnosis of traumatic synovitis, which being apparently of a very chronic nature and occurring in subjects of a delicate type is sometimes mistaken for tuberculous disease, a mistake of some importance. Any error in diagnosis can usually be avoided by noticing the character of the swelling, the existence of effusion on both sides (that on the uninjured side being painless and without heat), and the coincidence of marked menstrual or uterine trouble.

In accordance with my usual custom in these lectures let me bring to your notice the following practical illustrations of the condition of which I am speaking, because, as I have often mentioned to you before, a characteristic case of any kind affords a much more perfect picture of the true aspect of things than abstract descriptions, even if they be perfect in their way.

CASE 1.—A girl, aged 14 years, was brought to me who a few months previously whilst walking across the room had knocked her knee against a chair. She complained of nothing at the time of the injury, but on the following day, as she seemed to walk a little lame, her mother noticed that the right knee was held rather stiffly. Upon examination she found it swollen but not tender. Professional advice was sought and effusion into the knee was diagnosed. The usual treatment by rest was adopted for some weeks without any material benefit. Further advice was therefore taken, a somewhat grave opinion being expressed in respect to the possibility of the case being tuberculous, and I was assured that this opinion was given without a previous examination of the opposite knee. Whether this was really so or not I cannot of course say, but at all events further treatment on the lines previously adopted produced no good result. Later I saw the patient with her medical attendant and upon investigation found that both knees contained a good deal of fluid; neither joint was tense but on the contrary was rather flabby; there was no pain or tenderness; the local temperature on the side which had been injured was, however, certainly rather more than on the other. The girl was anæmic and of a delicate aspect. She had not yet menstruated, but certain pains and symptoms of irritability clearly indicated that menstrual developments were tending to come about. Under the circumstances, judging by my previous experience of similar cases, I ventured to predict that the trouble would subside upon the establishment of the catamenial function and advised the discontinuance of rest and splinting, which had made the injured joint already somewhat stiff, substituting exercise and massage, with as much fresh air as possible. The menstrual affairs, although much delayed, occurred later with great profusion. From the moment of the onset of the catamenial discharge improvement commenced and at the end of a fortnight after the second catamenial period the knees were both entirely normal and remained so subsequently.

CASE 2.—A well-developed woman, aged 24 years, met with a slight injury to one of her knees. She took little notice of the injury, but on the following day, upon getting up in the morning, she noticed some stiffness in the injured knee, and upon examination found it swollen. For a fortnight, as the discomfort was but slight, no further attention was paid to the matter, but then, as the swelling persisted, a surgeon whose name were I to mention it would be a sufficient guarantee of his capacity was consulted. He took a rather serious view of the condition and urged immediate splinting of the part and rest in bed for at least a month. As the patient was one of those people who live in the open air—hunting, golfing, &c.—this recommendation was regarded with dismay, especially as beyond the swelling little or no discomfort was present. She was then brought to me as an alternative opinion. Upon examination the left knee was considerably swollen from effusion; it was not tense. In the erect position the synovial membrane tended to drop forwards and to overhang the part below the joint. Beyond a feeling of slight stiffness, which was not enough to produce anything like a noticeable limp, the symptoms were negative. The opposite knee also contained fluid which, although not obvious when the patient was sitting in a chair, became at once manifest in the standing position. This knee had received no injury nor was the patient aware of the existence of the fluid; indeed, she was certain that the injured knee was also free from fluid before the injury, this being clearly an error on her part. Upon inquiry it appeared that her menstrual affairs had always been irregular and very painful and at the time of her coming to see me she had not menstruated for two months, although at the last normal date she had felt ill and irritable and suffered from distressing bearing-down pains. Judging from the general aspect of the case I came to the conclusion that it was one of the kind now under observation. I therefore felt compelled, in spite of the opinion already given, to oppose the use of splints and rest in bed, the latter of which seemed to me

[1] The Lecture is published as it was delivered excepting the omission of some elementary details which would here be superfluous.

[2] It may be pardonable to remark here that a small quantity of fluid in the knee-joint which when the joint is flexed or if the patient is lying down can only be detected by very expert observers becomes quite obvious on placing the patient in the standing position.

likely to be extremely disadvantageous to a patient of such habits and disposition as this one possessed. I therefore recommended massage, moderate exercise in the open air as much as possible, and the resort to some obstetric authority with a view to the rectification of the menstrual defects. Two opinions so exactly opposite naturally necessitated the reference of the case to a third surgeon, a man of eminence and great discretion, who, adopting very wisely a strictly judicial attitude, declined to commit himself unreservedly to either view, but went so far as to say that confinement to bed in a temperament like that of the patient was to be avoided if possible. The treatment on the lines of my opinion was therefore adopted, and with the onset of regular menstruation, which happily followed a little later, the knee trouble entirely disappeared, although it recurred temporarily before two successive menstruations.

CASE 3.—This patient was in St. George's Hospital under the care of Dr. W. R. Dakin. She was a married woman, aged 26 years, who was admitted on July 8th, 1898. Since her first confinement, six years previously, she had suffered at menstrual times from great abdominal pain. The catamenia had been extremely profuse and exhausting. For two or three years she had been continually ailing, and latterly any attempt at getting about or doing her ordinary work caused intense malaise. For 18 months the knees had been "stiff and hot" before the menstrual times, but she had noticed no swelling either of the knees or of the legs. On admission the patient was found to be anæmic and she seemed ill. There was tenderness over the right ovary on deep pressure. The right knee, she said, was stiff and uncomfortable. There was considerable effusion in the joint which was, however, flaccid—not tense; there was neither tenderness nor any increase of local heat. The limb below was perfectly normal. The opposite knee contained also a little fluid. On July 16th the effusion in both knees had subsided a little; on the 18th it had increased considerably; and on the 19th profuse menorrhagia with large clots and much pain occurred. Considerable hæmorrhage continued, being profuse until the 27th when it diminished somewhat. The effusion in the knees during this time rose and fell from time to time; sometimes it was slight, sometimes great, but at no time did the joints on either side become tense nor was any other joint than the knee involved. On August 8th the uterus was curetted; on the 10th all hæmorrhage ceased, and by the 19th both knees were perfectly normal. The patient reported herself for examination on Oct. 1st and she was then perfectly well; the knees had given no trouble of any kind and upon examination they were found to be normal in all respects. A more conclusive case than this it would be difficult to find.

CASE 4.—A married woman passing through the climacteric period wrenched her right knee in getting out of a cab. The injury was very slight and she thought nothing of it until the following day, when on rising from her bed in the morning she found the knee a little stiff and upon inspection saw that it was considerably swollen. She therefore sought advice. On examination the knee was found to be swollen and it contained a considerable amount of fluid; the joint was not in any sense distended—on the contrary, the capsule was rather flaccid; the fluid in the standing position gravitated to the lower and anterior aspect of the joint, causing some slight "sagging" of the kind which I have previously referred to. The other knee contained almost as much fluid and presented the same characteristics as the injured joint. Of the existence of anything abnormal on the uninjured side the patient was entirely unaware until it was pointed out to her. On inquiry she then stated that the "change of life" had commenced about six months previously, and at times very free loss of blood had happened; after these considerable losses she now remembered that she generally felt very tired upon much exertion, and that on two occasions she had felt a tendency when walking for her knees to "give way." Of this she thought nothing, as she attributed it merely to weakness from pain and loss of blood. She was kept under observation, and during the whole of the climacteric period, which extended over about 18 months, the knees contained fluid, sometimes a little and sometimes quite a large quantity. The increase in quantity usually, but not always, followed increased pain or extra blood flow. The fluid could be almost entirely removed at any time by a week's massage, but it immediately recurred upon the cessation of the treatment. At the end of the climacteric period both joints became normal, and they have never shown any indication of recurrence of the effusion since. The noteworthy points in this case, as in the others, are: (1) the escape of the condition from observation until attention had been attracted to it by injury; (2) the almost rhythmical rise and fall in the quantity of the effusion; (3) the absence of tension in the joint which was replaced by the peculiar flaccidity; and (4) the spontaneous return to the normal state upon the subsidence of the uterine irregularities.

It is hardly necessary to weary you with descriptions of further clinical examples excepting one (Case 5) very briefly in order to show how important a knowledge of these cases may be.

CASE 5.—The patient was a girl, aged 14 years, who was suffering from the troubles which sometimes arise at that period of life from delayed or painful menstruation. After a slight injury the right knee was found to be swollen considerably. Prolonged splinting with complete rest failed to affect the condition in any noticeable way; the child, on the other hand, began to fail in health from confinement to the house and want of exercise. It was then found that the opposite knee contained fluid in considerable quantity, and it was thought that this effusion in the hitherto sound knee was sudden. The onset of the menstrual period was imminent; the knee was rather hot to the touch, and the temperature was 101° F.; at times the girl felt "shivery" but had no actual rigor. The question therefore arose as to the possibility of the apparently sudden effusion into the knee being a secondary pyæmic condition or something of that kind. There appeared to me no doubt, however, that the case was one of the sort under discussion and that the febrile and general disturbance was merely due to catamenial causes. The case was treated on this supposition; splints were omitted, massage and exercise in the open air as much as possible being substituted. Immediate improvement followed and with the gradual spontaneous rectification in the menstrual irregularities, which ensued in the course of 18 months, the knee trouble entirely disappeared. It is obvious in this case that the knowledge of the occurrence of these conditions was of vital importance for the proper treatment of the patient.

I am unfortunately unable to say how many cases of effusion into the knees of this kind I have seen, for of the earlier cases I kept no memoranda; during the past four years, however, I have seen 20 typical examples in all of which the trouble had been attributed to wrong causes. In three cases I withdrew fluid from the knee by means of an exploring needle; in two of these the fluid was ordinary synovia, in the other it contained a considerable amount of blood. Whether this was an accidental occurrence or whether it had any pathological bearing upon the mechanism of the effusion I cannot say. In only one case have I seen the effusion occur in any other joints than the knees; in the exception mentioned effusion occurred into the left ankle in a very rheumatic subject. The causes assigned for the condition were in order of frequency, injury, tubercle, rheumatism, hæmophilia, and "blood poisoning." In no case did recovery occur when the uterine or catamenial irregularities continued; in every case, on the other hand, so far as my memory serves me, correction of these irregularities, whether spontaneously or by treatment, was followed by complete disappearance of the tendency to effusion into the knees.

Some of you may at this stage naturally begin to speculate as to the practical bearing of these cases which I have related. The practical bearing of the cases is of much moment in diagnosis, treatment, and prognosis. First, with regard to—

Diagnosis.—When called upon to examine a case of a woman or girl suffering from painless effusion into the knee, especially if she be at the period of the onset of the catamenial flow—i.e., from the ages of 11 to 14 years—or at the climacteric, never omit to inquire into the state of the uterine functions, and never omit the ordinary surgical routine of examining both knees although the patient may ascribe the effusion to a distinct injury of only one of them. If there be the functional irregularities to which I have referred you will as a rule find fluid in both knees, generally in excess on the right side, and although the patient may be convinced that the condition is due to recent injury it may be concluded for purposes of treatment that the injury is only an incident which has called attention to the effusion, but that it is not primarily responsible for it—in other words, that the case is one of the kind which we are considering. In the absence

of catamenial irregularity or uterine disorder some other reason must, on the other hand, be sought for the local condition.

Treatment.—In the matter of treatment a correct interpretation of these cases is of vital importance, especially in young subjects in whom the chronicity of the condition and the ofttimes delicate aspect of the patient suggest tuberculous disease if the attention be too much concentrated on one knee only, and may lead to a treatment by splints and complete rest which in the catamenial and uterine cases is the very worst for adoption and should be rigorously avoided. The primary treatment should be directed to the correction of the faulty functions, whilst moderate exercise and massage for the knees, combined with the healthiest of outdoor lives, are collateral indications—beyond everything, splints of any kind should be avoided, and on no account should the patient be allowed to lead an invalid's life unless the loss of blood, pain, &c., render this absolutely unavoidable. In the absence of acute symptoms arising from injury the condition of the knees need lead to no restriction in the exercise of an ordinary person.

Prognosis.—The prognosis in these cases, if treated on the lines indicated, is always good, provided that the primary cause of the effusion can be cured, in which case recovery invariably follows unless the condition has persisted so long as to produce permanent changes in the joint. If the primary condition proves intractable the effusion will occur continuously or recurs at intervals. In cases where the effusion is continuous or is constantly recurring an increasing weakness of the knees occurs and in the later stages, when the health becomes broken down by frequent loss of blood or great pain, œdema of the legs sooner or later follows, but in this there is no specific meaning since it is merely the result of continual exhausting illness.

Such, gentlemen, are the main points in connexion with this interesting condition to which I am anxious to direct your thoughts. So far as I know the affection is not one which is commonly recognised, although, of course, it may be well known to some people. Since, however, a well-known obstetric physician assured me some time since in conversation that the subject was new to him I presume that it cannot be altogether familiar to the generality of us. This amongst other reasons must be my excuse for occupying so much time to-day in considering the matter.

Note.—Since the delivery of this lecture the following striking case amongst others has come under observation. A woman, aged 47 years, had up till quite recently been menstruating with exceptional regularity; she had always been in good health and very active in her habits, taking much bicycle and walking exercise. The last two "periods" had been very profuse and were followed by an almost continuous flow which was very obstinate to treatment. A short time before the case came under my notice the nurse in charge of the case called attention to the existence of swelling of both knees. The patient was anæmic and at times lost much blood; both knees were swollen from effusion, the joints being baggy—not distended; there was neither local heat nor tenderness—indeed, beyond a feeling of weakness nothing abnormal was complained of by the patient. The well-marked point in this case was the singular way in which the effusion rose and fell in relation to the occurrence of the uterine hæmorrhage. The greater the loss of blood the greater was the amount of effusion in the knees. Upon the cessation of the hæmorrhage for a few days the effusion would almost disappear only to reappear in the usual quantity with the recurrence of the uterine flow. In this case as usual the effusion was confined to the knees. At the termination of the climacteric the knees recovered spontaneously and have given no sign of trouble since.

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Three Lectures
ON
THE SURGERY OF PREGNANCY AND LABOUR COMPLICATED WITH TUMOURS.

Delivered at the Medical Graduates' College and Polyclinic on Jan. 11th, 18th, and 25th, 1901,

BY J. BLAND-SUTTON, F.R.C.S. ENG.,
SURGEON TO THE CHELSEA HOSPITAL FOR WOMEN; ASSISTANT SURGEON TO THE MIDDLESEX HOSPITAL.

LECTURE III.[1]

Delivered on Jan. 25th.

PREGNANCY COMPLICATED BY CANCER OF THE NECK OF THE UTERUS; TUMOURS OF THE PELVIS; MISPLACED VISCERA; SEQUESTERED AND QUICK EXTRA-UTERINE FŒTUSES.

GENTLEMEN,—We will begin this lecture with the consideration of what to my mind is the most appalling of all the complications of pregnancy—namely, cancer of the neck of the uterus. One of the most significant clinical features in regard to cancer of the neck of the uterus is the fact that it is almost exclusively confined to women who have borne at least one child. In 100 women with cancer of the cervix which I carefully investigated in regard to this point there was only one exception, and she was married. Even in this case a miscarriage could not with certainty be excluded. Czerwenka has recorded an interesting observation bearing on this subject. A woman, 35 years of age, had a double uterus with cancer of the left cervix. This uterus was removed by panhysterectomy. The vagina was double; coitus was practised in the left half. The left cervix had become cancerous, the corresponding uterine body contained two small fibroids, and the left Fallopian tube had become a pyosalpinx.

It is somewhat difficult to understand how a woman with cancer of the uterus can conceive, but it is quite certain that it happens, and even when the disease is well advanced; further, it is by no means easy in the early stages to detect the complication, because in many cases cancer of the cervix leads to enlargement of the uterus. Dr. Playfair exhibited a uterus at the Obstetrical Society of London in which he had performed vaginal hysterectomy for cancer of its neck, and to his astonishment he found that it contained an embryo of the second month.[2] I feel convinced that in some cases cancer of the neck of the uterus grows more rapidly than some of us realise, and it is not beyond the bounds of reasonable probability that this woman's cervix was healthy at the time she conceived, and the amount of diseased tissue present at the time of operation represented two months' growth. It is consistent with what we know of the growth of cancer in the breast, for in this situation carcinoma increases with extreme rapidity during lactation. Judging from my own observations I think that cancer of the neck of the uterus is not an uncommon complication of pregnancy, but I believe that cases in which uterine cancer offers obstruction to delivery are rare, and this for two reasons: cancer of the neck of the uterus predisposes to abortion, and when it has advanced to such a stage as to occupy the vagina with an obstructive mass the effect of it upon the patient is such as endangers and ofttimes kills the fœtus. Indeed, it may be laid down as a principle that when considering the question of Cæsarean section upon a woman with cancer of the cervix the intending operator should first satisfy himself that the child is alive. The following case not only illustrates this fact but will serve to demonstrate that it is a fortunate circumstance that in many cases in which this dreadful combination of cancer of the cervix and pregnancy exists that there is a great tendency for abortion to occur. A

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[1] Lectures I. and II. were published in THE LANCET of Feb. 9th (p. 382) and 16th (p. 452), 1901.

[2] Transactions of the Obstetrical Society, vol. xxxvii., p. 198.

poor woman about seven months pregnant was admitted into the Chelsea Hospital for Women with the hope that I would perform Cæsarean section. On examination the extensive nature of the cancer clearly barred any operative measures for its relief, and although there could be no doubt that the uterus was gravid there existed a good deal of doubt about the vitality of the fœtus. I decided to watch the case and await events, and if we obtained clear evidence that the child was viable we could then take steps for deliverance unless miscarriage happened, and there were threatenings of such an event. About five days later abortion occurred and a dead, shrivelled fœtus escaped from the uterus. There was very little bleeding and in due course the uterus settled down and eventually the woman returned to her home and died some month later.

Now and then it will happen that such cases urgently demand surgical treatment and the surgeon will have to exercise his mind as to the best method of dealing with the complication. I was on the horns of this dilemma in 1899 when a woman, 33 years of age, and mother of several children, was transferred from Queen Charlotte's Hospital to the Chelsea Hospital for Women under my care. The poor patient was eight months advanced in pregnancy and had extensive cancer of the neck of the uterus. It surrounded the vaginal portion of the cervix like a ring, but did not invade the vaginal walls or infiltrate the broad ligaments. Although the conditions as to remote results were not too propitious operation was possible and the immediate outlook was not too bad. The case was the subject of a very anxious consultation and there were three courses suggested: (1) induce labour and remove the uterus after the puerperium; (2) amputate the cervix and let labour follow; and (3) abdominal panhysterectomy. I deliberately chose the third course, as it would enable me to rescue a viable child and at the same time remove the cancerous uterus. The operation was carried out in the following way: the patient was etherised and the abdomen was freely incised in the middle line. The broad ligaments were clamped with forceps and cut; the uterine arteries were exposed and clamped and the uterus with its contents was cut away from the cervix and handed to an assistant. Thus whilst I was occupied in securing the vessels an assistant opened the uterus and extracted the child. This is as far as I know the first record of a child being delivered alive from a uterus detached from its mother. Having secured the vessel I then removed the cancerous cervix, having taken the precaution to protect the intestines by sterilised towels. The vaginal edges were sutured and the peritoneum closed over it, and the abdominal incision secured as usual. The patient did not rally well from the operation and paresis of the intestines supervened and she died on the fourth day. The child flourished well during many days in an incubator; then he began to waste and died when about 14 days old.

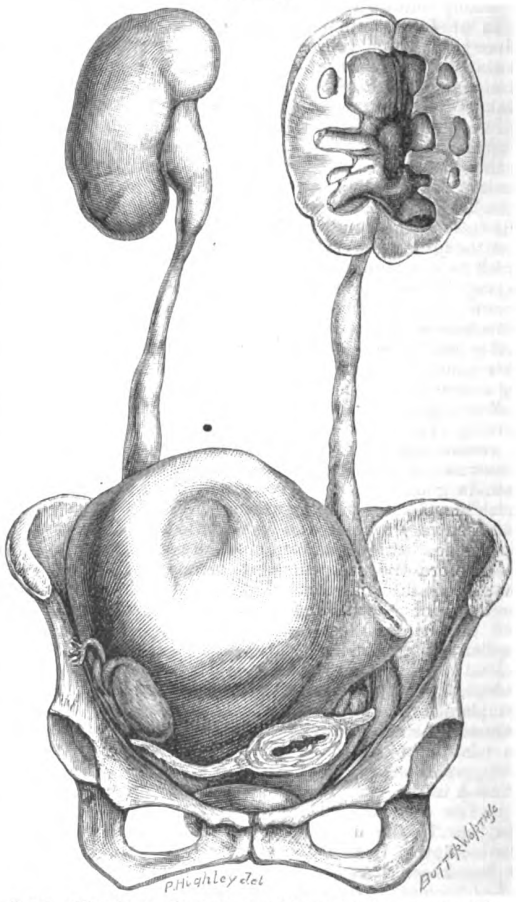
It occasionally happens that even when the child is dead cancer may induce such changes at the neck of the womb as to render surgical interference indispensable. In 1891 a woman, 35 years of age, mother of six children and known to have cancer of the neck of the uterus, was taken in labour. Until the onset of "the pains" no one suspected pregnancy. On examination a hard cancerous infiltration of the cervix was found and the umbilical cord had prolapsed and ceased to pulsate. The woman was admitted into the Middlesex Hospital; 48 hours later Dr. W. Duncan performed Cæsarean section and extracted a dead and putrid child with its placenta. The patient died 41 hours after the operation.[3]

A study of the literature, which, by the way, chiefly consists of isolated records of cases, indicates that the course usually followed when pregnancy, complicated with cancer of the cervix, goes to term is to perform Cæsarean section, especially as the cancer is, as a rule, too extensive to permit radical surgical measures. When the cancerous condition of the cervix is detected before the mid-period of gestation it would be desirable to empty the uterus and perform vaginal hysterectomy if the disease is not so extensive as to preclude the hope of a successful issue. On the other hand, when cancer of the cervix is detected in the late stages of pregnancy the cervix may be removed without disturbing the pregnancy. In one successful case, performed in the seventh month, pregnancy went to term and labour occurred naturally. A year later there was extensive recurrence (Wallace). A study of the records indicate that the best operative results have followed radical operations by the vaginal route.

Cancer of the rectum and pregnancy.—Of this unusual complication and obstruction to delivery I only know of one example. The patient was in the Middlesex Hospital Cancer Wards, under the care of the late Mr. J. W. Hulke in 1894, for cancer of the rectum for which colotomy had been performed. On admission the patient was found to be pregnant, "and when the full time came that she should be delivered" Mr. Hulke transferred the patient to the ward for the diseases special to women, and Dr. Duncan successfully performed Cæsarean section.[4]

Tumours of the pelvic bones.—Among the rare obstructions to labour must be reckoned tumours of the pelvis other than those which arise from the uterus, ovary, or Fallopian tubes. In the text-books of midwifery a chondroma arising from the pelvic bones is nearly always mentioned; it is an extremely rare tumour independent of pregnancy and when it complicates this condition it offers a formidable obstruction to delivery. The remarkable effects which such tumours produce on the pelvic viscera are shown in Figs. 7 and 8, taken from a specimen in the museum of University

FIG. 7.



Pelvis with a large chondroma arising from the sacrum and complicating pregnancy at term. (Museum of University College, London.)

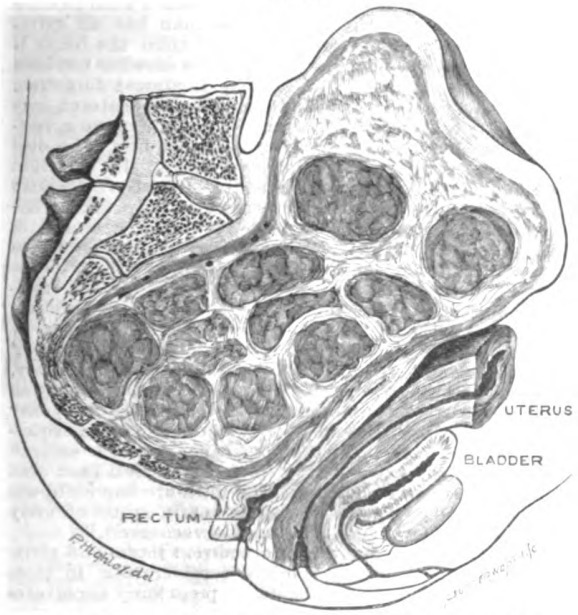
College, London, obtained from a woman, 21 years of age, who was admitted to the hospital in 1893 in labour. The patient came under the care of Dr. Herbert Spencer who performed hysterectomy and saved the life of the child. The mother died on the ninth day after the operation. The parts concerned are shown in sagittal section; it will be seen that the tumour is intimately connected with the third, fourth, and fifth sacral vertebræ and that it has utilised all the available space in the true pelvis and has displaced and compressed the rectum, vagina, and

[3] Middlesex Hospital Reports, 1891, p. 159.

[4] Middlesex Hospital Report, 1893, p. 215.

urethra against the pubes. The ovoid shape of the tumour, and in consequence its elliptical outline, is characteristic of all tumours which mould themselves in the true pelvis—e.g., the pelvic segments of large ovarian cysts and cervical fibroids and the head of the fœtus after a long labour. The most lethal effect of the tumour even more than the obstruction it offered to delivery is the insidious change it produced on the ureters, for both were dilated and the pelvis of each kidney contained pus. A perusal of the clinical post-operative history indicates that she probably died

FIG. 8.



The pelvis in the preceding drawing in sagittal section. The dark patches are spurious cavities due to softening of the cartilage.

in consequence of the great disorganisation of the kidneys. The tumour is a chondroma, part of which has ossified; it has a firm fibrous capsule. The spaces in the tumour are spurious cavities due to myxomatous changes in its tissue. This woman was known to have a tumour in her pelvis seven years previously to her tragic death. The structure of the tumour is consistent with such a history.

A somewhat similar though not so severe a case was placed under my care in the Chelsea Hospital for Women by Dr. W. H. Fenton. The patient, a married woman, 32 years of age, mother of two children and five months pregnant, was found to have a tumour in the pelvis which so narrowed the outlet that delivery by the natural channel would be an impossibility. On careful examination the tumour was thought to be an ovarian dermoid incarcerated in the pelvis and it was decided that an attempt should be made to perform ovariotomy. There were other features in the case which demanded consideration; the urine contained albumin (about one-half) and the uterus was so large as to raise the suspicion of hydramnion. The general aspect of the patient was not good. However, the case demanded surgical intervention and I performed cœliotomy; instead of an ovarian dermoid I found a large, hard, solid tumour growing from the anterior face of the coccyx and lower sacral vertebræ extending almost completely across the pelvis. I had no alternative but to perform hysterectomy, although this was a serious operation in view of the albuminuria. Fortunately, the patient made one of the most rapid recoveries I have ever known after hysterectomy and she left the hospital convalescent in 14 days. She reported herself at the end of three months and an opportunity was taken to examine the urine; the amount of albumin had not altered. We kept in touch with the patient and learned that she died two years after the operation from pneumonia.

Post-rectal dermoids.—In considering pelvic tumours it is well to bear in mind that dermoid tumours may occupy the hollow of the sacrum behind the peritoneum and the rectum and be absolutely independent of the ovaries; this is proved by the fact that they occur in men as well as in women. A case was carefully observed in the Royal Infirmary, Newcastle-on-Tyne. The patient, a woman, 49 years of age, was under the care of Mr. Frederick Page and he removed the tumour through the perineum by means of a transverse incision between the anus and the coccyx. He extracted the pultaceous matter with a spoon and then enucleated the wall of the dermoid. The woman recovered. The contents of the tumour weighed three pounds; its walls were furnished with hair and the tumour resembled a pumpkin in contour and in size. The best-known example of a post-rectal dermoid in a man is recorded by Ord. I collected all the records of post-rectal dermoids I could find and drew attention to them in my book on "Tumours." The latest contribution to this subject is an article by Skutsch,[5] and he gives an account of two cases under his own care in women. One of them is especially interesting in association with the subject of this lecture because the patient, a woman, 28 years of age, was pregnant at the time she came under observation. This woman had had three children previously and a miscarriage. At the time she came under Skutsch's care she was five months pregnant and had difficulty with the bladder and rectum. He succeeded in evacuating the cyst contents through a transverse incision in the perineum. The tumour extended as high as the pelvic brim and he succeeded in extracting a portion of the wall and draining the cavity. The mother recovered from the operation, the pregnancy was not disturbed, and she was delivered at term without difficulty. The cyst wall was carefully investigated microscopically and determined to be dermoid.

Kidney in the hollow of the sacrum.—It is necessary for a tumour to be composed of very substantial tissues to offer an effective bar to delivery, and, as I pointed out in dealing with ovarian tumours incarcerated in the pelvis by a gravid uterus, in the majority of instances those which proved the most formidable were in nearly all instances dermoids. I am cognisant of one case in which a kidney occupied the hollow of the sacrum and did not oppose delivery, and in its turn the passage of the fœtus does not appear to have affected it injuriously. The facts of the case are not without interest. The patient, a woman, aged 33 years, was known to have a painful swelling behind the uterus and of a character which suggested a distended Fallopian tube. Cœliotomy was performed by Dr. Heywood Smith, and when the parts were exposed we found the uterus to be of the unicorn variety and to possess one Fallopian tube and a well-developed ovary on the right side. The left side of the uterus was smooth and rounded and lacked a broad ligament ovary and Fallopian tube and anything representing the left round ligament. Knowing that this malformation of the internal genital organs is usually associated with defective development or misplacement of the kidney, corresponding to the defective half of the uterus, I was allowed to make a careful examination of the renal organs. The right kidney occupied its proper position; the left one lay in the hollow of the sacrum behind the peritoneum and proved to be the body which we had recognised behind the uterus and thought to be an enlarged Fallopian tube or ovary. The abdominal incision was closed and the patient made an uninterrupted recovery. About 14 months afterwards the patient conceived and had the satisfaction of being delivered easily at full term of a fine child.[6]

Many years ago I prepared a specimen of a kidney occupying the hollow of the sacrum and placed it in the museum of the Middlesex Hospital (Fig. 9). The parts were obtained from a man, and at the time I drew attention to the fact that a kidney in such a situation in a woman would constitute a clinical puzzle. It is a remarkable fact that within the space of three months I received for examination and report two kidneys removed from the hollow of the sacrum by the same operator from women. One of these kidneys was hydronephrotic. Thus I have knowledge of four cases in which the kidney was a pelvic organ, three in women and once in a man. In one of the instances it was associated with pregnancy and an unimpeded delivery.

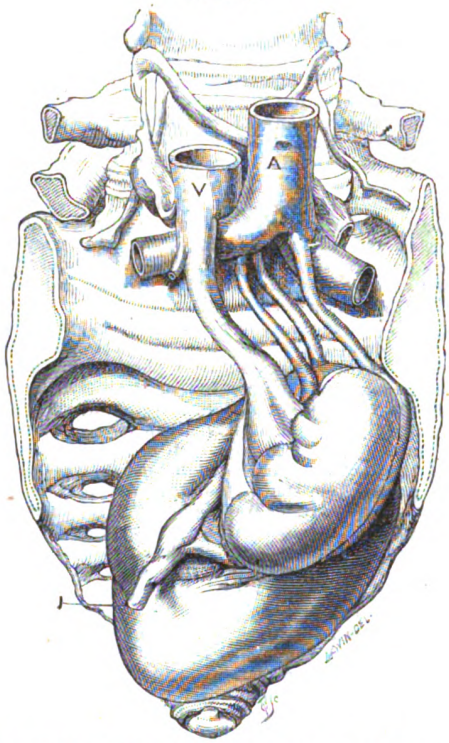
The spleen.—One of the rarest complications of pregnancy among the class we are considering is an enlarged and moveable spleen. In May, 1900, a woman, 34 years of age, mother of seven children and two months pregnant, was

[5] Zeitschrift für Gebürtshulfe und Gynäkologie, Band xl., 353.
[6] THE LANCET, April 16th, 1898, p. 1051.

placed under my care on account of a very mobile, painful, and troublesome swelling in the left iliac fossa, which furnished the physical signs and possessed the shape of a spleen. I performed cœliotomy and the diagnosis proved correct; the spleen was removed and the patient made a quick and uneventful recovery. In December the child was born and the mother reported herself in excellent health notwithstanding that she lacked a spleen. The full details of this case will be found in the Transactions of the Clinical Society of London, vol. xxxiv., p. 26. I have not been able to find another record of splenectomy during pregnancy.

A little reflection on the subject of these lectures makes it clear that tumours which may complicate pregnancy

FIG. 9.



Kidney occupying the hollow of the sacrum. A, Artery. V, Vein. U, Ureter. (Museum of the Middlesex Hospital.)

constitute a formidable list, and there are occasions when it becomes a matter of great difficulty to determine the nature of an obstructing tumour. I remember on one occasion being present at an operation which was undertaken for a suspected tubal pregnancy, but, strange as it may seem, both Fallopian tubes were converted into large sacs of pus and the uterus was gravid. But the enlarged tubes were removed and abortion occurred a few days after the operation. The pregnancy had advanced to the third month. The patient recovered.

A very remarkable case in which the uterus containing several fibroids simulated retroversion of the gravid uterus has been recorded by Cullingworth. Eventually operative interference was undertaken and a fœtus of four and a half months which had developed in the Fallopian tube was found in addition to the fibroids.[7]

In many instances, of course, the determination of the precise nature of the obstructing tumour is not of any serious moment, in others it is all-important, and I am sure that many of us, when face to face with some of these difficult cases, have felt like the Prince of Morocco when, hoping to choose the casket containing "fair Portia's counterfeit," he says:—

"Some god direct my judgment!"

I have thought it desirable, although not strictly in accord with the title of the lectures, to briefly mention a serious, though fortunately a very rare, complication of labour—namely, the presence of a fully-developed extra-uterine fœtus in the pelvis. I am persuaded to do this because on one occasion a solid ovarian tumour incarcerated in the pelvis by a gravid uterus led the physician in charge of the case to regard it as an extra-uterine child; also because a sequestered extra-uterine fœtus constitutes in some conditions a very formidable obstruction to delivery.

Labour complicated with sequestered and with "quick" extra-uterine children.—It is a well-established fact that uterine and tubal pregnancy may run concurrently and both go to term; this may be described as the most dangerous combination to which child-bearing women are liable. The particular form of this combination to which I wish to draw especial attention is that where the woman has an extra-uterine pregnancy which goes to term and then the fœtus is sequestered in the pelvis. The nature of the case has not been recognised and in the course of time is almost forgotten. It is a fact that a woman with a fœtus thus sequestered may subsequently conceive in her uterus. Stonham made a post-mortem examination on a woman, 43 years of age, who died from bronchitis when seven months pregnant. In the right mesometrium he found a sequestered fœtus partly macerated and partly in the soapy condition known as adipocere. The uterus contained a fœtus at about the seventh month of gestation.[8] Leopold has recorded a very remarkable case concerning a woman who had had seven children. After the fourth child she had, according to the evidence, an extra-uterine pregnancy, then three more intra-uterine children, and lived to the age of 70 years; at the necropsy a sequestered fœtus which she had carried 35 years was found.[9] This case, and others which could be quoted if necessary, serves to show that a sequestered fœtus is not necessarily an impassable barrier to the child. To Worrall of Sydney belongs the credit of not only correctly diagnosing a sequestered fœtus as a complication of pregnancy, but he successfully removed the extra-uterine fœtus which had been dead about two years by cœliotomy. The intra-uterine child was born the day following the operation, but in spite of every care it died in a few hours. The mother recovered.[10]

In dealing with the question of concurrent intra- and extra-uterine gestation the cases require consideration in three categories. 1. Cases in which uterine pregnancy supervenes on a quiescent (sequestered) extra-uterine fœtus and goes to full term. In these circumstances it may end happily and, as in Leopold's case, be successfully repeated. 2. An extra-uterine and a uterine pregnancy begin simultaneously, but the complication is recognised in the early months and terminated by surgical intervention (Walther, Hermes, Strauss). 3. Uterine and extra-uterine pregnancy running concurrently to term. All the recorded examples of this extremely rare combination have, with one exception, ended in disaster to the mother.

In order to show what a disastrous conjunction a combined intra- and extra-uterine pregnancy is at term, with two "quick" children, I have drawn up a table of some records easily accessible to English readers which plainly shows how deadly it is for the mothers and it also sets forth the fate of the children. To these cases I have added the year of record and it will be seen with satisfaction how rarely this deadly combination runs to term. There is one bright feature disclosed in the table, and that is the good fortune which fell to Ludwig, for he not only had the satisfaction of saving the life of the mother, but the intra- and extra-uterine children were also successfully rescued—a feat in obstetric surgery of which any man may justly feel proud.

Table showing Cases of Concurrent Intra- and Extra-Uterine Pregnancy running to Term, with the Fate of the Mother and Children.

Recorder.	Year.	Fate of mother.	Intra-uterine child.	Extra-uterine child.
Cooke	1863	Died.	Died.	Died.
Sale	1871	,,	Lived.	Lived.
Galabin	1881	,,	Died.	Died.
Wilson	1880	,,	,,	Lived.
Franklin	1893	,,	Lived.	Died.
Ludwig	1896	Lived.	,,	Lived.

[7] Transactions of the Obstetrical Society, vol. xl., p. 285.

[8] Transactions of the Pathological Society, vol. xxxviii., p. 455.

[9] Archiv für Gynäkologie, Band xix., 210, 1882.

[10] Medical Press and Circular, 1891, vol. i., 296.

THE DIAGNOSIS AND TREATMENT OF ABSCESS IN CONNEXION WITH THE VERMIFORM APPENDIX.

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MUCH controversy still exists as to the treatment, operative or otherwise, of cases of appendicitis, but all authorities agree that the presence of pus makes operation imperative. The diagnosis of abscess in connexion with the appendix becomes in consequence one of signal importance. The ordinary signs of pus-formation are no useful guides: a rigor or pus temperature, redness and œdema in the right iliac fossa, or the presence of deep fluctuation, if found, are one and all suggestive of the presence of pus; but these signs are so exceptionally present that if a diagnosis is to be based on them it will seldom be made. A rigor is rare; as a well-marked and remembered sign it has only occurred in three of my tabulated cases. A pus temperature—that is, a temperature low in the morning and high in the evening, followed by night sweats—is the most constant and important of the signs mentioned and is not often absent. Redness and œdema in the right iliac fossa only occur when pus has made its way through the abdominal wall and the abscess is about to open externally, a rare termination. Fluctuation can occasionally be found in neglected abscesses which have been allowed to attain to a large size. It is a fact, and it is of overwhelming importance to know it, that an abscess may be present and all of these signs may be wanting, and that with a large and dangerous abscess the patient may appear to be convalescent. I have notes of four such cases on which I have operated during the past year. The following will suffice as an example.

CASE 1.—A patient under the care of Dr. A. Campbell, Monkwearmouth, was admitted to the private hospital on July 27th, 1900. Ten days previously he had been suddenly seized with acute abdominal pain and vomiting. Similar attacks had troubled him before. He had to go to bed and was feverish and ill for five days, when the pain became localised in his right iliac fossa. During the past five days his temperature and pulse were normal. He regarded himself as convalescent, and he walked from the cab upstairs to his room. When seen there he was dressed and going about and said that he felt well. On bi-manual examination (one hand on the abdomen and a finger in the rectum), a large tender mass was found on the right side of his pelvis. Operation disclosed an abscess containing about three ounces of foul pus and a perforated appendix hanging over the brim of the pelvis.

The two essentials for diagnosis are: (1) the history; that of a sudden severe attack of abdominal pain gradually becoming localised in the right iliac fossa, attended by vomiting and fever, and followed by an abdominal illness; and (2) the discovery of a definite tender tumour, with usually rigidity of the abdominal muscles, in the neighbourhood of the appendix. The diagnosis of appendicular abscess made on these grounds will less often be wrong than any other in abdominal surgery, and every such case should be operated upon.

In a previous series of papers on Appendicitis, published in the *Edinburgh Medical Journal* for March, April, and May, 1897, I drew attention to the clinical importance of the anatomical position of the appendix, and again wish to point out its diagnostic and prognostic significance. For surgical purposes the anatomical positions of the appendix may be described as: (1) on the inner side of the cæcum and pointing upwards into the area occupied by the small intestine; (2) on the outer side of the cæcum, and pointing to the gutter on the outer side of the ascending colon which leads above into the hepatic pouch; (3) below and internal to the cæcum and pointing into the pelvis; (4) behind the cæcum in the sub-cæcal fossa; and (5) behind the ascending colon and resting upon the peritoneum and fascia, or fascia alone, covering the psoas muscle. An appendix in either of these five situations surrounded by a localised collection of pus produces characteristic physical signs by a careful study of which, in the great majority of cases, the position of the appendix and the relations of the abscess can be, and are in my wards, correctly foretold. Such refinement of diagnosis does not meet with great encouragement at the present day, but considering the difference in prognosis of an abscess on the inner and one on the outer side of the cæcum, and the advantage to the surgeon of knowing where to look for the appendix in a difficult case, complete diagnosis must be regarded as a valuable aid both to prognosis and to treatment.

The commencement in the greater number of cases of appendicular abscess is by a sudden severe pain, often waking the patient from sleep in the early morning. (See paper previously mentioned.) The pain at first cannot be definitely localised, but it is frequently referred to the epigastrium; later, it descends to the right iliac fossa and continues there long enough as a rule to prevent the patient from sleeping for two or three nights, it then gradually subsides, leaving marked tenderness behind. The pain is immediately, or shortly, unless in exceptional instances, followed by vomiting and a febrile illness of such severity as to confine the patient to bed for some days. If due importance is not attached to the early history and the presence of an iliac swelling be overlooked, it is not surprising to learn that typhoid fever has been suspected.

The diagnosis of a case which is so acute as to develop an abscess in 24 hours, and a recognition of the appropriate treatment—immediate removal of the appendix—are both easy. It is especially to the more difficult questions of the diagnosis and treatment of the less acute forms that my present paper is meant to draw attention.

1. The position of appendicular abscess inside of the cæcum is indicated in the diagram (see Fig. 1). The walls of the abscess are usually constituted of coils of small intestine and the roof of omentum. When acute tenderness has subsided, such an abscess may be fairly moveable in all directions, and this mobility may raise difficulties in its diagnosis. A small ovarian cyst with twisted pedicle and fixed by adhesions produces symptoms and signs very similar.

2. With an appendicular abscess on the outer side of the cæcum the swelling will be found to commence in the right iliac fossa above the anterior superior spine. As it enlarges it hugs the iliac crest and extends upwards to the ilio-costal space (see Fig. 2). It is quite fixed, and when large makes a definite palpable lumbar swelling. If the appendix in that position happens to be long it reaches upwards into the hepatic pouch, and when inflamed it frequently ruptures at the tip and causes a swelling there, which is generally mistaken for a liver or kidney tumour (see Fig. 3).

3. If the inflamed appendix hangs over into the pelvis, the resulting abscess may be found as (*a*) a limited swelling fixed to the pelvic brim and most readily discovered by bi-manual examination (the hand on the abdomen and a finger in the rectum); or (*b*) the pus may fill the pelvis in varying degree till the recto-vesical or recto-uterine pouch, distended by pus and roofed over by intestine and omentum, comes to resemble a distended bladder or an ovarian cyst (see Fig. 4).

4. An abscess in the sub-cæcal pouch pushes forward the cæcum, which may be felt gurgling over it, or giving a resonant note on light percussion. This abscess is usually small, occasionally it is a little moveable from side to side, and lies deep in the iliac fossa. It may be confounded with the more chronic and less tender tuberculous or malignant tumour at the ileo-cæcal valve (see Fig. 5)

5. An appendicular abscess behind the ascending colon and lying on the psoas muscle produces a lumbar tumour and flexion of the corresponding thigh (see Fig. 6).

The difficulty of diagnosis in pelvic cases, especially in women, requires special mention. The combination of

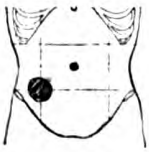
FIG. 1.

FIG. 2.

FIG. 3.

FIG. 4.

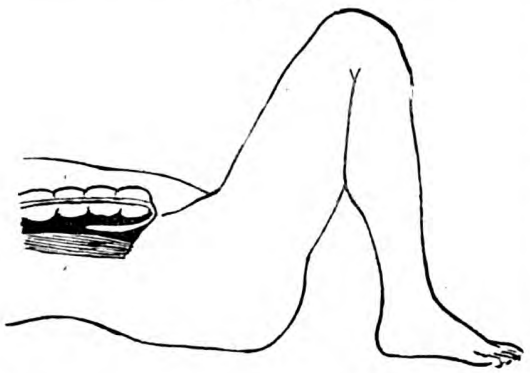
FIG. 5.



ovarian cyst with appendicitis is not rare, and the difficulties of diagnosis are thereby increased. As a typical and not very rare example of this combination I may quote an old case.

CASE 2.—A woman, aged 31 years, a patient under the care of Dr. A. H. Davis, Sunderland, on the evening of April 4th, 1895, felt a pain in the abdomen, but not severe. She took an aperient pill and at 2.30 A.M. was awakened with severe pain. A dose of saline aperient and the application of hot flannels relieved her. In the morning she took a cup of tea, which she vomited. She had hiccough and her bowels were not moved. On the 15th, at 10 A.M., she was seen by Dr. Davis, who found her with a pulse of 80 and a temperature of 100° F., and complaining of general abdominal pain. Her cheeks were flushed, her feet were cold, her knees were drawn up, her mouth was dry, and she was very thirsty. The abdomen was generally tender, but this was most marked in the

FIG. 6.



hypogastrium. An enema given in the evening had no aperient effect, but was followed by intense pain and a feeling of faintness. She vomited once. The temperature was 101·2° and the pulse was 90. There were occasional chills. On the 16th the pain became more definitely referred to the right side of the abdomen, which was swollen, rigid, and tender. On the 17th Dr. Davis found a lump in the right iliac fossa; on the 18th a consultation with Dr. D. Drummond was held, and a pelvic swelling was found in addition to the tumour in the right iliac fossa. I saw the patient first on the 19th (15 days after the illness had commenced). Previously she had always had excellent health, now she was pale and ill-looking; her tongue was red and moist; her pulse was 100, and her temperature was 100°. In the right lumbar region, and extending into the right iliac fossa, a tender, resisting, ill defined swelling was felt. Per vaginam the pelvis was filled with firm exudate fixing the uterus. A temperature chart kept since the beginning of the illness was strongly suggestive of the presence of pus.

Operation was performed on April 20th. The abdomen was opened by an oblique incision in the direction of the external oblique fibres with its centre over the cæcum. The cæcum was found to be glued down over a mass in the right iliac fossa. The pelvic brim was covered by adherent intestines, beneath which a fluctuating swelling was felt filling Douglas's pouch. The intestines above the cæcum were free from adhesion. The abdomen was packed and covered with an antiseptic towel and the patient was placed in the lithotomy position. After vigorous cleansing of the vulva and vagina an incision was made in the posterior vaginal fornix close behind the cervix uteri and about one drachm of purulent fluid escaped. A pair of forceps pushed closed into the opening and drawn out open led to no further result. Between one hand on the abdomen above and a finger in the vagina wound below a cystic swelling could be distinctly felt. The patient was now replaced on her back with an antiseptic towel over the vulva, and the abdominal wound was prolonged backward to the loin and forwards to the middle line, the deep epigastric artery being secured before its division. After separating the adherent intestines the cystic swelling in the pelvis was now seen to be ovarian. It was torn out whole and the oozing bed in which it had been adherent was immediately packed with sponges. The remainder of the abdominal cavity was also packed off with sponges and the separation of the cæcum from the parietes on the outer side undertaken. On tearing through the outer layer of the mesocolon an abscess containing at least two ounces of stinking pus was evacuated. The appendix was searched for by raising the whole of the cæcum from the outer side. It was seen and felt firmly adherent to and flattened on the under surface of the exposed cæcum, where it was left after an attempt to separate it showed that this was unlikely to be accomplished without tearing the intestine. The appendix cavity was sponged dry and carefully packed with iodoform gauze strips, the ends of which were left hanging out from the loin end of the wound. The sponges packing the abdomen and pelvis were next removed and all oozing was found to have ceased. A second cyst was now found in the pelvis and removed. The left ovary and tube were found in their normal position and seemed healthy, though adherent. They were not interfered with. A pair of long clamp forceps were introduced through the abdominal wound down to the opening in the upper part of the vagina, and, guided by Dr. Davis's finger in the vagina, were led outside the vulva, where they were opened and made to seize a thick strand of iodoform gauze, the upper end of which was drawn in so that it just reached into the pelvis, the lower end lying within the vulva. The entire abdominal wound was closed with silk except where the gauze drain and an india-rubber tube were left projecting behind. The first cyst removed was an ovarian dermoid of the size of a cocoa-nut, the second was a parovarian cyst of the size of a turkey's egg. The patient made a good recovery, but 10 months later I had occasion to open a second acute appendicular abscess. Since that time she has remained well.

Further difficulties in pelvic cases are illustrated by the following examples.

CASE 3. *Pelvic appendicitis in a female; pus draining through the Fallopian tube.*—A single woman, aged 27 years, was admitted to the Royal Infirmary, Newcastle, on Sept. 26th, 1899. On the 21st, while in bed, she felt a sudden pain about the stomach and vomited. On the 22nd she took castor oil, which was vomited. An enema administered later brought away some fæcal matter. On the 23rd the pain settled in the right iliac region and she continued to vomit. On the 24th and the 25th she had difficulty in passing urine but her bowels were moved. The pain and vomiting continued. On the 26th she was admitted to the infirmary at 9 A.M. On admission she was flushed, had a coated tongue and a temperature of 100·8° F. and a pulse of 120. The whole abdomen was slightly distended, tender, and rigid. The note over the lower abdomen was dull on light percussion. Per rectum nothing was found. The patient was menstruating and passed through a normal period. After her admission the pain abated, the vomiting ceased, and four days later her temperature became and remained normal. On Oct. 5th, 10 days after her admission, as a pelvic swelling was still palpable from the abdomen, she was examined under an anæsthetic. An indefinite firm mass was felt in the left iliac region. Per vaginam the hymen was found to be intact and the vagina virginal. A soft fluid immoveable swelling, apparently of the size of a fœtal head, bulged into and filled the anterior and lateral vaginal fornices. The bladder was emptied by a catheter and the swelling found to be entirely in front of the uterus. This was confirmed by the uterine probe. On withdrawing the uterine probe some fœtid pus escaped from the cervical canal. The diagnosis suggested was that of suppurating dermoid ovarian cyst ruptured into a Fallopian tube.

Operation was performed on Oct. 10th. The abdomen was opened from the umbilicus to the pubes, when the pelvis was seen to be filled by a mass covered by adherent intestine. The abdominal cavity was packed with sterile gauze and the patient was placed in the Trendelenburg posture. On separating the intestinal coils a large quantity of very offensive pus escaped and was quickly mopped up. The pouch of Douglas was practically a large abscess cavity and the abscess extended upwards into the left iliac fossa. A fæcal concretion was found lying at the bottom of the pelvis, and on drawing the adherent cæcum forward a sloughy opening of the size of a sixpenny piece was found in it at the position occupied by the insertion of the appendix. The whole appendix had sloughed off. The right side of the abscess had been drained by the right Fallopian tube, which was slightly thickened but pervious, and had stinking pus in its lumen. The opening in the cæcum was sutured, the right Fallopian tube was excised, and a large drain opening was made from the bottom of Douglas's pouch into the vagina; the abdominal wound was entirely closed except at the lower end, where a glass tube was left. Cultivations from the gauze drain removed on Oct. 14th, four days after the operation, showed the bacillus coli communis only. On the 18th, eight days after the operation, there was a free discharge of fæcal matter and pus from the vagina, and the temperature rose to 102°. This discharge continued, and on the 24th she was very ill, with a profuse discharge of fæces and pus from the vagina and from the lower part of the abdominal wound, and a temperature of 103° in spite of frequent douching through a tube introduced into the vaginal opening. Constant irrigation was now adopted, and the cavity was flushed through from the vagina to the abdominal wound with sterile hot saline solution day and night. If the irrigator was stopped for a few hours her temperature rose and the irrigator had to be restarted. It was continued until Nov. 9th. She was discharged nearly healed on the 20th. In September, 1900, she returned to have a small ventral hernia, of the size of the drainage-tube, at the lower part of the ventral scar, operated upon. She was in good health, and bimanual examination could discover no sign of adhesions or any other abnormality in the pelvis.

CASE 4. *Pelvic abscesses in a male simulating distended bladder; abscess opened and drained through the abdomen; subsequent rupture into the rectum; sinus persisting.*—A young man, aged 18 years, was admitted to the Royal Infirmary, Newcastle, on May 9th, 1900. He was in good health until 10 days previously, when he was awakened out of sound sleep at 2 A.M. with a severe pain all over his abdomen and vomiting. Since that time he had slept little on account of the pain, had perspired profusely at nights, and had frequently vomited. He had had no urinary trouble. On admission he was slightly jaundiced. His pulse was good (77), and his temperature was 100·2° F.; his tongue was coated with a thick brown fur. The pain came on in paroxysms, making him cry out. His abdomen was enlarged above the pubes by a rounded elastic swelling resembling a distended bladder (see Fig. 4). The bladder was emptied by a catheter, but this made no change in the swelling. Per rectum the pelvic floor was bulged down by a tender swelling which felt like a cyst projecting against the anterior wall and continuous with the suprapubic swelling. Distinct intestinal movements could be felt in the right iliac region.

The abdomen was opened from the umbilicus to the pubes. Some free clear fluid escaped on opening the peritoneum. The intestinal coils in the lower part of the abdomen were congested and matted together with purulent lymph. The cæcum was so covered up by adherent intestine that it was considered to be too dangerous to search for the appendix. The upper portion of abdomen was packed off and the patient was turned over on his side. By separating the adherent intestine above the pubes a large collection of foul pus was tapped and a glass tube was introduced into the cavity and packed round with iodoform gauze. The entire wall of the abscess was formed by adherent intestinal coils. The bladder was protected by adherent small intestine from contact with the pus, hence the absence of bladder symptoms usual in pelvic peritonitis from this or other cause. On May 13th, three days after the operation, he was much better, but still slightly jaundiced. The gauze packing was removed; the discharge from the wound was fæcal. On the 20th his temperature was 102°. He was complaining of abdominal pain and of rectal tenesmus. On the 22nd a distinct soft bulging was felt in the anterior wall of the rectum. The rectal mucous membrane over this was œdematous. He still had tenesmus. On the 23rd it was decided to open the abscess in the recto-vesical pouch through the anterior wall of the rectum and an enema was given. A quantity of pus was passed with this and relief followed. Nothing further was done and he left the infirmary on June 10th in good health, but with a sinus at the lower end of the abdominal wound, which still persists (September).

The importance of bi-manual examination in the male may be illustrated by the following case:—

CASE 5.—A man, aged 41 years, was admitted to a private hospital on June 20th, 1900. He had previously had many slight attacks similar to the present. On June 13th, at 3 A.M., he was awakened by a violent pain, which did not pass off as others had. The following morning he was seen by Dr. McBean, who found his temperature raised. He had vomited, but only slightly. An enema which was administered moved his bowels and gave him considerable relief. He was kept in bed, as the abdomen remained tender in the right iliac region. During the 14th he was a little sick, the pain was less, his bowels were moved, but the temperature continued at 100° to 101° F. On the 15th the question of operation being raised, he was seen in consultation with Mr. W. G. Richardson, who then found him lying in bed comfortably on his back with his legs fully extended. He could move freely in bed; there was no sickness; the tongue was dirty; the temperature was 99° and his pulse was 90. He looked well. In the right iliac region there was a distinctly tender point, but no lump to be felt, and palpation was easy. On the 20th, the day of admission, the patient, a stout, robust man, was not looking so well. The tongue was dirty; the temperature was 100°; there were more local tenderness and rigidity in the right iliac fossa, but no definite swelling. Bi-manually (a finger of the right hand in the rectum and the left hand on the front of the abdomen) a definite tender tumour of the size of a large orange could be felt hanging into the pelvis and fixed to the pelvic brim.

Operation was performed on June 21st. On opening the abdomen the caput cæcum was seen to be adherent low down to the brim of the pelvis with a loop of ileum, which was congested and dilated. The abdominal incision was extended from the back of the ilio-costal space to one inch above the symphysis pubis, the deep epigastric vessels being clamped before their division. The peritoneal and pelvic cavities were then packed off with gauze and an abscess containing gas and stinking pus was easily opened by separating some flimsy adhesions in the angle between the cæcum and ileum. The abscess was cleansed and the appendix was seen hanging over the brim of the pelvis. It was yellow and entirely gangrenous; it only required to be pulled off the cæcum like a slough. The abscess cavity was drained into the loin and packed with iodoform gauze, which was brought out there. The pelvic cavity was drained by a glass tube in the middle line in the inner angle of the wound, in case any infection of the pelvis had occurred before or during the operation. The wound between the drains was entirely closed. Two days after the operation the pelvic tube was removed. On July 18th, a month after the operation, the patient went home with two small granulating sores. Three months later, these surfaces never having been quite healed, he did not feel so well as usual. He was sickly and off his food. When lying in bed he smelt a strong odour and found that warm fluid was trickling down his side. On examination it was discovered that an abscess had opened at the outer angle of the wound, which had been healed for two months, an exit thus being given to about one ounce of pus.

Many patients with appendicular abscess (more than is generally admitted) recover if left alone, and the majority do so by a discharge of the pus into the intestine, the cæcum, or the ileum, close to the ileo-cæcal junction, being the seat of election. The quantity of pus escaping from the abscess may be so large as to be recognisable by anyone when it has been discharged from the bowel, or it may be so small and undergo such changes in its passage as to elude skilled observers. I have on many occasions whilst operating demonstrated the communication between the abscess cavity and the interior of the bowel by passing an instrument into the latter (see Case 6, Case 8, and Case 11).

The discharge of an abscess through the abdominal parietes appears to be usually considered the most ordinary method of spontaneous cure of the abscess, but allowing due deductions to be made for preventive operation it is comparatively rare. Every such case is recognised, but the diagnosis of pus discharging into the bowel can seldom be made on account of the difficulty in its recognition except by operation or by post-mortem examination. I have previously recorded (in the *Edinburgh Medical Journal*) a case in which an appendicular abscess discharged externally and into the bladder with the result that the patient recovered, and in the same paper I report a case in which the abscess discharged into the pleura with a fatal result, though it is possible for a cure to be brought about in such instances by the discharge of pus either through the lung or the chest wall. I have also observed several cases of pelvic abscesses, probably the result of appendicitis, cured by the discharge of pus through the rectum or vagina.

When the tender swelling has been recognised a sudden return of severe pain, followed by collapse, sometimes fatal in a few hours (as in a case recorded in the paper before mentioned), and followed by symptoms and signs of general peritonitis, indicates rupture of the abscess into the general peritoneal cavity. The following case illustrates some of these points.

CASE 6.—A man, aged 23 years, was sent by Dr. P. R. Ingram of Wallsend to a private hospital on March 15th, 1900. When at work on March 3rd he felt pain in his abdomen and went home. Dr. Ingram saw him and sent him to bed. On the following day Dr. Ingram found a definite swelling in his right iliac fossa, and from the symptoms and signs recognised the case as one of severe appendicitis and advised immediate operation. The patient and his friends resented this suggestion and the ordinary methods of medical treatment were adopted. The patient progressed favourably; indeed, he seemed so well as to be convalescent, until March 13th, when reaching out of bed to get something he was suddenly seized with intense abdominal pain. Dr. Ingram saw him shortly after and found him in a condition of collapse, with cold extremities, feeble rapid pulse, and frequent vomiting. On the following day I saw him. He then had all the symptoms and signs of general peritonitis. We discussed the question of operation, but, recognising the grave condition of the patient, the seriousness of an operation in his condition, and the improbability of any good result, we decided to wait and watch for further attempts at localisation of the pus which we felt sure was present. On the following day he was driven carefully in an ambulance bed to the private hospital. On admission his condition was found to be no better than on the previous day. On March 16th, at 2 P.M., the patient appeared to be dying and there were signs of a large quantity of fluid in his abdomen. With just sufficient chloroform to dull his sensibility a short incision was made above the pubes through which a glass drainage-tube was introduced into the pelvis. A large quantity (about a quart) of pus and stinking fluid escaped. He died at 4 P.M.

Post-mortem examination showed general peritonitis. There was a large quantity of pus in the pelvis, with much lymph and matting of the whole intestines. The left side of the abdomen was least involved and there was no fluid there. The hepatic pouch was a large abscess cavity filled with pus and altered blood. The cavity was lined by soft lymph and extended as far down as the brim of the pelvis. On the outer side of the cæcum and the ascending colon there were several (five or six) perforations from a quarter to three-quarters of an inch in diameter, which appeared as if caused by the escape of pus in the bowel. The inside of the cæcum and colon was inflamed and the cæcum contained blood little altered. The inflamed appendix lay along the outer side of the ascending colon with its tip extending into the hepatic pouch. The tip was sloughing and perforated. No enterolith was present.

The abscess, although of appendicular origin, may be in a position remote from the appendix and may show itself at a considerable distance of time after the original attack (Case 5). The following cases will illustrate this point and also prove that general septic peritonitis can be spontaneously recovered from, a fact perhaps not sufficiently recognised.

CASE 7. *Appendicitis and general peritonitis; recovery from general peritonitis; death from peritoneal abscess due to localisation of a general infection.*—A girl, aged 19 years, was admitted to the Royal Infirmary, Newcastle, on August 30th, 1900. She was in her usual good health until 11 days before, when she was suddenly seized with a very severe pain in the right iliac region which made her sweat and vomit. She had had similar attacks previously, but not so severe, and they had always passed off in a few days. On this occasion the pain had got less, but had never left her. She had painful frequent micturition, but no retention, and her bowels acted regularly every day without diarrhœa or tenesmus. Her abdomen swelled and was very tender especially at the lower part. She had gradually got weaker, because, as she said, she had had no sleep at all since her illness commenced and had not been able to take any food. On admission she looked very ill; her face was flushed and slightly cyanotic (suggesting pneumonia), her pulse was 100 and soft, and her temperature was 99·6° F. The upper part of her abdomen moved freely with respiration; below the umbilicus there was no movement and there was a definite swelling like a six months' pregnant uterus. A catheter drew off four ounces of urine but did not affect the swelling. No definite mass or tumour could be felt. The hypogastric tumour and the right flank were dull on light percussion; both were resonant on strong percussion. No bulging could be felt per rectum or per vaginam.

On opening the abdomen the omentum was exposed adhering to the right side of the anterior pelvic peritoneum. Behind it were matted small intestines extending down to Poupart's ligament. An opening was made by separating a coil of small intestine from the brim of the pelvis when foul pus and gas began to escape. This was mopped away steadily as it appeared and took some time to discharge, as 30 or 40 ounces were estimated to be present. When the discharge finally ceased the cavity was freely opened up and packed with gauze. It occupied the whole available pelvis. The appendix was found lying on the outer side of the cæcum and was there adherent. It was gangrenous at its tip which was lying loose. In close relation to it was an enterolith. The appendix was removed and the abdomen was about to be closed when pus was seen oozing from above. A collection was then discovered in the liver pouch. This was mopped up and the pelvis and this cavity were drained by large indiarubber tubes and gauze brought out at the back. The patient was very ill immediately after the operation but rallied completely in four hours. 10 hours after the operation she died.

On post-mortem examination the opening on the right side made at the operation led into the large abscess cavity formed by the pelvis and roofed in by matted small intestine and omentum. Under the right lobe of the liver there was a granulating cavity with a trace of pus in it. The rest of the peritoneal cavity was free from pus, but everywhere there was a little sticky lymph and some recent flimsy adhesions (evidence of recent general peritonitis). The margin of the right lobe of the liver was adherent to the parietal peritoneum, and on tearing through these adhesions a large quantity (fully two pints) of very foul pus similar to that found in the pelvis escaped. This sub-diaphragmatic abscess had pushed the diaphragm to the level of the upper border of the third rib anteriorly and laterally. Below, it was confined to the right lobe of the liver. There was some clear fluid in the left pleural cavity.

CASE 8. *Appendicitis; general peritonitis, which had become localised; abscess; acute septicæmia; death.*—A female, aged 51 years, was admitted to the Royal Infirmary, Newcastle, on Sept. 1st, 1900. She was perfectly well until six weeks before, when her illness commenced suddenly with pain in the right side and vomiting. A bad attack of "inflammation of the bowels" followed this and for some days she was very ill. She gradually improved until two weeks before her admission, when she had another attack of pain. The lump in the side was only noticed two days before. On admission she looked ill and feeble, her temperature was 101° F., her pulse was quick, and her abdomen was distended. In the right loin there was a large swelling like a kidney tumour, which projected anteriorly and extended inwards close to the umbilicus downwards as far as the anterior superior

iliac spine, and upwards as far as the costal margin. On percussion the swelling was dull in the loin and over the greater part of the front.

Operation was performed on Sept. 1st. On opening the abdomen the colon was found to be densely adherent to the parietes. In front of the colon and lying between it and the anterior abdominal wall immediately below the liver a large collection (two pints?) of pus was opened. No prolonged search was made for the appendix. The abscess was drained with a large tube and gauze. On the 2nd, the day following the operation, in the morning she was fairly well; her pulse was 128 and her temperature was 99·6°. About mid-day she became delirious. From this time her temperature gradually rose, the delirium increased, and symptoms of acute septic poisoning developed. She died on the 6th with a temperature of 106°.

At the post-mortem examination the abscess which had been opened lay on the hepatic flexure of the colon and was limited above by the liver. There was no collection of pus in the liver pouch, which was obliterated by dense adhesions. The pelvic cavity was filled with pus and liquid fæces and was shut off from the rest of the abdomen by a roof of matted small intestine. The general peritoneal cavity was obliterated by adhesions, most marked on the right side and diminishing towards the left. The small intestines were universally adherent by long flimsy adhesions, producing an appearance as if the intestines were wrapped up in a network of fine cord with meshes. Both liver and spleen were fixed by firm adhesions. The appendix was lying on the outer side of the cæcum; there was an old perforation within half an inch of its cæcal attachment. On the lower part of the cæcum there was a perforation three quarters of an inch in diameter, which looked as if it was due to ulceration from without into the bowel. There was marked colitis but no ulceration of the colon.

CASE 9. *Appendicular abscess opened and drained; general peritonitis; recovery; death from residual abscess.*—A miner, aged 24 years, was admitted into the Royal Infirmary, Newcastle, for the last time on Dec. 5th, 1899. Seven months before he had been in the Infirmary under Mr. Morison's care for acute appendicular abscess. He was very ill at that time, and it was doubtful whether the peritonitis was still localised or had then become general. On May 25th, 1899, with a minimum of anæsthetic his abdomen was opened on the right side and a large quantity of pus escaped. He was discharged well 23 days afterwards and went to work six weeks later. For six months he felt quite well and did his work, which was heavy (hewer in the pit), regularly, and he was often drunk. Two months before he had been found asleep and drunk on the railway, where he had probably been lying for some hours, and was very cold when discovered. Next day he did not feel well, was sickly, and vomited after taking an aperient. After staying in bed for a fortnight he noticed a small lump of about the size of the end of his finger near the middle of the old scar. This burst and flatus escaped from it. On admission he was much emaciated and anæmic, with a weak pulse and a temperature varying from 99° to 102·6° F. There was a fæcal fistula at the centre of the old incision discharging a quantity of pus and fluid fæcal matter. No mass was to be made out and nothing further was discovered on bi-manual or rectal examination. He continued steadily to lose ground and had a regular morning fall and evening rise of temperature, with profuse night sweats, but no definite indication for operation could be found. On Dec. 17th (12 days after admission) he was suddenly seized with a sharp pain in his right chest and difficulty in breathing. He was much collapsed and looked as though he would die. Next day all the physical signs of consolidation were found and acute lobar pneumonia was the diagnosis made. During the following days his general condition improved and his temperature and other symptoms and signs entirely accorded with the diagnosis. A crisis occurred on the 22nd and the temperature rapidly declined, becoming subnormal on the 25th, when he died unexpectedly.

Post-mortem examination showed that the fæcal fistula led down into the pelvis and its internal orifice was found to open into the ileum about three inches from the ileo-cæcal junction. The appendix was discovered on the inner side of the cæcum, pointing inwards and upwards, and close to it an enterolith was lying free. There were cicatricial changes in the appendix and a perforation was discovered in it when surrounding adhesions had been separated. There was no pus and there were few adhesions in the neighbourhood of the appendix. In the rest of the abdomen the intestines were all matted by old firm adhesions, especially marked in the pelvis; between the adherent coils there were numerous small pockets of pus. The whole of the organs in the upper abdomen were densely adherent. In separating the right lobe of the liver an immense abscess was opened into; it was bounded on the inner side by the liver, on the outer by the chest wall; below, it had gone through the right kidney capsule and destroyed some of its substance (it had not invaded the liver); above, it had gone through the diaphragm by a sloughy opening large enough to admit a finger, and there was fully a quart of pus in the right pleura. The lung was compressed but was not solid as had been supposed.

Treatment.—Operative treatment alone requires consideration. It is dangerous and neglectful to leave pus alone in the peritoneal cavity. In the case of pelvic abscess thought to be due to appendicitis, if the pus can be liberated per rectum in the male and per vaginam in the female this is undoubtedly the safest measure and should consequently be the method of choice. If there be a painful bulging into the anterior wall of the rectum of the male, and there is œdematous mucous membrane over it, and if these are accompanied by rectal tenesmus and passage of mucus, or if in the female the posterior vaginal wall above, in contact with the pouch of Douglas, is distended, this plan is indicated. This operation I have done many times and find that it is both simple and safe. Its one drawback is that the appendix is left and in a considerable percentage of cases causes further trouble. Of this fact the patient should be warned, and told to come back for the removal of the appendix at the earliest period if the pain recurs.

The operation—With the patient under an anæsthetic and in the lithotomy posture the skin surrounding the anus and genitals should be cleansed, shaved, and antiseptic ised. In the case of a male patient the anal sphincter is next dilated and the rectum is cleansed with boric lotion. The upper part of the rectum is then packed with iodoform gauze, which is secured by a pair of forceps or silk. With a Sim's vaginal speculum the posterior wall of the rectum is retracted and the index finger of the left hand of the operator feels for the most bulging œdematous spot on the anterior rectal wall. A metal catheter in the bladder empties it and serves as a useful guide as to the position of the prostate, above which the rectal puncture has to be made. A long strong hypodermic needle is guided by the finger in the rectum up to the spot indicated and is pushed through into the swelling. If pus can now be withdrawn, as is generally the case, a director is forced into the abscess guided by the needle, and the latter is then taken out. A pair of forceps pushed along the director and dragged out open makes a large hole for the pus to escape. The forceps should be dragged out in such a way as to make the opening vertical. If it is made transverse the large vessels running vertically downwards may be torn across and cause serious hæmorrhage. During this time the director should be held in position in the abscess cavity to serve as a guide for a strand of iodoform gauze, one end of which should be left in the abscess and the other outside of the anus. The protecting iodoform plug should then be removed from the rectum and the operation is complete. The after-treatment consists in keeping the external parts clean, dusting with boric powder, and the frequent renewal of an antiseptic pad. In 48 hours the gauze-plug is removed by drawing on the outside end. In females by the same manœuvres the pouch of Douglas is drained through the vagina. The following case illustrates such treatment in a virgin female.

CASE 10.—A girl, aged 19 years, was admitted to the Royal Infirmary, Newcastle, on August 14th, 1899. Five weeks before, at 10.30 A.M., she had a severe attack of cramp-like pain across the lower part of the abdomen which doubled her up and made her feel so ill that she was at once obliged to go to bed. As soon as she got into bed she vomited. She had to stay in bed for three weeks, and her pain was only relieved when she got "pills." She had had no bladder or rectal trouble and her bowels had been regular. She had been treated during the last two years for anæmia and had seldom menstruated. On examination of the abdomen a tender indefinite mass could be felt filling the hypogastrium. Per vaginam the vagina was small and virginal. The posterior fornix was bulged downwards by a tender swelling, filling the pouch of Douglas, and a uterine probe showed the uterus to be lying above and pushed forward by this swelling. The diagnosis arrived at was that of ovarian cyst inflamed and impacted in Douglas's pouch. The abdomen was opened between the umbilicus and pubes and the pelvis was found to be hidden by inflamed adherent intestinal coils. The patient was next placed in the lithotomy posture and a hypodermic needle was guided through the vagina into the swelling behind the uterus. This demonstrated the presence of pus. The vagina and its outlet were enlarged by an incision in the ischio-rectal fossa of the same sort as is made in lateral lithotomy, and a further incision in the posterior fornix allowed of the escape of about a pint of pus. The cavity was packed with iodoform gauze and the abdominal wound was entirely closed. On Oct. 3rd, 1899, she returned to report herself as entirely recovered.

In women the catheter should be passed every six or eight hours till the plug is removed, and as this causes no perceptible irritation it can be left for a longer time than it can be in the rectum where it is apt to give rise to some discomfort. The after-treatment is otherwise similar. No douching is necessary.

In my previous paper in the *Edinburgh Medical Journal*, already referred to, the following sentence occurs: "My position with regard to appendicitis with abscess is this: that in the majority of instances the appendix should be removed at the same time that the abscess is evacuated, and that this can be done without risk and with great advantage to the patient, but that in a minority of cases the operation should be confined to the treatment of the abscess." Since this was written the minority has dwindled, and at the present time I advise the removal of the appendix in nearly every case, feeling that where it has been left the operation is an incomplete one (Case 2). The following case is also a striking example.

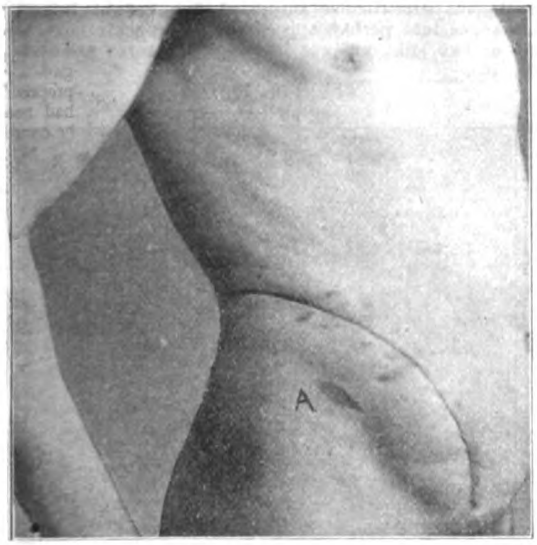
CASE 11.—A man, aged 23 years, was admitted to the Royal Infirmary, Newcastle, on Dec. 23rd, 1899. Three years before the patient had an acute attack of "inflammation of the bowels," followed by abscess. The attack came on suddenly with pain all over the abdomen, becoming localised in a few days in the right iliac region, where a swelling appeared. At the end of five weeks he was very ill and Mr. Morison was called in and operated at once, letting out a large quantity of matter. A tube was left in for three weeks and the wound healed in two months. At the end of three months from the commencement of his attack he went to work feeling quite well. Six months after the operation the patient had another similar attack and a lump formed in the same position as before. After two weeks the swelling got so large that another operation was advised by his medical man. Immediately afterwards he had a copious loose motion containing a

large quantity of yellow matter, and by the next day the swelling was gone and he was able to get up. Since that time he had had four or five attacks at intervals of a few months, never lasting more than a few days and never severe. Three days before admission his last attack commenced and on the second day he observed a swelling. On admission his temperature was 99° F. and his pulse was 99. The scar of the old incision was seen in the right iliac region. His abdomen was rigid and tender on the right side, and in the right iliac region there was a definite swelling. It was immediately above the centre of Poupart's ligament, was resonant on light percussion, and was of limited area. At the operation, after the evacuation of some pus, the perforated appendix was found lying in the sub-cæcal pouch and was densely adherent.

The operation should be done with the object of draining the abscess and removing the appendix and to do this safely undoubtedly requires great care and some practice. It also demands that the patient should not be too seriously ill to tolerate a fairly long operation; that skilled assistance shall be available; and that the surroundings can be so adapted as to approach a hospital standard.

Preliminary treatment.—Except in acute and urgent cases five grains of calomel should be given by the mouth and five hours later a pint enema of salt water. During this time the skin of the right side of the abdomen and back can be prepared as for an ordinary operation, bearing in mind the fact that rough scrubbing may cause diffusion of a localised collection of pus. The patient, surgeon, assistants, nurses, instruments, &c., are prepared with the same care as for any other operation. The incision (for advantages of this see my previous paper in the *Edinburgh Medical Journal*) is made on a line drawn from the back of the right ilio-costal space at its centre to one inch above the symphysis pubis (see Fig. 7). It is commenced in the middle third of this line,

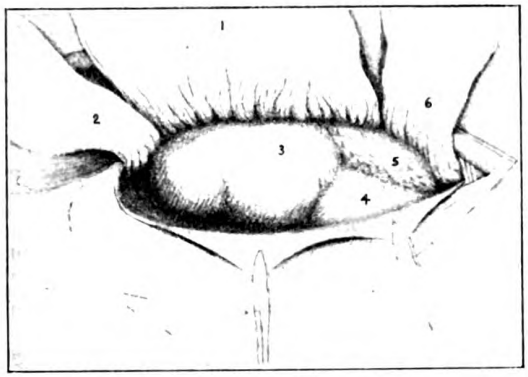
FIG. 7.



and the abdomen is, when possible, opened here for about three inches. In ordinary abscess cases it is then prolonged to the back of the ilio-costal space and in difficult cases anteriorly to the linea alba. In dividing the abdominal wall branches of the circumflex iliac artery will be encountered behind, and in front, close to the edge of the rectus muscle, the deep epigastric vessels are met with; as a rule the incision stops here, but should they require division it is important to expose them by dissection with the knife from the front and to clamp before cutting them, as if the abdominal wall is divided with scissors and the vessels are not seen and secured they retract as soon as cut into the loose sub-peritoneal tissue and are difficult to find. Through the preliminary short incision the peritoneum in ordinary cases is opened and the diagnosis and position of the abscess are verified. When the abscess is adherent to the abdominal wall the muscles overlying it are œdematous, and as the pus is approached the tissues become more infiltrated and dense. Instead of opening the abscess by a continuation of the dissection I prefer at this stage to extend the incision to the back, to open the peritoneum where it is free posteriorly, and to pack off the peritoneal cavity all round the adherent abscess before opening it from the outer side. When the abscess is lying on the outside of the cæcum or ascending colon it is opened by this incision and can be fully exposed from the back and outer side, allowing the appendix to be excised without disturbing surrounding adhesions or opening the general peritoneal cavity. In very acute cases the cellular tissue and muscles of the abdominal wall will be œdematous even though the abscess is not adherent to the parietes. In some cases the cæcum and colon are adherent to the parietal peritoneum and without due care may be injured in dividing the anterior abdominal wall. This is to be avoided by recognising the peritoneum when reached and by pinching it up between the fore-finger and thumb. A non-adherent peritoneum rolled between them feels thin, can be drawn forward, caught by two pairs of hæmostatic forceps and opened. If the bowel is adherent underneath the peritoneum cannot be drawn into a thin fold and must be opened by careful dissection.

In all cases when the abdomen has been opened fully the first step is to pack the peritoneal cavity with long thick strips of sterile gauze wrung out of normal saline solution (see Fig. 8). Need I add that two responsible persons should

FIG. 8.



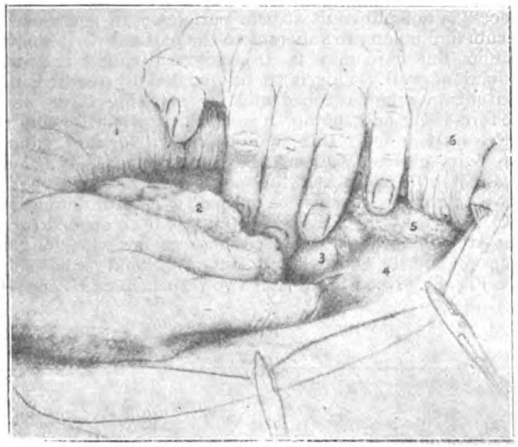
1, Gauze in general peritoneal cavity. 2, Gauze in hepatic pouch. 3, Cæcum. 4, Abscess. 5, Omentum. 6, Gauze in pelvis.

count these strips independently; that the number should be written down before the operation; that strips must never be cut; and that when the operation is finished the strips of gauze should be again carefully counted? The packing must be done with great care to avoid the separation of adhesions and possible escape of pus, and this is best accomplished by opening the wound and drawing forward the anterior abdominal wall with retractors.

The chief object of this operation is to carry out every step with the parts to be manipulated well exposed to view, and until this can be done satisfactorily the operation wound must be enlarged. By the aid of suitable retractors, and with the incision previously mentioned carried as far forward as the middle line, the most difficult conditions in the lower abdomen or pelvis may be dealt with (see Case 2). When the peritoneal cavity has been fully protected as described the next step is to empty and to cleanse the abscess. This is to be entered from its outer side by pushing the cæcum and ascending colon inwards, and upwards, too, if needful. A steady and slow separation with the fingers allows the pus to escape gradually and it can be mopped up with gauze as soon as it appears (see Fig. 9). If there is a large collection of pus its escape is expedited by turning the patient over towards the right side and enlarging the opening. As soon as the pus ceases to flow from the cavity the abscess is more fully exposed by the separation of adhesions. Its cavity is wiped out with gauze and the appendix is searched for. It may be seen at once or may be most difficult to discover even after a prolonged search. Occasionally it may be felt when it cannot be recognised, its appearance being much altered by the conditions present. The superior longitudinal band of the cæcum leads to its base, but this cannot always be followed. A stercorolith in the cavity of the abscess is usually lying close to a perforation in the appendix and may guide to it. A rounded thick body felt between the finger and thumb may turn out to be the appendix.

With due care it can very rarely remain undiscovered. Then the abscess cavity is to be packed with clean gauze and the appendix is excised. The method of accomplishing this varies with the conditions found. The appendix may

FIG. 9.

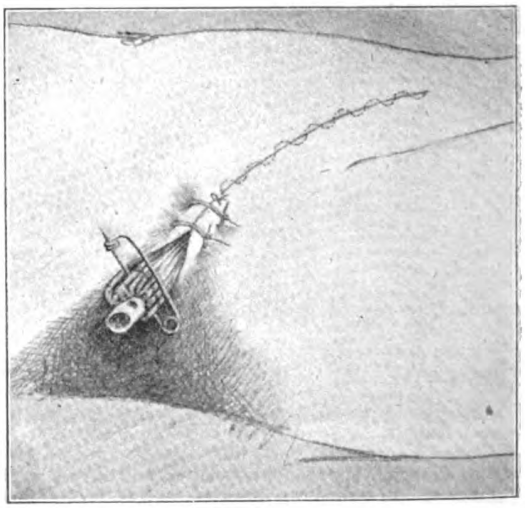


1, Gauze in general peritoneal cavity. 2, Gauze in hand. 3, Cæcum. 4, Abscess. 5, Omentum. 6, Gauze in pelvis.

be thickened and densely adherent to the surrounding tissues throughout or entirely gangrenous and lying almost loose in the centre of the abscess confined by the flimsiest adhesions In the case of the former its removal is attended by difficulty and danger; in the latter it is easy and safe. Ordinary adhesions are most readily separated by tearing with dissecting forceps, always bearing in mind the risk of an injury to the adherent bowel and that damage to the appendix need not be feared as it is about to be removed. As a rule the abrupt closed end of the appendix will be a suitable place to commence separation, but occasionally it is easier to divide the appendix between two clamp forceps at its cæcal attachment and leave its extremity to the last. In cases with dense adhesions (as in Case 2) I have since then divided the peritoneal coat of the appendix and without further difficulty or risk have shelled out the whole of its inner coats, thus obviating further appendicular trouble. When the appendix has been separated its mesentery must be divided and the vessels secured either after or before division, setting it free up to the cæcal attachment. When the whole appendix and its mesentery are involved in the abscess the mesentery and vessels may be so sodden and so friable that no ligatures will hold. Gauze packing is then to be relied upon for the arrest of bleeding. A strong ligature is tied tightly round the base of the appendix, which is firmly held between a finger and thumb above to prevent the escape of its contents, and it is cut through, leaving about one-eighth of an inch beyond the ligature. The mucous membrane of the stump is next rubbed with pure carbolic acid and dried and if the wall of the cæcum surrounding it is not inflamed and friable the stump can be pressed into the cæcum where it is retained by a purse-string suture as in ordinary non-suppurating cases. When the cæcal wall is thickened from inflammation sutures as a rule will not hold and gauze packing and free drainage must provide for leakage. Ligatures and sutures for this purpose should be of catgut and digestible, as it is impossible to avoid infection of them. The temporary gauze packing is now removed from the abscess cavity and replaced by an indiarubber drainage-tube, the inner end of which lies in the abscess, the outer in the back of the wound, and by a gauze packing (iodoform or gauze wrung out of corrosive solution and sprinkled with boric powder), so arranged as to check all oozing from the cavity, to depress the stump of the appendix, and to protect the general peritoneal cavity. At the same time it is well to remember that the gauze has to come out before the tube, and the ease with which this is effected is in proportion to the care and method bestowed upon its introduction. When this is all accomplished there is a general washing up of the patient, and fresh towels are placed over the soiled ones. The peritoneal gauzes are now removed, with the exception of the piece last introduced. All are counted, and the suturing of the wound is taken in hand. To this I attach very great importance, for unless it is properly carried out a hernia of the scar may be expected. If it is done in the manner about to be described this is most unlikely to occur. I cannot in this connexion give any exact figures, but what I know sufficiently justifies, I think, an even stronger statement than that which I have made. Of considerably over 100 patients on whom I have operated for abscess of the appendix six have returned to consult me concerning a hernia. Three of these had small scars in the linea semilunaris and one in the linea alba, from which abscesses had been drained. None of them, with the exception of the last (Case 3), had had the appendix excised. The two remaining cases were operated upon by the method I have described, and both had an inguinal hernia on the same side as the scar which I scarcely doubt was a result of the diminished elasticity of the abdominal wall on that side. None that I have seen (and many of them have come for examination) or heard of have any hernia of the scar.

The whole wound is closed except for one inch behind, unless in exceptional instances (Case 5). The first row of sutures (all are of catgut) includes the peritoneum transversalis fascia and transversalis and internal oblique muscles, and is interrupted. When this row is completed a paste made of iodoform powder and corrosive lotion (1 in 1000) is rubbed into the wound, which is cleared of all excess by thorough mopping with sterile gauze. The next layer of sutures, also interrupted, brings together the divided edges of the external oblique. A third row of interrupted sutures tacks the subcutaneous fat and deep layers of the skin to the external oblique muscle; and a fourth buried continuous subcuticular suture of fine catgut brings the skin edges into perfect apposition, except posteriorly, where one or two silkworm gut interrupted sutures are used (see Fig. 10).

FIG. 10.



After-treatment.—The dressing should be renewed frequently until free discharge has ceased. Every two hours is my rule for the first 12 hours after operation. In doing this it is unnecessary to disturb the gauze on the anterior part of the wound if it has been kept separate from the portion surrounding the drains behind. As soon as the serous oozing has ceased dressings should be less often disturbed unless a fæcal fistula develops, when a return to more frequent dressing is needful. On the evening of the operation day, if the patient be an adult, one-third of a grain of morphia is given hypodermically as in all of my abdominal cases. Until flatus has been voided—and this is aided by the passage of a tube into the rectum and by the administration of calomel (one grain hourly up to eight grains), and failing these by the administration of a turpentine enema (one ounce of turpentine and one pint of soapy water) on the second day—no nutriment is allowed by the mouth, nothing but sips of hot water being given. In a feeble patient nutrient enemata (two

ounces of milk, two ounces of beef-tea, and half an ounce of whisky) are administered during this time. On the third day a movement of the bowels is secured by the administration of an enema (one pint of salt water). On the fourth day the gauze drain is removed and care must be taken in doing this not to pull out or disturb the tube, through which a long strong probe may be inserted to prevent kinking whilst the outer end of it is steadied and held in place. On the sixth day, if the discharge is quite small in quantity, the tube can be withdrawn for half its length and cut off. In another few days, depending upon the amount of discharge, it may be altogether dispensed with.

A fæcal discharge from the wound is usually preceded by a rise in temperature. Neither require any special treatment unless in exceptional instances (Case 3), and the wound heals steadily if kept clean by frequently changed dressings. If the appendicular abscess has occupied a position in the abdomen internal to the cæcum drainage should be aided by tilting the patient over towards the right side. This is readily and comfortably done by placing a pillow lengthwise under the left side of the back when the patient is moved off the operating table into bed. No abdominal belt is needed after the wound has healed.

The mortality of this operation is small, and I cannot recall a single instance in which death could be attributed to it. At the present time and for this part of the country I would give the mortality of appendicular abscess at 8 per cent. of operation cases. This will diminish in the same remarkable way as that for strangulated hernia has done so soon as practitioners become more skilled at early diagnosis and realise more fully the need for operative treatment.

List of Cases of Abscess in Connexion with the Appendix Vermiformis.

Sex.	Date.	Condition.	Appendix.	Result.
	1899.			
F.	July 18th.	Abscess.	Removed.	Recovered.
M.	August 6th.	,,	,,	,,
F.	,, 14th.	Pelvic abscess.	Not removed.	,,
M.	Oct. 5th.	Abscess.	Removed.	,,
F.	,, 10th.	Pelvic abscess.	,,	,,
M.	,, 25th.	Abscess with pelvic peritonitis.	,,	,,
M.	Nov. 7th.	Abscess.	,,	,,
M.	,, 7th.	,,	,,	,,
M.	,, 16th.	,,	,,	,,
M.	Dec. 13th.	,,	,,	,,
M.	,, 23rd.	,,	,,	,,
	1900.			
F.	Jan. 18th.	,,	,,	,,
M.	,, 29th.	Abscess and pelvic peritonitis.	,,	,,
F.	Feb. 14th.	Abscess.	,,	,,
M.	,, 21st.	,,	,,	,,
F.	,, 24th.	,,	,,	,,
F.	May 7th.	,,	,,	,,
F.	,, 9th.	Abscess and suppurating ovarian cyst.	,,	,,
M.	,, 10th.	Pelvic abscess.	Not removed.	With a sinus.
M.	,, 14th.	Abscess.	Removed.	Recovered.
F.	,, 26th.	,,	,,	,,
M.	June 21st.	Abscess with peritonitis.	,,	,,
M.	,, 29th.	Abscess.	,,	,,
F.	July 27th.	,,	,,	,,
M.	,, 29th.	,,	,,	,,
F.	August 7th.	,,	,,	,,

CONCLUSIONS.

The early diagnosis of abscess in connexion with the vermiform appendix is of great importance.

A dangerous abscess may be present without any of the ordinary symptoms or signs of pus formation.

The diagnosis is based upon the history of an acute attack of appendicitis and the presence of a definite tender lump.

The position of the appendix and the relations of the abscess may be foretold by a careful study of the tumour.

The diagnosis of pelvic cases in women is attended by special difficulties. In men and women bimanual examination may clear up an otherwise doubtful case.

Spontaneous relief and possible cure may follow the discharge of pus into adjacent bowel.

An abscess, though of appendicular origin, may be remote from the appendix and may be residual. Many of such pus collections are due to the localisation of a general peritoneal infection which has been recovered from.

Early operation is the proper treatment and with few exceptions the vermiform appendix should be removed at the same time as the abscess is drained (pelvic cases form the chief exception to this rule).

The abdominal opening should be large enough to permit of perfect inspection of all manipulation and the abscess should be drained from behind.

To Mr. G. G. Turner, surgical registrar to the Royal Infirmary, Newcastle, I am indebted for an appended list of all cases operated upon by me at the infirmary and private hospital in which pus was found in connexion with the vermiform appendix during the past consecutive working 12 months. I am also indebted to him for the notes of the cases related. Mr. W. G. Richardson, assistant surgeon to the Royal Infirmary, Newcastle, has kindly supplied me with drawings made by himself to illustrate the positions of the varieties of appendicular abscess and the different steps of the operation described.

Newcastle-on-Tyne.

POINTS IN THE CLASSIFICATION AND DIAGNOSIS OF SOME JOINT AFFECTIONS.

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DURING the course of a year in Bath, as in most other balneological resorts, one is brought face to face with many difficult problems in respect to the classification and diagnosis of joint affections. And this is comprehensible when one considers how little is really known as to the etiology and pathology of most of them. I am writing this paper with the idea of drawing attention to certain points which have struck me as of importance and value, and as being of interest to others working in the same branch of medicine and also with the hope that by the exchange of views we may be enabled to come to some common understanding on various vexed points. For the present no two men seem to agree as to the diagnosis in certain classes of disease; for example, and to show how chaotic our ideas are, take that most common generic name "rheumatic gout." To judge from the number of patients labeled as suffering from that disease one would think it was the most common of all joint affections; yet what is the nature of "rheumatic gout"? Is it gout or rheumatism, rheumatism in a gouty subject, gout in a rheumatic, a disease *per se*, or rheumatoid arthritis? Such are a few of the questions which arise on seeing a case so labeled. On investigation such cases almost invariably can be placed in some more definite and scientific category than that of "rheumatic gout," whose one virtue seems to be that it covers a multitude of sins and errors in diagnosis, but whose entity as a separate disease is doubtful. This looseness in diagnosis in all joint affections arises not so much from want of knowledge or care on the part of those making the diagnosis as from the confusion of ideas which exists, more or less, in all our minds as to certain forms of disease. On reference to most text-books one is struck by the unanimity with which joint diseases are described as they have been described for years, irrespectively of the advance of science, and the absence of method in classing them according to their mode of origin. Now it seems to me that most arthropathies can be referred to several great classes: (1) the bacterial or toxic arthropathies; (2) the nerve arthropathies; and (3) the senile degenerative arthropathies. But besides placing all arthritic cases in these classes it is also possible further to

differentiate between the essential arthropathies—i.e., those in which the joint troubles form the principal symptom of the disease, and the accidental arthropathies—i.e., those which occur with a certain amount of regularity but are not essential symptoms of the disease in which they arise. Thus I should class as essential arthropathies rheumatism, rheumatoid arthritis, gout, senile arthritis, and pulmonary osteo-arthropathy, whereas gonorrhœal, scarlatinal, malarial, and nerve arthropathies are accidental but integral symptoms of some specific condition. I should also explain that by the expression "toxic" I do not wish to confine the meaning of the word to the products of bacterial activity only, but desire to include all products, whether elaborated by specific bacteria or arising from the tissues themselves or by chemical processes. Thus, I am enabled to place gout in a class with other diseases presenting many similar points of interest.

In studying joint diseases one sees how opinion has altered with regard to their origin. A few years ago the nervous origin of most of them was firmly believed in, yet now they can, to a great extent, be marshalled into the bacterial or toxic category. Whilst admitting that pure nerve arthropathies exist, yet from what we know of bacterial activity it certainly seems more reasonable to suppose that they or their products are the cause of most joint changes, rather than that some obscure nerve degeneration or reflex action should be so. As the specific cause in more and more diseases is found to be bacteria or their products, so does it become more likely that such micro-organisms are the cause of nearly all of them.

According to our present knowledge the more common arthritic troubles may be classed as follows:—1. Bacterial or toxic arthropathies: (*a*) bacterial—rheumatism, rheumatoid arthritis, gonorrhœal and scarlatinal arthritis (and probably malarial arthritis); and (*b*) toxic—gout and pulmonary osteo-arthropathy. 2. Nerve degenerative arthropathies, such as occur in tabes, ataxic paraplegia, &c. 3. Senile degenerative arthropathies, such as senile arthritis or malum coxæ senilis. Malarial arthritis may be classed provisionally as bacterial, for I take it that the malarial parasite may be regarded in its action as to all intents and purposes a bacterium, although differing considerably in its life-history.

Another point to notice is that the joint changes in any of the above complaints are not complications, but are all true manifestations of their separate disorders. They are not secondary or separate infections or diseases, but some doubt may still exist whether in a disease having a bacterial causation the bacteria themselves or their products are the cause of the symptoms. Some observers hold that it is the products which give rise to them, whilst others maintain that it is the micro-organisms themselves, and with these latter I side myself. What evidence we have is in favour of this view; for have not the micro-organisms of rheumatism, rheumatoid arthritis, and gonorrhœa been found in the joint structures and joint fluids? In diseases having constant and well-marked changes it is perhaps only natural to expect that the materies morbi itself should be found at the seat of greatest mischief. And if the changes were only caused by products elaborated elsewhere surely they would be much more amenable to treatment, more evanescent in their course, and more unstable in their character. And what better nidus could be found for any micro-organic growth than a joint, surrounded by a fluid medium richly-endowed with nutriment suitable to their growth? No, I cannot but feel that most forms of arthritis, whether the primary and principal manifestation of a disease or secondary and unimportant, must have bacteria as their provocative agent. So far science, in some conditions, has not found the bacterial agent, but all the same the infective character of most of them is manifest, and so, until more perfect and fuller knowledge is ours, one must rest content.

In considering various points of interest in the various diseases I have attempted to classify, one's attention is first turned to rheumatism. It is a big field and a big question for observation, but is much simplified if we consider all its forms and modifications as only so many different manifestations of one and the same poison. If this is not done, and if we look on them as due to secondary or separate infections—a condition of things of which there is no proof—a very large question for speculation is opened out. So far all positive proof lies on the side of one poison capable of affecting many and various structures, and from this standpoint I wish to study certain points.

The first point I wish to direct attention to is the occurrence of swellings or nodules in various structures—of these there are four separate kinds which come under notice with considerable frequency. The first of these is seen in muscular rheumatism, a disease which at one time was regarded as possibly a separate disorder, but which now, I think, is generally acknowledged to be only one of the manifestations of the rheumatic poison. In this form of rheumatism, especially in those who have had repeated attacks, one's attention is frequently attracted to masses or indurated patches in certain muscles pointing to an inflammatory infiltration of the muscle substance. These patches in themselves give no pain and the patients themselves are usually unaware of their presence. The masses are the result of an interstitial myositis, probably brought on by toxic action—at least, that is the idea of those who have studied the question (Leube and Adler).[1] Patients who present these changes not infrequently develop later arthritic changes and endocarditis. These patches are distinct from the subcutaneous nodules so often noted in rheumatism, rheumatoid arthritis, gout, &c., and which appear to be entirely formed of fibrous structure, thus differing from those already mentioned. These subcutaneous nodules have been looked on as being of important diagnostic value, as it was at one time thought that they only occurred in rheumatism and that therefore all cases in which they were seen were cases of that disease. But they have been observed fairly often in rheumatoid arthritis and they occur less frequently in gout, syphilis, influenza, &c. Dr. Hawthorne,[2] whose able paper on this subject has done much to bring the question prominently before the profession, contends that the mere presence of such tumours is no proof of rheumatism. With this I fully agree, for numerous instances of subcutaneous nodules have come under my observation in gout and rheumatoid arthritis and once in gonorrhœal arthritis. They also occur in Maltese fever, a disease which often presents arthritic changes. As one would expect from the nature of the disease, those seen in rheumatism are more transient in nature and smaller than those seen in rheumatoid arthritis. In this latter complaint they are most often seen in the chronic and later stages.

While on this subject there are yet two other forms of swellings in connexion with arthritis which well repay study. One of these is due to the swelling of bursæ in connexion with joint affections and is most frequently seen in chronic gout or chronic rheumatoid cases, and occasionally in rheumatism. Many of these swellings are merely enlargements of normal bursæ and having an intimate connexion with a joint, whilst others have apparently no connexion whatever with one and may even be situated at some distance from any joint. Both kinds are liable to chronic inflammatory changes and may even contain foreign bodies of a cartilaginous nature. They seldom suppurate—never in rheumatoid arthritis—and only as the result of secondary pyogenic infection. I remember one marked case occurring in rheumatism, the patient being a woman, and who, subsequently to her second attack of acute rheumatism, developed an enlarged bursa over the left olecranon. The bursa enlarged rapidly, causing considerable pain, but on treatment subsided almost as rapidly. Some months later she had another attack of rheumatism, less acute than the other, during which she had a similar enlargement on the other side, and which also subsided rapidly. The other and last class of nodular enlargement to which I wish to draw attention is that described by Heberden This form has often been considered to be merely a form of rheumatoid arthritis and to be only seen in that disorder. But, common as it may be in chronic rheumatoid arthritis, I have seen nearly as many in chronic gout. Of this I am certain—these nodes are osseous in character and arise principally from the ends of the phalangeal bones. They are permanent in nature, although sometimes an apparent diminution may be noted under treatment owing to the superimposed tissues being reduced in size.

It is of interest to consider the development and diagnostic value of these nodular enlargements, but with regard to the latter I fear it is small, and this is obvious when we consider that they must all originate through some irritation of the different structures involved. This irritation may be due to micro-organic activity or it may be due to some toxic action, but the result is the same—namely, a chronic interstitial

[1] Medical Record, 1900, lvii., p. 529.
[2] Rheumatism, Rheumatoid Arthritis, and Subcutaneous Nodules, p. 26.

change, resulting in one case in bony nodes, in another in bursal enlargements, in another in fibrous nodules, and in yet another in muscular masses. The explanation of these manifestations is therefore simple. Dr. F. J. Poynton and Dr. A. Paine having isolated their diplococcus in rheumatic nodules strengthens my chain of argument.

As aids to diagnosis I should say muscular swellings are most often due to rheumatism, small subcutaneous nodules also to rheumatism, larger ones to rheumatoid arthritis, bursal enlargements to chronic gout, rheumatoid arthritis, or rheumatism, and bony nodes to chronic gout or chronic rheumatoid arthritis.

Rheumatism has long been looked upon as an infective disease, but many and various have been the micro-organisms found. The researches of Dr. Poynton and Dr. Paine[3] go far to settle the question, but they are not conclusive, for it is too early to say whether the organism isolated by them is the only cause of rheumatism or whether it is only one of several which may give rise to rheumatic symptoms; and while we are still much in the dark as to mixed infections and what influence one micro-organism has upon another in determining its virulence and mode of growth, from the nature of the symptoms seen in rheumatism I feel sure only one organism is the cause. It seems evident that if a certain one is a constant feature in a certain disease or group of symptoms it must have some important bearing in its causation. A fact of importance from my present point of view is that Dr. Poynton and Dr. Paine have been able to demonstrate the presence of their diplococcus in the joint fluids and structures as well as in other sites and by inoculation have been able to reproduce the disease in animals. The inoculations gave rise to arthritis, bursitis, and teno-synovitis, as well as other symptoms, and from each of these inflammations they were able to isolate again the same diplococcus. The chain of evidence seems to me complete, but whether their organism will prove to be the only cause in all cases of pure rheumatism future scientific investigation alone will show. I cannot think that a disease with such well-marked and constant symptoms can be caused by more than one species of bacterium, although this one must have varying degrees of virulence, and its action must be governed by the attacked individual's power of resistance—the different sets of symptoms arising through the fact that the structures affected are influenced by those peculiar forces "natural selection" and "susceptibility of parts." What those forces are is not known, but it is a well-recognised fact that the various tissues of the body respond in different ways to different causes of disease, and that the same cause will affect different structures at different times under apparently similar circumstances, and even in the same person, in different ways.

On the subject of rheumatoid arthritis I feel strongly. One of the principal points in this disease which strikes an observer is that apparently under this name we have two conditions, one acute and the other chronic. The acute form of the disease is seen principally amongst children and in the comparatively young. It is not a common disease of later middle life or of old age. It is more common in females than in males and is the sequela, as a rule, of some other infective disorder, such as influenza, rheumatism, or tonsillitis. It is accompanied by a rise in temperature and swelling of the joints, which become tense from synovial distension or else soft and doughy, but with no cartilaginous or bony outgrowth; in fact, the joint presents an almost pathognomonic soft spindle-shaped enlargement. The extremities are cold and sweating and present a livid mottling, while numerous small freckles or patches of pigment appear on the skin and there may also be other vaso-motor or trophic changes. There may be great pain or almost none. Muscular atrophy is always present and shows marked selection in the muscles or group of muscles affected. Glands proximal to the affected joints are often enlarged, whilst anæmia may be a marked feature. Patients show a loss of fat and vital energy and usually present a peculiar facies which once seen is seldom forgotten. On the other hand, in the chronic cases, which may be chronic from the first or else which may be the later stages of an acute attack, the joints show a progressive crippling which becomes more and more marked as the disease advances. It is most frequent in middle life and in females, is accompanied by no fever, and the general health suffers little; it may affect only a few joints but more often many; it is very chronic in its course but is progressive with exacerbations. If chronic from the outset it usually begins in one small joint as a slight enlargement, which in time increases in size, and the disease then spreads to other joints until it may become difficult to move any joint, from stiffness, pain, and deformity. It is accompanied by much crepitation, usually of the coarser variety, and cartilaginous and even bony outgrowths appear round the margin of the joints as well as in the tendons, bursæ, &c. The movements of the limb may be much interfered with by adhesions, bands, and thickenings, whilst, in very advanced cases, even dislocations may occur. As a sequela of an acute attack, as the acute symptoms subside, the joints become more irregular, more crippled, and in fact come to present all the characteristics just described. It is not within the province of this paper to consider the pathological changes in the joints, but I would mention that the main points are, in the acute form, an inflammatory condition marked by ulceration and destruction of the joint tissues with no outgrowth or lippings, whilst the chronic form is characterised by hardening and thickening and with cartilaginous and osteophytic outgrowth and lippings.

I have so often insisted on the bacterial origin of the disease that I will not do so further here, beyond mentioning that it may be of interest to some to know that some little time ago Von Dungorn and Schneider[4] succeeded in isolating a small micro-organism which, on injection, reproduced the disease in animals. Their micro-organism was found in the joints and gall-bladder. I have not had an opportunity of comparing it with the micro-organism found by Dr. A. S. Wohlmann and myself, but it helps to prove that the disease is due to bacterial infection. Further scientific research will show whether it is due, as I believe, to one specific bacterium and that one the one found by Dr. Wohlmann and myself[5] or to other and mixed infections. As in the case of rheumatism we must wait for further proof.

The other point with regard to rheumatoid arthritis that I wish to touch on is the muscular atrophy so often seen. There are seemingly two varieties, one, exhibiting a selective affinity in its distribution for certain muscles or group of muscles, is seen in the acute forms; the other, as seen in chronic cases, being apparently merely due to disuse. In the acute form the atrophy is so acute and occurs so soon after the onset of the disease and whilst the joint changes, may be, are extremely slight and is so selective in character (the extensors and interossei being principally, but not exclusively, affected) as to preclude the possibility that it is the result of disuse only. It may affect one muscle only or a whole set, but it affects the whole muscle and not a part of it only. It often affects muscles proximal to the joint disease and the tendon reflexes are in most cases exaggerated. In the chronic cases the atrophy affects only those muscles not employed and in direct ratio to the amount of disuse and there is no increase in the tendon reflexes. It has been argued that the form seen in the acute cases, especially by reason of the exaggerated reflexes, lends conclusive support to the dystrophic theory of the origin of rheumatoid disease. But this does not follow, for we know other arthritic lesions may produce muscular wasting having similar characters. All it proves is that this particular form has all the characters of an atrophy due to nerve (probably spinal) irritation. Some hold that this irritation is set up by reflex action, but to my mind it is more probable that it is the result of toxic poisoning. We have no proof that bacteria themselves act on the central nervous system, but the whole nervous system seems to be peculiarly liable to the action of their poisons. For example, take the case of diphtheria or tetanus; or, again, certain toxins are known to act on the vaso-motor system and also on the trophic nerve condition of various structures. Thus tachycardia has been caused, according to Bezançon, by toxins. Bouchard obtained from tuberculin a substance causing dilatation of the blood-vessels, whilst Charrin and Gley obtained toxins with similar properties from the bacillus pyocyaneus, as also did Arloing from the staphylococcus aureus. Vierordt has reported a case of phthisis with neuritis of the vagus, and Semmola mentions the action of the influenza toxins on the vaso-motor centre. In no case of rheumatoid joint disease do the nerve troubles precede the joint manifestations; therefore they must in all probability arise secondarily

[3] THE LANCET, Sept. 22nd (p. 861) and 29th (p. 932), 1900.

[4] Münchener Medicinische Wochenschrift, 1898, Band xlv., p. 1369.

[5] THE LANCET, April 25th, 1896, p. 1120.

to them. But it has been argued that if muscular atrophy can, or does, arise through reflex impulses, so also may some peripheral irritation, say, from such an organ as the uterus, cause impulses capable of originating not only the muscular atrophy but also the joint lesions. This I cannot agree with. I do not deny that it is possible for reflex impulses to alter the nutrition of certain muscles and thus atrophy, but that they can give rise to grave organic changes of an acute and severe character seems to me impossible without at the same time producing some alterations in the nervous centres or in the nerves themselves easily recognisable on microscopic examination. Such changes have not been found, and until they are I cannot believe that reflex irritation alone can cause joint changes of the character seen in rheumatoid disease. In this disease, unless distinct nerve lesions are proved to exist, the theory of infection seems the more probable, the more easily understood, and the more true to clinical experience.

Gonorrhœal arthritis presents several points of interest from a diagnostic standpoint. The arthritis is always secondary to a gonorrhœal attack elsewhere, but it does not always imply that the primary attack is in the urethra. A considerable number of cases have followed infection of the conjunctiva, and this is peculiarly noticeable in children. The joint troubles are caused by the presence of the gonococcus in the joints, and it can be isolated and cultivated from the joint fluids. It is only found, however, with certainty in the early stages of the arthritis. The time of onset of the joint changes may vary: sometimes they occur within a week of the infection, but more often not until after three or four weeks. Cases have even been known to occur many months after the primary infection and when only a slight gleet has existed at the original seat of inoculation. The severity of the joint troubles, therefore, has no relationship to the severity of the primary trouble. It is most liable to affect the larger joints, especially the knees and the joints of the lower limbs rather than those of the upper. For the severity of the symptoms there is an indication in the great effusion of fluid, but the skin is seldom reddened. The pain experienced is not so severe as in a similar condition due to rheumatism. Cardiac disease is rare but not unknown. I remember well a case which in many respects resembled one of ulcerative endocarditis, and the nature of the disease was not cleared up until the occurrence of arthritis in both knee-joints many weeks after the patient was brought under observation. This case was also rather peculiar in the fact that the gleet was of the very slightest and that the joint troubles only came on as the temperature was falling and as the cardiac and general symptoms were improving. As a rule a gonorrhœal discharge renders the diagnosis easy, but in women this may not be so, as the import of a vaginal discharge may readily be overlooked or misinterpreted. It is most often mistaken for true rheumatism but the comparative absence of fever and its refusal to yield to the salicylates usually point out its true nature. Sometimes it may be confused with rheumatoid disease, more especially should it affect, as it may rarely do, the temporo-maxillary joints. It must not be forgotten also that in gout there may be a urethral discharge of a non-specific nature. However, as a rule, the joint trouble is so distinctive as to lead to little or no confusion.

Scarlatinal arthritis is a type of arthritis seen in several other infectious diseases. It is usually seen in severe cases and in adults and appears most often just as the rash is disappearing. It may affect several joints and may be so severe as to suppurate, but this is not common. The elbows and knees are the joints most frequently affected, and it has a greater tendency to affect the smaller rather than the larger joints and those of the upper rather than those of the lower extremities. As a rule the disease yields rapidly to the salicylates. This infectious form of disease is not one often seen at a balneological resort, but now and then we come across cases which have their origin in the poisons of infectious fevers and which have persisted for long periods. It is also of interest on account of the frequency with which scarlatinal and rheumatic patients develop chorea, possibly pointing to an intimate relationship between the two diseases. If we accept the discovery of a diplococcus (by Dr. W. J. Class[5]) as the specific cause of scarlet fever one is tempted to ask what is the relationship of this diplococcus to that of rheumatism as described by Dr. Poynton and Dr. Paine. It would be of great interest to know what their reaction is one upon another and what their influence was on each other's growth and virulence, and what influence they had on the production of chorea. Do their toxins when inoculated into the central nervous system produce choreic movements? Given a micro-organism as the cause of scarlet fever it is probable that the joint troubles are originated by the organism itself. Where suppuration occurs we know that pyogenic organisms must have reached the joints. If they, why not the others? If suppuration occurs it is almost certainly due to secondary infection and it is in such cases that the streptococcus pyogenes has been found. Class's micro-organism does not cause suppuration and it seems almost certain that the streptococcus is only an accidental secondary infection.

Malaria, to turn to a subject which is exciting at present a good deal of interest, is frequently associated with arthritic changes. In malarial cases I have seen joint troubles in two forms—one obviously due to true rheumatism and contracted probably at the same time as the malarial poison; the other form is rarer and occurs apparently as an integral part of a malarial attack. Two cases of the latter variety some time ago presented themselves to me. Both patients were in the army and their malaria had been contracted in Burma. They had never served in the Mediterranean. When first seen there were no arthritic symptoms, but they were both subject to malarial attacks at more or less irregular intervals. They had for some time past been subject to joint pains during these attacks and had therefore come to Bath to see what we could do for them. Soon after coming under observation they had attacks of ague, going through the cold, hot, and sweating stages, but as the temperature fell the patients complained of pains in the limbs and joints, the joints most affected being the knees, elbows, wrists, and ankles. The joints became somewhat swollen and painful and remained so for possibly two or three days. Muscular pains accompanied the joint ones but were not so severe or so marked. There were no cardiac troubles but there was anæmia and splenic enlargement. During the time they were under observation each patient had from three to four such attacks and on each occasion presented somewhat similar symptoms, but towards the end of their term here the arthritic symptoms did not seem quite so marked or so severe. However, they were by no means cured and I found treatment unsatisfactory. As the occurrence of joint troubles in malaria is, I believe, somewhat rare, the question arose as to the exact nature and cause of the attacks. In neither case was there any suspicion of Maltese fever and the history of the onset of the disease in Burma was quite distinct. As we know that in Maltese fever joint troubles occur due to the micrococcus melitensis it occurred to me that possibly a somewhat similar condition might exist in Burma, but I can find no history of any such disease. The attacks in my patients differed to what occurs in Maltese fever, where the joints are only affected some time after the onset of the fever and where they are also associated with a good deal of muscular pain and neuralgia.

Another point of interest is that the malarial poison seems to affect adversely the curability of both gout and rheumatism. These two diseases, when seen in malarial subjects, usually present themselves in most intractable forms. Often a gouty attack will determine one of ague and *vice versâ*. Another thing I have noticed is that in some cases, if quinine be freely administered for the ague, it seems to bring on an acute attack of gout. So much so is this that many patients tell me they can never take quinine without bringing on gouty symptoms. This is especially marked with the sulphate and hydrochlorate of quinine, much less so with the salicylate. The reason for all this seems quite unknown and I merely mention my own observations in the hope of drawing attention to certain points worthy of further investigation.

A disease, pulmonary osteo-arthropathy, may give rise to some little difficulty in diagnosis, principally owing to its rarity. It is most likely to be confounded with acromegaly, but in the latter disease there is no alteration of the nails nor are the finger-ends clubbed nor the carpus and metacarpus much thickened. The chief characteristics of the disease are great enlargement of the hands, wrists, feet, and ankles, associated with, and secondary to, some chronic pulmonary affection, such as phthisis, chronic bronchitis, and empyema. In the joints the changes are effusion with enlargements and ulceration of the cartilages and articular ends of the bones. Marie is of opinion that these changes

[5] THE LANCET, Sept. 29th, 1900, p. 927.

are due to toxic poisoning, but Thorburn looks on them as tuberculous. The evidence either way is slight and indefinite.

Recent research in gout seems to have done little but upset all our former ideas as to its pathology and origin. Not so long ago it seemed as if we had arrived at some common agreement on the subject, but every division of it has recently been re-investigated, with the result that all our old theories have been found wanting, and the new ones brought forward are so diverse and uncertain that it is apparently impossible to formulate any satisfactory theory. After perusing much literature on the subject I find that about the only fact which seems tolerably certain is that uric acid, or its derivatives, is the immediate cause of the joint troubles. But why uric acid should be deposited in these positions, why there should be an excess of uric acid in the blood, if such excess exists, and why it should not be excreted as is done in other conditions, seem to be still *sub judice*. It appears to me that something more than excess of uric acid is necessary, and the theory of a toxic condition of the blood or tissues being the determining agent, seems from one's experience to be the most likely solution of the difficulty. All experiments on the healthy subject have failed to bring about the gouty state, and therefore it seems as if in gout the blood or tissues acquired some peculiar characteristic, with the result that some ingredient of the blood which in the natural state would be excreted without any symptoms becomes a poison capable of causing acute joint troubles. So much, however, is pure speculation that I do not care to enter further into the subject here.

Questions of diagnosis between certain irregular and chronic forms of gout and some forms of rheumatoid arthritis and subacute and chronic rheumatism offer the most common difficulties we who practise at bathing resorts have to consider. The acute forms of the various diseases are so characteristic as to give rise to no trouble. It is as gout passes from the acute into the chronic and more irregular forms, or where it has never been acute, that diagnostic difficulties arise. Especially is this so in middle-aged or elderly women, and it is often only after prolonged and patient observation that a definite diagnosis is possible. Yet from the point of view of treatment this is all important. Gout is more common in men, but a certain number of cases occur in women, usually of a chronic irregular form. It mostly occurs in the well-to-do and well-nourished. In irregular cases it does not occur suddenly, nor is the onset acute, but possibly there is the previous history of such an acute attack. It is seldom symmetrical, almost never affects the temporo-maxillary joints or back of the neck, and is much more liable to affect the joints of the lower limbs than those of the upper. Owing to the deposits of the biurate in the joint structures the latter are often irregular in size and shape, sometimes being nodular, but they may present almost any appearance. There is no tendency to destruction of the tissues. It is often associated with digestive troubles and irritability of temper, as well as marked depression of spirits. The teeth are usually ground down, whilst the nails may be cracked and marked longitudinally.

Chronic rheumatoid arthritis is more common in women than in men, and amongst the poor and badly-nourished. It usually begins insidiously in one of the metacarpo-phalangeal joints and is not associated with redness or great tenderness. It rapidly spreads to many other joints, giving rise to much crippling and deformity. It is specially liable to affect the temporo-maxillary joint and the back of the neck. There are marked muscular atrophy and often pigmentary and vaso-motor changes. Once a joint is affected there is little tendency to improvement. There is marked symmetry in the joints attacked, but the first symptom can usually be traced to one side. There are no biurate deposits, although lipping and outgrowths may be mistaken for them. The cartilages are ulcerated and there may be much coarse grating. It is not readily affected by the salicylates. Chronic rheumatism never affects the temporo-maxillary joints and is not associated with the formation of bony or cartilaginous deposits in the joints. It exhibits little symmetry and is not progressive. It is usually associated with rheumatic pains and yields to the salicylates in a marked degree.

In certain nerve diseases arthritic changes are noticed and of these tabes may be taken as a type. These changes do not give rise to much trouble in diagnosis, and it is more from the point of view of origin that they are of interest. In them the joint troubles are the result of trophic influences, which alter the joint's nutrition to such an extent as to give rise in some cases even to acute inflammation, but more frequently only to a chronic condition characterised sometimes by much tenderness, at others by none, by ulceration of the cartilages, by fibrous adhesions, and by alterations in the articular ends of the bones. In all such cases a condition of nerve degeneration exists, the result of some serious organic lesion of the nervous system. This degeneration has been found in every case in which it has been looked for, and it has even been found in the nerves of the joints themselves. It was the absence of these changes which first threw doubt on the origin of rheumatoid arthritis, and it appears to me that this in itself is so strong an argument that one can positively say that rheumatoid disease, in the absence of nerve lesions, must originate in some other way.

Senile degenerative arthritis is essentially a monarticular disease, although in some few cases we see two or more joints affected. It is seen in elderly people, especially men, and in most cases as the consequence of some injury more or less trivial. The joint changes are unaccompanied by any vaso-motor or trophic changes, except such as are the result of general malnutrition or disease. Atrophy of the muscles of a limb may often be marked, but we never see any reaction of degeneration, and the muscles usually respond quickly to treatment. This, however, I am sorry to say, is not the case with the arthritis, which is persistent and, if left alone, progressive, ending in the loss of the use of the affected limb. The joints most frequently affected are the larger ones, especially the hip and the shoulder. The movement of the affected joint being limited and painful, the patient is inclined to save it as much as possible. There is grating almost invariably and often shortening. There is little or no swelling visible and no redness. Deep pressure always elicits pain, in the case of the hip most pain being felt in the groin and in the shoulder either in front or on the outer side of the joint. The joints show thickening and chronic inflammatory changes of the synovial membrane, whilst the articulating surfaces are worn down, the cartilages being destroyed in patches and the bone being soft and yellowish from fatty degeneration and absorption of its structure. It presents all the characters of a local progressive degeneration.

It will thus be seen that as our knowledge at present stands arthritic troubles arise in a great variety of ways. There are those due to (1) bacteria themselves acting on the joint structures; (2) bacterial poisons (pulmonary osteo-arthropathy); (3) toxic poisons of as yet an undetermined character (gout); (4) nerve degenerations; and (5) senile degenerations. Of these Nos. 2 and 3 will probably be referred to some other category as further scientific data become available.

Bath.

ON PROTECTIVE INOCULATION AND SERUM-THERAPY.[1]

BY J. L. BUNCH, M.D., D.Sc., M.R.C.P. LOND.

IN speaking to-night of the subject of serum-therapeutics I am speaking of a subject which is now essentially practical—a subject which is no longer of exclusive interest to the bacteriologist and to the purely scientific worker, but one which is of far-reaching importance both to the medical practitioner and to the patient. Within the last few years the treatment of some of the acute infectious diseases has undergone considerable modification and augmentation, with the result that the prognosis has been greatly improved and the mortality, more especially in diphtheria, to a marked degree diminished.

By the injection of certain antitoxic sera it has been found possible to render less fatal and to cut short the attacks of some of the most dreaded diseases, and even, by the methods of protective inoculation, to render the individual insusceptible to certain diseases and artificially to confer on him a more or less permanent immunity. Such immunity or power to withstand the attacks of certain infectious diseases which to others are destructive belongs

[1] A paper read before the North London Medical Society on Feb. 14th, 1901.

from birth to some individuals and to some species of animals, and such an inherited or congenital immunity is to be distinguished from the artificially produced or acquired immunity. Thus congenital immunity against syphilis, scarlet fever, and measles is possessed by all animals except man; in other words, man is the only animal which is susceptible to these diseases. Again, fowls, rats, and pigeons are immune to anthrax, dogs are immune to tuberculosis, and rabbits to glanders. A still minuter subdivision as to susceptibility is seen in the case of mice, inasmuch as white mice and house mice are absolutely immune to tuberculosis and to glanders, while field mice are highly susceptible to both these diseases. In human beings every epidemic shows that some individuals, although equally exposed to infection with others, are not susceptible to certain diseases such as small-pox, measles, or scarlet fever, and it is well known that negroes are less liable to contract malaria and yellow fever than are the white races, though they are more susceptible to small-pox and tuberculosis.

This immunity can, however, be diminished or abolished experimentally. Thus, mere artificial disturbance of metabolism is capable of making animals otherwise immune to certain diseases susceptible to these diseases. It has been shown by Charrin and Roger that rats, which are usually immune to anthrax, lose this immunity after they have been sufficiently fatigued by forced treadmill work. Pasteur and Wagner demonstrated the fact that by artificially lowering the temperature of hens and pigeons, whose body temperature is normally 107° F., by means of baths, they became susceptible to anthrax, while, on the other hand, Gibier showed that by placing frogs in a bath heated to 95° they became liable to infection by anthrax, to which they were otherwise immune. Disturbance of metabolism by starving pigeons either before or directly after inoculation renders them also susceptible to anthrax. If the pigeons are starved for a period of less than eight days and then fed again on their normal diet they regain their lost immunity. In human beings great disturbance of nutrition, whether due to starvation or mental anxiety, also renders them liable to contract contagion in the course of epidemics, and to the latter cause we may also, perhaps, ascribe the frequent occurrence of tuberculosis among prisoners.

Acquired immunity to some diseases can be attained by passing through an attack of the disease, and it is frequently observed that an abortive or very trivial attack often confers immunity as well marked as that following a severe attack. Experimentally this has been often confirmed, and it has been shown that inoculation with a weak culture protects against subsequent inoculation with a virulent culture. The duration of the acquired immunity varies considerably and lasts a considerable time in the case of small-pox, scarlet fever, and measles, whereas in the case of diphtheria, pneumonia, and gonorrhœa, one attack gives, so far as we know, no protection against subsequent infection with the same disease, and in the case of malaria one would be disposed to say that each attack renders the patient more liable to subsequent infection.

As to the causation of immunity many theories have been advanced, and one of the earliest is that of Pasteur and Klebs, which assumes that in the first attack of the disease the substances in the body which are necessary for the growth of this particular organism are used up, so that similar bacteria which secure an entrance subsequently find none of the medium present which is necessary for their development. Against this theory are the facts that the fluids of a naturally or artificially immune animal frequently form an excellent artificial medium for the growth of the special micro-organism to which that animal is immune, and that sera which contain no bacteria are, when inoculated, capable of producing similar immunity.

The theory of Chauveau and Wernich assumes that micro-organisms during their growth produce substances which hinder their further growth and so not only bring the disease to an end but render the patient insusceptible to further invasion by the same bacteria. But the fact that immunity may persist for such long periods renders this theory also improbable.

A third theory, the theory of Buchner and Wolffberg, is based on Darwin's theory and makes the assumption that in small-pox and other infectious diseases the weaker cell-elements are destroyed and only those which are able to resist the specific organism which has caused the disease survive, and, further, that these cells transmit their acquired properties to their offspring, the organism, as a whole, being thus rendered capable of resisting further attacks of the specific disease.

A more widely held theory is that of Metschnikoff who first published his phagocyte theory in 1883. According to this theory certain white corpuscles of the blood and other cells derived from the mesoblast can take up and devour within themselves the invading bacteria. Thus, in the frog anthrax bacilli were seen to be taken up by the cells and to undergo peculiar changes quite different from ordinary degenerative changes, and Metschnikoff was able to obtain a culture from an anthrax bacillus which had thus been taken into a cell, the culture proving to be quite virulent. He found, too, that in immune animals when the bacilli were introduced beneath the skin but protected by means of a cotton-wool covering from the attacks of the phagocytes, they increased in numbers, whereas those bacilli which escaped from the protecting covering were promptly consumed. He assumed that as soon as any infection-producing organism attains access to the body it produces positive chemiotactic substances which attract the bacteria, but in proportion to its virulence it generates poisonous substances which paralyse the activity of the phagocytes and prevent them from devouring the bacteria. When an animal has been rendered artificially immune its phagocytes are able to resist this poisonous substance and to devour the bacteria before they have produced any considerable amount of poison.

In direct opposition to Metschnikoff's theory a theory has been advanced which ascribes to the cell-free plasma and serum of the blood bactericidal properties. Nuttall showed that not only the blood, but also pericardial fluid and aqueous humour of dogs have the property of killing anthrax bacilli. Behring further proved that anthrax bacilli grow well on the blood-serum of animals which are susceptible to anthrax inoculation but cannot be got to grow on the serum of white rats which have been rendered immune to anthrax. He also showed that while one particular serum is fatal to certain varieties of micro-organism it is powerless to inhibit the growth of certain other organisms, and that a definite amount of serum is only capable of dealing with a certain definite number of bacteria, so that if bacteria in excess of this number are introduced they grow and multiply actively. In other words, the immunity thus conferred depends upon the ratio between the number of micro-organisms and the quantity of the substance inimical to their growth contained in the fluid. The nature of these poisonous substances or "alexins" is but little known. They are extremely unstable and cannot be kept intact outside the body for any considerable time, and they are easily decomposed by sunlight and by warming. These alexins, or at any rate the serum which contains them, have a destructive action not only on bacteria but also on red corpuscles and on leucocytes of other species of animals. From these and other characteristics it seems probable that alexins are of the nature of proteids. According to Ehrlich the action of antitoxins is brought about by their chemical combination with toxins, much as an acid combines with a base. The French school, on the other hand, hold that the action is essentially a "vital" one.

Ehrlich has described the existence of a series of bodies or "toxoids," which, like toxins, have an affinity for antitoxin, but which differ from toxin in their valency for antitoxin. These toxoids can be divided up into three classes—the epitoxoid or toxone, in which the valency for antitoxin is less than that of the toxin; the syntoxoid, in which it is equal; and the protoxoid, in which it is greater. An attempt has been made to combine this last humoral theory with the phagocytic theory of Metschnikoff by supposing that the phagocytes do not themselves directly take into their substance and devour bacteria, but that they secrete the poisonous materials which are capable of inhibiting their activity and ultimately bringing about their death. Some experiments of Buchner afford strong confirmatory evidence of this theory. By suitable chemical stimulation he was able to cause the secretion into the pleural cavity of rabbits and dogs of leucocyte-containing exudations which possessed bactericidal powers stronger even than those of the blood or serum of the same animal. Under these conditions however, phagocytosis could be observed to be proceeding actively, and the question immediately arose as to how far the bactericidal qualities of the fluid depended upon phagocytosis and how far upon the contained alexins. This question was settled by freezing the fluid, and by this means killing the leucocytes but not injuring the alexins, and then again testing its bactericidal powers. These were found to be in no way

diminished, and, inasmuch as the leucocytes had been killed, the capacity of the fluid to destroy bacteria must necessarily depend upon the contained alexins. But even if phagocytosis is merely a secondary phenomenon, and the destruction of bacteria is brought about by poisonous substances circulating in the fluids of the body, there is a considerable amount of evidence which goes to show that these poisons are secreted by leucocytes. The influx, therefore, of these white corpuscles to an infected area means an increased secretion of substances poisonous to the invading micro-organism and increased powers of resisting disease, but according to this theory it is immaterial to the patient whether the disease be combated by thus inducing an active leucocytosis or whether a sufficient supply of the bacterium-killing substance which is normally manufactured by leucocytes be directly introduced into his tissues.

In discussing the practical application of these principles to the treatment of disease I would lay stress on the fact that the advances of science, like those of nature, are slow, and that the marvellous discoveries which are only introduced to the public in their completed form, and then appear, like Pallas Athene, to have leapt fully developed from the head of their creator, can, on closer examination, be traced through all the stages of their gradual development. Though, to the romantic imagination, the falling of an apple, the swinging of a church lamp, and the flowing of water from a bath revealed to Newton, to Galileo, and to Archimedes respectively the secrets of nature, nevertheless truth compels us to recognise that these secrets were only unravelled by ceaseless striving and by strenuous work, and that only by such means can future advances in the field of research be accomplished. Thus we can trace back to far distant times the first attempts at preventive inoculation. It was early recognised that certain diseases only occur once in the life of the individual and that he is in future protected against attacks of the same disease. From this it was but a short step to the artificial production of such diseases, especially when it was found that in the case of small-pox a mild form of the complaint could be induced by the inoculation of the contents of a pustule in a healthy subject, and that such an inoculation was as effectual a safeguard against the possibility of contracting the disease in future as a severe attack of small-pox resulting from contagion. It is probable that this method of artificially inoculating small-pox was known and practised thousands of years ago by the Indians and Chinese, and in the Middle Ages it was certainly a common practice. It was not, however, until the year 1721 that the method was introduced into England from Turkey by Lady Wortley-Montagu, the wife of the then English ambassador to Constantinople. It met with very considerable opposition, and rightly, for, in spite of its undoubted protective powers, individuals thus inoculated, even if they themselves only experienced a mild attack of the disease, formed each a focus from which others might become infected, and in these latter there was no certainty that the complaint would always run a favourable course. In 1798, however, Jenner published his account of the protective action of cow-pox against small-pox, a method which was already fairly well known, and of which a description had been given by Fewster and Sutton, but which had not as yet met with general acceptance—and it is well known that the application of this method as a result of Jenner's teaching has practically stamped out small-pox in those districts where the practice has been universally carried out. It must, nevertheless, be always remembered that the protection thus obtained is not permanent. The essential principle which underlies such vaccination is that when the disease is passed through animals which are little susceptible to it a vaccine is obtained which causes but slight reaction in the first species of animal and yet protects against the disease. In an exactly similar way to Jenner's small-pox method the virus of the swine fever when passed through rabbits gives rise to an attenuated virus which in swine is protective against swine fever, and the employment of this vaccine has enabled epidemics of swine fever in some localities to be stamped out. Attenuated cultures which can be used as vaccines can also be obtained by exposing the cultures to temperatures above those at which they grow best, by exposing them to sunlight, increased pressure, or electricity, or by the addition of chemicals such as carbolic acid. Thus anthrax vaccine is obtained by growing the cultures for different periods at a temperature of 43° C., and inoculating first a weak culture and then more virulent ones. By this means the mortality from anthrax for two corresponding periods of three years was in one country reduced from 2·3 to 0·5 per cent.

The method of attenuating cultures by means of drying is made use of in the treatment of rabies. Pasteur showed that the introduction of a portion of the central nervous system of a mad dog beneath the dura mater induced rabies, also that the unknown virus could be increased in virulence by passing through rabbits. After a virus of maximum virulence has been obtained it is attenuated by drying over caustic potash and for each day of drying it loses an appreciable amount of virulence the extent of which can be foretold. Thus an emulsion of a spinal cord which has been dried at a temperature of 72° C. for from one to four days causes rabies seven days after inoculation; a cord which has been dried for five days does not produce any symptoms until after a still longer period; while a cord which has been dried for 14 days produces no symptoms. The patient under treatment is first inoculated, if the case is not an urgent one, with a weak virus, and afterwards with vaccines of increasing virulence, so that he becomes immune against subsequent inoculation with even large doses of the same virus and against subsequent manifestations of symptoms of rabies even if he had become infected before the treatment was commenced.

Instead of inoculating with attenuated cultures of micro-organisms protective inoculation can in some cases be attained by injecting the products of metabolism of these micro-organisms which are formed during their growth, or again by inoculating bacteria of a different kind or even extracts of the bacteria themselves. Of the latter the best known is tuberculin, which is essentially a watery or glycerine extract of tubercle bacilli and contains bacterial proteins. The bitter disappointment to which tuberculin has given rise depends largely on the fact that its action is not specific, but merely resembles that of proteins obtained from other bacteria. This action has been described by Buchner as consisting of cell proliferation, leucocytosis, increased lymph secretion, and, in man, of inflammation either round the site of inoculation or, in the case of the easily absorbed tuberculin, round those spots where a considerable number of tubercle bacilli happen to be situated. Not only can such a reaction be obtained by the injection of proteins other than those derived from tubercle bacilli, but also from bodies varying largely in chemical composition, such as kreatin, kreatinin, acetone, and taurin. A further proof that the action of tuberculin is not specific is that it produces the same local reaction in infectious diseases which are not tuberculous in origin, such as actinomycosis and leprosy. Tuberculin has, of course, a certain favourable action on some cases of tuberculosis, inasmuch as it induces inflammation round already diseased foci, and so leads to the death of the tubercle bacilli, but this is in most cases not sufficient for the cure of lung tuberculosis, because the infection is a mixed one, and streptococci and other organisms are also present. In fact, the latter stages of lung tubercle are practically stages of septicæmia. Streptococci and staphylococci are present in large numbers in the blood and the case is far beyond the power of tuberculin or anything else to cure. As a method of diagnosing tuberculosis in cattle tuberculin has been freely used. Bang of Copenhagen reported that in Denmark out of 8401 animals 3362 reacted to tuberculin, but, as it was impossible to kill off all the infected animals the method was adopted of taking the calves from their mothers and from the stalls as soon as they were born and feeding them on boiled milk. Injections of tuberculin some weeks afterwards gave no reaction in these same calves, so it seems that the remedy was effectual. As to how much importance we must attach to the question of the conveyance of tuberculosis by milk I do not now propose to inquire, but in this connexion I may quote a recent statement by Dr. Poore, that in a herd of cows belonging to one of the most illustrious families of the kingdom 38 out of 40 cows were found to be tuberculous, and yet there are three generations of this family living, and no family is more free from the infection of tuberculosis. A protein body similar to tuberculin is mallein, which is obtained from the bacillus of glanders and is used in the diagnosis of glanders in animals. Here, again, its action, like that of tuberculin, is not specific, as has been abundantly shown experimentally.

The attempts to bring about satisfactory protective inoculation which have attracted most attention recently are undoubtedly those connected with typhoid fever. In the case of soldiers proceeding to the Cape it was certain that

many of them would be exposed to infection from enteric fever, and by inoculation of a small amount of a dead culture of the typhoid bacillus it was hoped that they would be protected against infection from enteric fever and an "active" immunity to the disease established. The following method was employed by Wright of Netley. A virulent broth culture of the bacillus is grown at 37° C. for about a fortnight and is then kept at a temperature of 60° C. or more until it is sterilised, and a quantity of lysol added equivalent to 0·5 per cent. On decanting the contents of the flask a clear sterile fluid is obtained which contains the soluble more or less poisonous substances formed by the bacteria during their growth and also the soluble remains of the bacteria themselves. Subcutaneous injection of five cubic centimetres of this fluid will kill a guinea-pig weighing 250 grammes in less than 20 hours. The amount used for the inoculation of human beings is two-fifths of the quantity which would be fatal to a guinea-pig weighing 250 grammes. A second dose of double the quantity may be given a week afterwards. The injection may be given in any spot where the subcutaneous tissue is loose, and Foulerton recommends keeping the patient at rest for the next 24 hours after inoculation. The symptoms following inoculation he describes as consisting of frontal headache, shivering and even rigors, syncope, and shooting pains. The lymphatic glands enlarge, and there are œdema and cellulitis round the site of inoculation, coming on about 18 hours after vaccination at the time when the other symptoms are disappearing. The temperature rises very soon after the injection and attains its maximum about 12 hours afterwards, but it very soon falls again to normal. In a patient, on the other hand, who had been already infected with typhoid fever five days before vaccination only an insignificant rise of temperature occurred as a result of the vaccination. Such an injection, then, of a dead culture of the specific bacillus protects against subsequent infection with the same bacillus, and the serum of the inoculated person acquires at the end of the week curative powers, and also agglutinative powers greater than those conferred by passing through an attack of typhoid fever. Thus, the agglutinative action can be obtained with the serum of an artificially immunised animal even when it has been diluted 1000 times, while the serum of a patient who has recently recovered from an attack of typhoid fever will not react when it is diluted more than 300 times. It has also been shown that the serum of a patient convalescent from enteric fever has less power to confer passive immunity on a guinea-pig than the serum of an artificially immunised animal. When a patient has been inoculated, his serum should be examined a week afterwards, and the inoculation cannot be considered satisfactory unless clumping occurs quickly with a dilution of 1 in 50. Foulerton found that 45 per cent. of some cases which he examined as long as two years after inoculation still showed a definite reaction.

The statistics dealing with the results of anti-typhoid inoculation are as yet very meagre. Wright published last year a report dealing with some 11,295 individuals in India, of whom a quarter of the number were inoculated against typhoid fever. Of the inoculated, 0·95 per cent contracted typhoid fever, as against 2·5 per cent. among the uninoculated; the mortality among the inoculated only amounted to 0·2 per cent., while among the uninoculated it reached 0·34 per cent. On Feb. 9th, 1901, Wright published the official report dealing with the effects of anti-typhoid inoculations in the 15th Hussars, stationed in India between October, 1899, and October, 1900. 539 out of 718 were inoculated, and among these the incidence of typhoid fever was represented by 0·55 per cent. and the mortality by 0·27 per cent.; while the incidence in the uninoculated was 6·14 per cent., and the death-rate was 3·35 per cent. Assuming that some of the inoculations were unsuccessful, as they almost certainly were, these figures are distinctly in favour of inoculation, but there is still a certain lack of unanimity in praise of the treatment, and Ryerson has reported the case of an officer at the Cape who was inoculated twice and yet developed the disease. In any case further statistics are necessary before any definite conclusions can be satisfactorily arrived at.

Various methods of protective inoculation can, then, be employed, some with greater success and some with less, but the "active immunity" which is thus brought about is not an instantaneous affair—it requires a certain time for its accomplishment, it cannot be hastened, and it must be performed before the patient has become infected with the disease. In the case of rabies it is true that the disease can be arrested if protective inoculation is employed during the incubation period, but the method of action of the inoculated virus is totally unknown and we are absolutely in the dark as to how far this method is analogous to the others which I have described.

It is, however, the question of cure or arrest of an already developed infectious disease which to us has the greatest interest, and it is with the name of Emil Behring that we must associate the chief advance in this direction. Other observers, and notably in our own country Sidney Martin, have advanced our knowledge of serum therapeutics very considerably, but it was in 1890 that Behring first published, in conjunction with Kitasato, his researches on diphtheria immunity. He showed that the blood and cell-free serum of animals which had been artificially rendered immune to diphtheria and tetanus possessed the power of rendering harmless the poisons which these bacilli generated in their growth. Thus the serum of a rabbit which had been rendered immune to diphtheria by infection of attenuated diphtheria cultures was able to protect other animals against diphtheria even when they had developed marked symptoms of the disease. The action of this antitoxin was so undoubted, the method so simple, that its application to diphtheria in man followed quickly, and the work of Ehrlich and others soon made it possible to calculate the potency of the serum and the exact amount of the dose necessary. Although the antitoxin was capable of neutralising the toxin generated by the bacilli and circulating in the blood-stream it had no power to destroy the bacilli; these still grew at the point of infection, but the changes which had been brought about by the injection of the serum caused the localised process to be shut off from the possibility of spreading and the animal to become insusceptible to the action of the diphtheria poison. It is of the greatest importance to remember that antitoxin serum has no reparative action, nor can it regenerate cells which have already undergone katabolic pathological changes, and, moreover, that a certain amount of antitoxin can only neutralise a certain fixed amount of toxin. It follows from this that it is necessary to commence the treatment at the earliest possible moment when there is a minimal amount of toxin already in the circulation, and seeing how innocuous its employment is, a large dose of serum should be given at the earliest possible moment in every case of diphtheria. An initial dose of not less than 6000 units should be injected subcutaneously, with, of course, antiseptic precautions, and this should be followed by a second dose if necessary. Roux and Martin showed that if streptococci were injected with the diphtheria serum the disease ran a far more deadly course, and, in the case of animals, if treatment was not commenced within six hours of the onset of this mixed infection, the animal infallibly died. Where, however, pure anti-diphtheritic serum was employed, and a sufficient dose was injected into the animal, it was found to be absolutely protective against subsequent infection with diphtheria, and, even if the dose of serum was too small to be quite efficient, the disease took longer to develop and the animal only died at the end of several weeks. In man the employment of anti-diphtheritic serum has given excellent results. Thus Sidney Martin and Hunt showed that in University College Hospital, for the years 1896 and 1897 its use had reduced the mortality of diphtheria from 28 per cent. to 17 per cent., and the report of the Metropolitan Asylums Board for the year 1899, dealing with some 7000 cases in the year, gave the mortality of cases treated with antitoxin as 15·38 per cent., and of all diphtheria cases, both those treated with antitoxin and those not, as only 14·05 per cent.

The treatment of plague by means of antitoxin serum has proved most successful in the hands of Calmette and some other observers. Thus, at Oporto during September, October, and November of last year 142 patients were treated with serum and only 22 died. The mortality amongst those treated with anti-plague serum was therefore only 15 per cent., as compared with 63 per cent. among those not so treated. The serum used was obtained by injecting into horses first cultures of plague bacilli killed by heat and afterwards living and virulent cultures. After an active immunity had been established in the horse some blood was drawn off and the serum was heated for a time to 58° C. The alexins of the serum are destroyed by this temperature, so that only the "reacting substance" is injected into the patient, which acts upon the leucocytes in proportion as the serum is absorbed, in conjunction with the natural alexins

of the body. But it is very important that these two processes shall go on at the same time and as rapidly as possible, so Calmette insists on the necessity of injecting the serum directly into the circulation. 20 cubic centimetres of anti-plague serum are injected into a superficial vein of the patient's hand, forearm, or leg as soon as a case of plague is suspected without waiting for the results of bacteriological examination. If the fever does not subside completely in 24 hours, and if the diagnosis is confirmed, another injection of 20 cubic centimetres of serum must be given into a vein. These injections are absolutely harmless, and if care is taken to warm the serum to body-temperature before injection the patient experiences no discomfort from the injection. Serum injection is equally efficacious for the prophylaxis of plague in localities already infected, but unfortunately the protection afforded is not a very lasting one, and the injection must be renewed at the end of a week. Prophylactic injections need not, however, be given intravenously; a simple injection of 10 cubic centimetres under the skin of the abdomen is quite efficacious. Above all, the serum presents the immense advantage of conferring immunity in a few hours, so that we have here a method of treatment which may not only prove to be of great service in the prevention of plague, but also in arresting its progress when it has already developed.

Antitoxin treatment has also proved of service in tetanus, typhoid fever, and snake-bite, and there is every reason to hope that in the future we shall, by its means, be still further able to control and cure those few cases of infectious disease which have not been entirely prevented by suitable protective inoculation.

Wimpole-street, .

PERSISTENT METRORRHAGIA.[1]

BY J. INGLIS PARSONS, M.D. DURH., M.R.C.P. LOND.,
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THERE are certain well-recognised causes for metrorrhagia, such as fibro-myoma, polypus, retained products of conception, diseased appendages, cancer, &c. These cases are usually recognised and their treatment is fairly well defined if some differences of opinion are allowed for. It is not my intention to discuss these obvious causes now, but to consider another class of case which is not very uncommon and about which very little is said in the text-books—I mean metrorrhagia which is not brought about by any of these causes and for which, in fact, there is no obvious cause. Even when we examine these patients under an anæsthetic we fail to find anything wrong in the pelvis, and when we dilate the uterus there is nothing apparent to account for so prominent a symptom.

Under these conditions the indication is to use the curette. If the endometrium which is scraped off is found to be thickened the curetting does good and the metrorrhagia usually stops, at any rate for some months. On the other hand, in a certain number of cases we find very little thickening of the endometrium, and then the metrorrhagia will often persist and perhaps be worse after the curetting than before. In such cases I have been able to stop the hæmorrhage permanently by the use of the constant current. I wish to advocate this method of treatment in preference to the risk and mutilation involved by hysterectomy. As I have never removed the uterus for this condition I cannot say much on the pathology of the subject beyond some observations on the morbid anatomy of the endometrium obtained by curetting.

With the first class of case, which is the most common and which usually gets wells after curetting, we find under the microscope that the endometrium is considerably thickened by an excessive glandular proliferation. With the second class of case, which I am more particularly dealing with and where the metrorrhagia persists after curetting, we find a proliferation of the connective tissue in the endometrium, while the glands may be decreased in number. The condition, in fact, corresponds to that described by Wyder of Berlin as "interstitial endometritis" and which he found to be present in the endometrium of bleeding myoma.

When curetting, the use of ergot, and other methods of treatment failed I decided to try the effects of the constant current before doing hysterectomy. As I have seen some of the worst cases of hæmorrhage from fibro-myoma become perfectly regular and remain so for years from the use of electricity properly applied I expected and obtained just as good results in these cases. The similarity in the morbid condition of the endometrium to myoma rendered it probable that electricity would be effective. Another reason in its favour was that the cavity of the uterus is not distorted in shape as it often is in fibro-myoma, consequently it is much easier not only to pass the electrode but also to apply it thoroughly to the cavity of the uterus. In the two cases which I bring before you as examples the hæmorrhage was completely stopped by the constant current, although curetting and all other treatment had entirely failed.

The applications are made by means of a platinum electrode, with a moveable insulating sheath. This is passed up to the fundus of the uterus, while the insulating sheath is adjusted so as to reach just beyond the internal os. As the bleeding comes from the body of the uterus it is absolutely essential to success to see that the current comes off in the body of the uterus and not in the cervix. A clay pad is placed on the wall of the abdomen just above the pubes and connected to the negative pole, while the intra-uterine electrode is connected to the positive pole. At the first application only a mild current should be used, not more than 50 milliampères, subsequently it can be slowly raised until the galvanometer indicates from 75 to 100 milliampères. This is kept on for 10 or 15 minutes. The patient need not lay up during the treatment and except in extreme cases can come to her medical man's house for the treatment. The applications are made twice a week. An antiseptic vaginal douche should be used every day, morning and evening. I need hardly say that the electrode must be absolutely clean and should be placed in an antiseptic solution like any other instrument before being used for operation.

The number of applications required will vary according to the severity of the case. Whatever the number required to reduce the loss to normal proportions, half that number must in addition be given in order to produce a permanent result. The treatment is suspended for a week during menstruation and if at the end of that time the loss has not stopped it should be disregarded and the treatment continued. In some of these cases where the loss is persistent and never stops there is some difficulty in knowing the proper date for menstruation. By closely questioning the patient we shall generally elicit the fact that for one week every month the loss is greater than during the other three weeks. We may take that as an indication of the normal time for menstruation. As a rule no improvement begins until several applications have been made, then the loss begins rapidly to diminish. With a current of 75 milliampères properly applied and slowly raised the patient feels very little, if any, pain. The sensitiveness of the uterus which is usually present at first goes off after two or three applications.

CASE 1.—A woman, aged 32 years, was admitted into the Chelsea Hospital for Women on Dec. 17th, 1898, complaining of profuse loss at the periods, which had so weakened her that she was unable to earn her living. She had had one child five years before and up to that time there was no difficulty with menstruation. Since the birth of the child the loss had gradually increased until she used from 30 to 40 diapers, while the interval was less than formerly. There was practically no pain during menstruation. She had never had a miscarriage. Her general health was good except that she felt very weak from loss of blood and was incapable of much exertion, although she used to lead a very active life. On examination the heart and lungs were found to be normal. The right kidney was slightly moveable. The uterus was found to be in position and not enlarged, and the mobility was unimpaired. The cervix was slightly eroded, with more discharge than usual. The appendages appeared to be healthy. On Dec. 22nd, under ether, the uterus was curetted and swabbed over with solution of perchloride of iron and tincture of iodine. On the 24th the loss still continued. On the 29th the loss stopped. On Jan. 9th, 1899, menstruation began, when the loss was worse than before and showed no signs of improvement. On Feb. 16th the first application of the constant

[1] A paper read before the Harveian Society of London on Feb. 7th, 1901.

current was made, 65 milliampères being used for 15 minutes with the positive pole in the uterus. In all 12 applications were made, the strongest current used being 100 milliampères and the weakest current 50 milliampères. In April for the first time for many years the patient had a normal period. It lasted only four days and she only used 10 diapers. She has remained up to this date perfectly well; she is in good health and is able to earn her living, and she never loses more than normal.

CASE 2.—A single woman, aged 35 years, was sent to me by Dr. J. Thoresby Jones in July, 1899. She had never had a child or a miscarriage. In 1898 she began to lose more at the periods and also had some loss between them. This continued to increase until she found it necessary to have something done. She was taken, in October, 1898, to one of the leading specialists in London who curetted the uterus. The loss stopped for two weeks and then went on as before. She waited for eight months, but as there was no improvement and she was becoming worse she consulted Dr. Jones who brought her to see me. I found her a stout, healthy, well-grown woman who had enjoyed good health until the metrorrhagia began. On examination the uterus was found to be in position and to be normal in size, the sound passing for two and a half inches without pain. There was no tumour to be found and the appendages were normal. There was no erosion of the cervix and very little white discharge. The bowels were sometimes confined. 23 applications of the constant current were made with the positive pole within the uterus, with an average strength of 75 milliampères, for 10 or 15 minutes at a time. The loss had completely stopped after 15 applications. Experience, however, has taught me that in these cases, as well as in hæmorrhage from fibro-myoma, it is necessary after the loss is stopped to go on with the applications for a month or so if we wish to produce a permanent result. After the treatment was finished menstruation ceased for three months and she had no loss at all. Since then she has been quite regular and loses very little.

I will not weary you with any more cases, as these two are typical of the condition. The cause appears to be obscure. I was at one time inclined to think that the disease dated from a miscarriage, but the patient in Case 2 had never had a child or a miscarriage. There is, however, one factor in common with all these cases—viz., that the patients are either single or that, if married, they have remained sterile for some years. Now this is what we also find precedent to the appearance of fibro-myoma. In fact, my colleague, Mr. J. Bland-Sutton, states that there is an excess of fibrous tissue in the walls of the uterus although there are no actual fibroid tumours.

The constant current would appear to stop the hæmorrhage by means of its caustic action on the endometrium and the hæmostatic effect of the positive pole. If a small current is applied with two fine needles to the web of a frog's foot and watched under the microscope coagulation and stoppage of circulation can be seen in the capillaries round the point of the positive needle, while at the negative pole nothing is to be seen beyond a collection of hydrogen bubbles. In addition to this hæmostatic action the muscular wall of the uterus is toned up by the current just as much as the voluntary muscles are when electricity is employed to restore their tone after temporary paralysis. In connexion with this it may be worth while to mention that several patients have remarked to me voluntarily that after the course of electricity the constipation from which they had previously suffered had disappeared, although the treatment had been given solely with the purpose of stopping menorrhagia.

There is one other course of menorrhagia which I should like to refer to—viz., retroversion. On several occasions patients have been brought to me for menorrhagia which persisted after curetting, and having found the uterus retroverted I replaced it and kept it in position with a well-fitting Hodge pessary. At the end of two or three months the menorrhagia disappeared without anything else having to be done. There are, of course, many cases of retroversion which give rise to no symptoms and require no treatment, but, on the other hand, there are also many cases where the condition makes a woman's life a misery to her. She complains of constant pain in the back, worse on walking, and if there is much standing with bearing-down pain. During menstruation the uterus is very tender and she can hardly bear to be touched and she often has a sickening pain when the bowels act. In addition to this in about 30 per cent. of these cases there is menorrhagia. To my mind if there is no erosion and nothing else to account for the hæmorrhage the first indication is to replace the uterus in its proper position and keep it there. With the large majority of patients the menorrhagia will then cease in two or three months; if it does not then curetting should be done. But I maintain that it is of no use to curette a retroverted uterus for menorrhagia unless we keep the uterus in its proper position afterwards.

Queen-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

ABSCESS DUE TO APPENDICITIS SIMULATING STRANGULATED INGUINAL HERNIA.

BY J. B. PIKE, M.R.C.S. ENG., L.R.C.P. EDIN.,
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LATE in the evening of Jan. 7th I was requested by Dr. G. Cardno Still of Shepshed to meet him in consultation as to a case of abdominal obstruction. I am indebted to Dr. Still for the history of the case up to that time and for permission to send it for publication.

The patient was a fairly-nourished man, aged 35 years. About three years ago he had a bad attack of pain and vomiting, a repetition of previous slighter attacks, and some six months after this, when he had been sneezing, he noticed a lump in the right groin, which receded when he lay down, unless he happened to be lying on his right side. On Jan. 5th he was seized with severe pain and vomiting, which during the next day became stercoraceous. This continued, with complete obstruction, until the afternoon of Jan. 7th, when after an injection he passed some scybalous masses, fluid fæces, and wind. On the evening of this day, when I saw him, he was lying flat on his back, had a very quick running pulse, a distended and somewhat tender abdomen, and a distinct fulness in the right inguinal region. The external ring on that side could not be distinctly felt and the canal gave the impression of being filled with a small oblong mass with rounded edges along which no impulse was conveyed on coughing. It seemed imperative to explore this tumour, and for that purpose the patient was removed to the Loughborough Hospital. Ether was given and it was now possible to make out the external ring and that some substance was blocking the canal. The right side of the scrotum was noticed to be reddened. The condition of the patient now became so alarming that operation was reluctantly abandoned, and, fully recovering from the anæsthetic, he died a few hours after.

A partial post-mortem examination was made with the following result. The inguinal fulness and the scrotal blush still remained. On laying open the inguinal canal a somewhat dense sac was found, and on this being opened pus flowed out in large quantity. The sac was occupied by the thickened and infiltrated spermatic cord and there was no trace of bowel or omentum. Through the internal ring there was a communication with a large perityphlitic abscess, evidently due to appendicitis. There was general peritonitis and it was evident that a perforation had taken place on the 5th, which admitted pus into the peritoneal cavity. The sequence of events was therefore appendicitis, chronic abscess bursting into the inguinal canal and simulating hernia, perforation, and peritonitis.

The case is chiefly interesting from a diagnostic point of view. The anomalous points were that the swelling recurred on lying on the right side and that symptoms were not much relieved by the effect of the injection. These were, so far as I can see, the only things which made strangulated hernia improbable, as latterly the swelling was irreducible. No doubt the recurrence of swelling when lying on the right side was due to the pus gravitating down the canal when it became a low-lying point. Whether I should be able to

diagnose a second case of this nature I doubt, but I think the history of it gives some points of diagnostic value.

Loughborough.

A CASE OF AUTO-VACCINATION.

BY GEORGE H. ORMSBY, M.R.C.P. IREL., &c.

THE accompanying illustration shows a novel effect of vaccination on a patient at present under my care.

A married man, aged 45 years, while at work on Sept. 14th, 1900, got a slight scratch on the outer angle of the right eye. About a week previously I had vaccinated his child. His wife being ill he was obliged to take the child at night, the result being that matter from the arm inoculated the scratch. I first saw him on Sept 24th and the following day had a photograph taken. His eye was completely closed

and was very painful and irritable. His symptoms the same night were so suggestive of septic poisoning that I asked Mr. F. MacDougall to see him with me. By the following morning, however, he was much better and continued to improve steadily. The dark ring round the eye is owing to its being painted with iodine.

Mr. MacDougall tells me that during his extensive experience as "public vaccinator" he has never seen a similar case.

Runcorn.

NASAL DIPHTHERIA MASKED BY MEASLES.

BY WILLIAM WYLLYS, M.R.C.S. ENG., L.R.C.P. LOND., L.S.A.

I HAVE had under my care a patient whose illness in some respects resembled the case of diphtheritic paralysis reported by Dr. A. J. Rice Oxley[1] where only a slight sore-throat had been complained of and some difficulty had been experienced in diagnosing the condition of the patient. My patient, a boy aged five years, had been suffering from a typical attack of morbilli, his little sisters, aged three and two years respectively, being at the same time similarly affected. The only suspicious circumstance was the protracted and obstinate nature of the nasal catarrh, which was purulent, and in the case of the elder girl had existed for two weeks prior to the appearance of the measles rash. In no instance was sore-throat complained of nor was any membrane found in the fauces. The two girls made a perfect and permanent recovery, but the boy about a week after the subsidence of all symptoms and signs of measles became so weak and debilitated that I ordered him back to bed. In a few days, however, he appeared better and was allowed to get up, and as the weather was fine he was able to go out of doors about a week later, when he walked to my house though still obviously weak. Ten days afterwards his father carried him to me, as he said that the child seemed to have lost the use of his legs, toppling about when trying to walk, and that his head drooped to the left side. I accordingly once more ordered him to bed, and on my visit next day I found that he had a cough of a clashing, hollow character, which was quite ineffective in bringing up any phlegm, though after repeated paroxysms he retched and expelled mucus and food through his nose. My suspicions being aroused I examined his palate and found it to be paralysed as were also the muscles of extraordinary expiration. The patellar tendon reflexes could not be elicited and his pupils were dilated and sluggish to light. His expression was vacant and there was left internal strabismus. Bronchitis supervened, and though of itself not of a serious character it was rendered so by the impaired expiratory power. The boy's condition soon became critical, the repeated paroxysms of cough, coupled with the sitting posture occasioned by orthopnœa, telling severely upon the circulatory system. The treatment consisted of gradually increasing doses of liquor strychniæ and liquor ferri perchloridi three times a day and friction of the chest muscles with camphorated oil. Under it the child's condition improved so much that in three weeks he could sit up comfortably in bed and play with his toys. Two further attacks of catarrhal bronchitis occurred and, though obstinate, were satisfactorily dealt with by stimulant expectorants and the use of the steam-kettle. The boy's hearing was markedly impaired on both sides during convalescence, but gradually improved, as did his power of deglutition, and the "twangy" nature of his voice diminished. As paresis of the chest muscles persisted and the legs were much wasted, and the knee-jerks were still absent at the end of six weeks, massage for 30 minutes followed by galvanism was employed once a day for a fortnight and a rapid improvement was soon manifest, the boy's respiration becoming more natural, and, the use of his legs returning, he was able to walk a little, though in a tottering way. A year has elapsed, and he now enjoys very fair health except for occasional bronchitic attacks. He walks and runs well, his hearing is normal, he speaks with but a slight nasal twang, the thoracic movements are good, the knee-jerks have returned though only in a minor degree, and the strabismus is only obvious when he is over-tired.

The chief interest in this case centres in the fact that the patient undoubtedly had nasal diphtheria coincidently with measles, and that although his sister had a far worse purulent nasal discharge both during and before her attack of measles she developed no post-diphtheritic paralysis. The rarity of the concurrence of diphtheria with measles makes these notes worth publishing.

Great Yarmouth.

[1] THE LANCET, Feb. 2nd, 1901, p. 321.

INFECTIOUS DISEASES NOTIFICATION ACT.—At Falmouth on Feb. 11th a man was fined £1 3*s*. 6*d*. for not notifying that his child had scarlet fever. The medical officer of health stated that three other cases of fever were traced to this one. The defence was that a medical man was not required for such a trifling case.

PLYMOUTH MILK SUPPLY.—At the meeting of the Plymouth Borough Council held on Feb. 11th it was decided that the medical officer of health be authorised to issue annual certificates to dairy farmers residing either within or without the borough who supplied milk, cream, and butter to the inhabitants of Plymouth and who were willing to have their farms inspected. A list of dairy farmers to whom certificates shall have been granted will be published for the information of the residents of Plymouth every three months. This seems a wise decision of the council, for the recent typhoid fever outbreak at Plymouth was traced to contaminated milk. 88 cases occurred, 11 of which terminated fatally.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

ST. MARY'S HOSPITAL.

TWO CASES OF "INTERSCAPULO-THORACIC" AMPUTATION FOR SARCOMA OF THE SHOULDER.

(Under the care of Mr. H. W. PAGE.)

THE chief value of Berger's method of complete removal of the upper extremity with the scapula consists in the early ligature of the subclavian artery, by which the loss of blood is minimised, and therefore the amount of collapse resulting from the operation is greatly reduced. For to collapse and to sepsis must be attributed the very heavy mortality which formerly followed attempts to remove the scapula with the arm, and of these two causes the collapse was probably the more potent. The mortality of interscapulo-thoracic amputation is not very great; Berger[1] has collected 46 cases in which the operation was performed for malignant disease of the upper end of the humerus, and only two of the patients died in consequence of the operation, a mortality of less than 5 per cent.

These two cases were in the hospital about the same time and had so many points of resemblance that they may be fitly recorded together.

CASE 1.—A man, aged 40 years, was admitted into St. Mary's Hospital on Dec. 11th, 1899. Over the outer end of the spine of the right scapula was a soft fluctuant swelling of the size of a small orange. It was painful and tender and the skin was much inflamed. The history was one of indefinite pain in the region of the shoulder for something like two years with a small swelling, which had latterly increased in size, for the past four months. Only recently had it become red and tender. In early life he had had an attack of acute rheumatism, and rheumatic pains had troubled him from time to time since, so that the diagnosis with which he came to the hospital from the medical man who sent him—viz., of inflamed bursal cyst connected with the joint—seemed entirely reasonable. To this at first Mr. Page inclined, but it was an ominous fact that the edge of the scapular spine was at one point deficient as if from erosive destruction. It was thought, moreover, that a tuberculous element might possibly be present in the inflammation, the patient's father having died from phthisis. On Dec. 12th the tumour was laid open by free incision and there was evacuated from a cavity with distinct wall or capsule between the trapezius and supra-spinatus muscles a soft, friable, exsanguine substance, pale in colour, the nature of which it was impossible to determine by naked-eye appearances. Some thought it looked like degenerating tuberculous granulation tissue, others that it was unquestionably sarcoma. In favour of the latter view was the destruction of the bone, but against it was the singular absence of bleeding at the operation. The wound was closed and quickly healed, but the microscope having revealed a round-cell sarcoma the necessity for early amputation was submitted to the patient. He declined any interference before Christmas and returned on Jan. 8th, 1900, with a condition of things much altered for the worse. A few days after leaving the hospital on Dec 23rd he had noticed a small lump at the site of the operation scar, and this had steadily increased so that there was now a definite tumour over the spine of the scapula measuring two and a half inches in the vertical by three and a half in the transverse direction. No glandular enlargement was to be found. Further delay was out of the question, and accordingly on Jan. 9th, with the help of his colleague, Mr. A. J. Pepper, Mr. Page removed the whole upper extremity by the method of Paul Berger. The upward extension of the growth involved the necessity of prolonging the incision over the trapezius, but with this exception the operation followed the lines laid down by Berger. There had been no difficulty in securing the subclavian vessels after resection of an inch of the centre of the clavicle and the remainder of the operation was free from hæmorrhage. Towards the close it was deemed advisable to give a subcutaneous injection of strychnine and brandy by the rectum, but the patient really bore the operation wonderfully well and neither then nor afterwards was there any degree of shock sufficient to excite alarm. For several hours he suffered intense pain from the divided nerves and it was imperative to give him morphine. The wound healed by first intention and the temperature was throughout normal. As regards the operation this may further be said, that a considerable portion of the trapezius muscle was removed and likewise every particle of adjoining fascia. Very careful inspection, moreover, was made of all the exposed tissues and there was no suspicion of any growth having been left behind. Nevertheless, the poor fellow was not long free from trouble. As early as Jan. 24th there was a suspicion of one or two small nodules being present in the quondam supra-clavicular fossa, and accordingly as much of the original wound was laid open as to enable examination of the divided trapezius and neighbouring parts to be made. One small lymphatic gland was taken out, some more of the cervical fascia, and a further portion of the trapezius muscle. Again the wound healed well and the patient left the hospital on Feb. 5th, in himself well and free from any indication of local recurrence. One thing, however, had not been liked about him, and that was that he had been suffering a good deal of pain in the left hip. He himself thought that it might be due to the constrained posture of lying on his left side so long in bed, and it was hoped that it might disappear when he began to move about again. Unhappily, it continued to increase and presently he was lame. He was seen from time to time and nothing was to be felt until March 30th, when he returned to the hospital and showed a distinct bony swelling below and in front of the great trochanter. There could be no question what it was and that surgical intervention was impossible. Now also were found two small nodules at the site of the operation, but these also it was resolved not to touch in presence of the secondary extension to other parts. He therefore left the hospital on April 4th and the next heard of him was that on the 13th his leg had given way and broken near the hip. Further recurrences took place at the right shoulder and "affected," so ran a letter about him, "both his head and his side lower down." After great suffering he died at home on May 19th.

CASE 2.—A pale, delicate-looking country girl, aged 19 years, was admitted into St. Mary's Hospital on March 3rd, 1900, with a tumour on the right shoulder. She had had rheumatic fever rather more than a year before and soon afterwards had noticed a small slightly painful lump on the shoulder. At first it had grown slowly, but during the last four months more rapidly. Over the apex of the shoulder, occupying the region of the supra-spinatus muscle, was a distinct tumour, of the size of a large hen's egg, giving a sense of deep-seated fluctuation and feeling much like a distended bursa. The skin over it was unaltered. The gravest fears were felt that the case was one of sarcoma, although the history suggested the possibility of an enlargement of one of the bursæ in connexion with her attack of rheumatic fever. On March 6th an exploratory operation was undertaken, at first with a needle and then by free incision through skin and muscle down to the site of the tumour. Blood alone escaped in considerable quantity and no new growth was actually seen, the blood presumably obscuring the tissues. The wound was closed, but because of the continuous oozing of blood it was necessary to insert a drainage-tube, and when two days afterwards the dressings were changed it was obvious that there had been septic invasion. Oozing of blood continued, and when on March 19th she was again put under an anæsthetic for further examination, distinct masses of a grey jelly-like material were seen projecting into the wound. Portions of this were submitted to examination, the verdict of the microscope being "mixed-cell sarcoma." Day by day the gelatinous material protruded in larger volume from the wound and it was obvious that the sarcoma was now increasing by leaps and bounds. Consent for previous operations had been obtained with difficulty and that for amputation was not had before March 25th, when, Mr. Quarry Silcock kindly helping him, Mr. Page removed the whole upper extremity. The operation

[1] Revue de Chirurgie, 1898, 861.

was an exact counterpart of that on the first patient and calls for no special remark save that during it a small deep-seated abscess was opened and probably infected the wound area. Shock was considerable towards the end of the operation but the patient soon rallied after return to bed. For the reason already named healing was not as good as could be wished and stitches had to be taken out earlier than usual. Nevertheless, there was at no time any collection of pus and only the margins of the wound gave trouble. The temperature was normal on the seventh day. She was then up and about the ward, gaining strength daily, and all pain had practically ceased. Suspicion of local recurrence on April 24th led to a further exploration, and a tiny nodule of growth, together with much thickened fascial structures, was taken from the divided edge of the trapezius and the whole upper part of the wound area was freely scraped so as to impart to it a healthier tone. Thereafter healing was more kindly, so that when she left the hospital on May 30th she might be pronounced quite well. Certainly there was at that time no sign of local recurrence, but a letter from her father in mid-December caused grave doubts on this point and the patient was urged to show herself at the hospital. At last, after much persuasion and entreaty, she consented to appear at the end of January of this year, but then only after definite promise that there should be no operation. A fluctuant subcutaneous lump of the size of a Tangerine orange was found over the right side of the spine at the level of the second, third, and fourth dorsal vertebræ, and this, it was urged, should be immediately removed, for careful examination failed to discover any other indication of recurrence either locally or in the internal organs. In herself the patient seemed wonderfully well, but there was a good deal of nervous hyperæsthesia over the whole shoulder region although no bulbous nerve ends could be felt. Accordingly she returned to the hospital and on Feb. 1st the tumour on the back was freely removed. It consisted of soft sarcomatous structure and one large cyst. There had been no invasion of muscular structures. From this operation she is now (Feb. 19th) on the road to early recovery, with some prospect, how faint cannot be known, that she may continue well.

Remarks by MR. PAGE.—I have thought these cases worthy of publication, not because there is anything specially new in them, but to emphasise my agreement with Dr. Russell S. Fowler of New York, who in an exhaustive paper in the *Annals of Surgery* for January and February, 1900, urges that all cases ought to be recorded. The first case exemplified in a remarkable degree some of the peculiarities of sarcoma—its insidious origin, its early quietude and slow rate of growth, its sudden outburst of extreme malignancy, and the difficulty of its diagnosis. More deceptive indications could hardly have been found than the duration of the swelling and the strange simulation of an abscess. Then, moreover, the surgical interference with the tumour seemed to determine, as has so often been noted, a fresh malignancy of singular violence, so that one would almost think that sarcoma in some of its forms is of all new growths the most malignant. One cannot help feeling that, after all, perhaps the man had better not have been subjected to operation, and it may well be doubted whether his life was prolonged by a single day. Wide dissemination of sarcoma soon followed the major operation, and as general tuberculosis is known to follow operations on local tuberculous diseases, so perchance it may be that the spread of sarcoma is likewise determined. The second case was clearly the less malignant of the two and there is no evidence that operation was in any way answerable for spread of the disease, even though the wound was septic; and here it seems justifiable to assume that removal of the extremity has secured both freedom from suffering and prolongation of life.

Serious shock was not pronounced in either case, attributable to a large extent, of course, to preliminary ligation of vessels and the avoidance of loss of blood. I do not doubt that it is a wise course to pursue in all cases in which the position of the growth, or other reason, does not render it impossible. In both cases it was perfectly easy to secure the subclavian vessels, while the operations as a whole were singularly free from those difficulties which may beset the surgeon in the removal of huge tumours, chondromata, and the like, which have been from time to time recorded and successful operations on which may be rightly regarded as veritable triumphs in surgery.

My thanks are due to my house surgeon, Mr. A. G. Wilson, for invaluable help in the treatment of these cases.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.

A SUCCESSFUL CASE OF GASTROTOMY FOR IMPACTED FOREIGN BODY IN THE ŒSOPHAGUS.

(Under the care of Mr. FLAVELL EDMUNDS.)

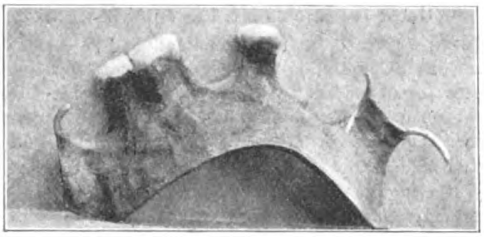
WHEN a foreign body is impacted in the lower portion of the œsophagus and cannot be displaced by the use of bougies three courses are open to the surgeon. He may, firstly, open the œsophagus in the neck and endeavour to remove the foreign body by forceps; this is the oldest method, and is not unlikely to prove successful unless the body is situated very low down. The second method is to perform an intra-mediastinal œsophagotomy; this is an operation extremely difficult and dangerous in itself, and it has, so far as we are aware, never been successful. E. Forgue [1] has described a case in which he attempted to perform this operation for an impacted coin, but he was obliged to desist on account of temporary cessation of breathing, and a fortnight later he was able to remove the coin through the mouth by means of a coin-catcher. In the third method, which is especially suitable when the foreign body is impacted near the cardia, a gastrotomy gives the surgeon access to the lower part of the œsophagus, whence the impacted body is removed by means of a finger or forceps. In a case recorded by Mr. D. Wallace [2] of Edinburgh an œsophagotomy was first performed for the removal of an impacted tooth-plate, but the forceps introduced could not dislodge it, so a gastrotomy was tried and the plate was successfully removed by means of a pair of forceps. The diagnosis in such cases as these can be much facilitated by skiagrams. Mr. Flavell Edmunds is to be congratulated on the successful issue of his interesting case.

A man, aged 45 years, on April 10th, 1900, went to sleep as usual without removing his plate of false teeth (consisting of three teeth with three hooks), but awoke about midnight feeling suffocated. His wife fetched him a drink which he swallowed and immediately felt a certain amount of relief in his dyspnœa, the plate evidently passing from the pharynx into the gullet. He was admitted into the Chesterfield and North Derbyshire Hospital early in the morning of the 11th feeling fairly comfortable and having little pain. Dr. A. G. Naylor, the house surgeon, attempted to remove the foreign body by means of a horse-hair probang but was unsuccessful, although on the first occasion the probang was felt to catch the plate. Mr. Edmunds saw the patient later in the day and passed a probang into the stomach without meeting with any obstruction and a further attempt later in the day met with no success. At this time it was thought that the plate had passed into the stomach. On the following day, however, the man suffered acute paroxysms of pain referred to the epigastric region with excessive tenderness over that area, but no vomiting occurred; it pointed to the conclusion that the plate was impacted at the cardiac orifice of the stomach. After a consultation with Mr. W. S. Symes and Dr. A. Green Mr. Edmunds decided to attempt to remove the foreign body through an opening in the stomach. Half an ounce of castor oil was given that night and an enema next morning, and just before the operation the stomach was well washed out with boric solution. On passing the tube for this purpose Dr. Naylor distinctly felt an obstruction before the tube entered the stomach.

An oblique incision two and a half inches long was made about one inch below the costal border to the left of the middle line. The stomach was found without difficulty and was held up into the wound by two silkworm-gut sutures passed through the serous and muscular coats only. Having packed it well round with sponges to prevent any fouling of the peritoneum, Mr. Edmunds made an incision through the wall of the stomach, transversely to its long axis, sufficiently large to admit the finger, but no trace of the plate could be felt in the stomach by finger or probe. The opening in the stomach wall was enlarged to about four inches, sufficient to admit the hand, which was inserted, and on passing the index finger into the œsophagus one of the hooks of the plate could be felt about two inches above the cardiac orifice. The plate was firmly fixed by means of two of the hooks to the œsophageal wall, but manipulation with long-curved forceps passed along the finger released it and it

[1] XIIe. Congrès de Chirurgie, Paris, 1898, p. 220.
[2] THE LANCET, March 24th, 1894, p. 734.

was removed through the stomach. The opening in the stomach was closed by a long continuous suture of fine silk for the mucous membrane alone, and the serous and muscular coats were brought into apposition by means of



The plate, showing the three teeth and three hooks.

between 30 and 40 Lembert's sutures also of fine silk. The parietal incision was closed by means of silkworm-gut sutures through the whole thickness of the wall.

For three days following the operation no food whatever was given by the mouth, thirst, which was a very troublesome symptom, being allayed by means of ice. The patient's strength was maintained by nutrient enemata which were continued for six days. Hypodermic injections of morphia were needed to procure sleep. On the fourth day after the operation half an ounce of peptonised milk was given hourly by the mouth and on the following day (April 17th) one ounce of peptonised milk and half an ounce of bovril were given alternately every two hours. On the 30th (17 days after the operation) the patient was taking middle diet consisting of minced meat with bread-and-butter, &c., and during the following week he was taking ordinary meat diet. The temperature for the first 10 days alternated between 99° and 100° F. and after that fell to and remained normal. The wound was first dressed on the sixth day and healed by first intention save for two small sutural abscesses which caused no trouble.

Remarks by Mr. EDMUNDS.—The above case seems to be worthy of record as, according to Mr. Treves's recent edition of "Operative Surgery," in the only two similar cases published the operation was performed by American surgeons (Dr. Bull of New York and Dr. Richardson of Harvard) in 1886 and 1887. The remarkable feature of the present case to me is that subsequently to the operation no pain whatsoever was complained of, either gastric or peritoneal, and the patient was entirely free from vomiting or any dyspeptic symptom whatever, and seven weeks after the operation he was following his occupation and felt in perfect health. The success of the operation was largely due to the constant attention of Dr. Naylor and to his efficient nursing staff.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Condition of the Renal Arterioles in Chronic Bright's Disease.—Toxins of the Pneumococcus.—Congenital Malformation of the Vesical Orifice of One Ureter.—Exhibition of Specimens.

A MEETING of this society was held on Feb. 19th, Professor W. WATSON CHEYNE, the President, being in the chair.

Dr. W. P. HERRINGHAM read a paper on the Condition of the Renal Arterioles in Chronic Bright's Disease. After recapitulating the descriptions given by various authors he suggested that their extreme discrepancy arose from the want of a standard of health and of accurate numerical measurement in disease. He had endeavoured to supply these defects. The changes described were periarteritis, hypertrophy of the muscular coat, and endarteritis. The existence of the first two, at any rate, was by many authors denied. He himself had found it impossible to form any standard of the adventitia in health, and in disease he had found it to vary, not with the condition of the other arterial coats, but with that of the general interstitial tissue of the cortex. He held that it should be considered as a part of this rather than as a coat of the artery, and could not support the use of the term "periarteritis" as a separate condition. For the middle coat he used two measurements, the first transverse, by which in an artery cut transversely the relation of walls to lumen and the thickness of the various coats was determined; the second longitudinal, by which in an artery cut along its long axis the nuclei of the muscular coat could be examined and counted. Some test of the condition of the muscular coat was required, and he considered the number of nuclei present to be less liable to error than other criteria. When a set of standards drawn from six healthy kidneys were compared with a series of 34 cases of various forms of Bright's disease no instance occurred in the latter of true hypertrophy or of hyperplasia of the muscular tissue; but, on the other hand, whenever change occurred it was in the direction of thinning of this coat and diminution of its nuclei. Numerical tables were shown to illustrate this point. This was the case, not only when the disease was advanced, but even when it was in so early a stage as to be unrecognisable by the naked-eye. Fibrosis of the media was not uncommon in these arteries. Changes in the intima were also very common. He found the descriptions of endarteritis given in text-books faulty, since they omitted to notice the increase of elastic tissue which took place in the larger arterioles. He showed photographs of the concentric elastic rings found in these cases and argued that the specimens showed the earliest stage to be a swelling of the elastica with subsequent splitting into layers between which cells derived from the original membrane lay. Hyaline swelling appeared to be the form of endarteritis proper to the smaller arterioles, and he considered this condition to be probably the same process in some way varied by the size of the vessels. It always occurred in these cases along with fibro-elastic endarteritis in the larger arterioles. Besides these two forms he described a third, in which in the larger arterioles a cellular increase, probably formed from the endothelium, though circular in character, was found inside the ordinary fibro-elastic form. The cases in which this occurred showed some evidence, though not conclusive, of syphilis. With regard to the views (1) that Bright's disease was caused by endarteritis and (2) that arterial disease was the result of chronic inflammation of the surrounding renal tissue, he thought that each was probably true of some cases; but that the consequence was not in either case necessary he proved (1) by bringing forward two cases in which marked disease existed in the arteries though the renal tissue was not affected, and (2) by calling to mind the many cases of Bright's disease in young people which showed no arterial change. He thought that for the majority of patients the two diseases were separate and almost independent. The chief factor in the production of arterial disease appeared to be the age of the patient. No connexion could be traced between the degree of arterial and the degree or variety of renal disease. Looking upon arterial sclerosis as an almost universal form of degeneration he held that where Bright's disease was connected with it it was rather as a predisposing cause from its effect upon the general nutrition than as a direct excitant by mechanical obstruction or chemical irritation of the vessels. He disbelieved the theory which referred the high tension pulse to increased obstruction in the peripheral vessels and looked upon it as the effect of disease in the larger arteries by which the function proper to these, that of elastic reservoirs, was perforce transferred to arteries of smaller size.—Dr. J. ROSE BRADFORD agreed with Dr. Herringham as to the fundamental points. It was impossible to correlate the arterial and the parenchymatous changes. With regard to high arterial tension it was not necessarily related to local arterial changes in the kidneys, nor was it settled that the cardiac hypertrophy was attributable to increased resistance. Something might still be said in favour of the old view that the cardiac hypertrophy was of a toxic nature and the renal were secondary to the cardiac changes.—Dr. A. G. AULD agreed with Dr. Herringham that the elastic tissue of the arteries in chronic nephritis underwent a process of splitting. Similar changes had been observed in Bowman's capsule.—Mr. S. G. SHATTOCK asked whether any precautions had been taken to ensure that the arteries examined had been exposed to equal pressure.—Dr. HERRINGHAM, in reply, had found that it was safer to rely on obtaining an average by making a great number of observations upon arteries removed from

the body 24 hours after death than by making injections at given pressures. One objection to the latter proceeding was that the normal average blood-pressure in the renal arteries was an unknown quantity.

Dr. AULD read a paper on Additional Remarks on the Toxins of the Pneumococcus. Experiments he had described on a former occasion were to the effect that infection of the pneumococcus toxins, instead of conferring any active immunity, only served to render the animal more sensitive to the toxins themselves and also to the organism. Additional experiments had shown that the sensitiveness lasted a long time, at least for eight months. Such a phenomenon as supersensitiveness was met with under many conditions, but in the experiments described it seemed constant. The work of Issaeff had thrown light on the subject. He found that rabbits made completely refractory to the pneumococcus itself nevertheless remained highly sensitive to its toxins, much more so than normal rabbits. Hence he concluded that no antitoxin was formed by the pneumococcus. Issaeff's results were in entire harmony with those of Dr. Auld—that was to say, in both cases no antitoxin was present. In Dr. Auld's experiments the toxins were alone injected, and the only anti-bodies which they could call forth were the antitoxins. As they failed to do so the subsequent inoculation of the toxins themselves or of the virus must necessarily be ineffective. Not only so, but such toxins could only be a source of injury and so the increased sensitiveness. They had to look, therefore, in immunity from the pneumococcus to anti-bodies produced by the bacteria themselves, or, according to the side chain theory of Ehrlich, the immunising serum produced by the bacteria contained a body which had two haptophore groups, one which combined with the bacterial cell and the other, or grappling arm, that which attached to the ferment which dissolved the cell. The simple albumoses were useless in immunising against pneumonia. The questions arose, Why was no antitoxin produced? and What was the immediate cause of the sensitiveness? These phenomena were mutually dependent. There must be an excessive accumulation of side chains in the susceptible cells and the failure to cast them off into the blood as antitoxins. Such overloading of the cells would tend to injure them and render them more susceptible. Dr. Auld adduced considerations as to why the antitoxins were not thrown off. Finally, two facts might be explained. One related to the frequency of recurrence of pneumonia; the immunity produced by the "anti-bodies" was short, while the action of the toxins was long. This explained the phenomenon. The other question referred to the failure of serum treatment of pneumonia in man. This was to be accounted for by the fact that the "anti-bodies" in the immunising sera were only capable of exercising their immunising properties on individuals of the same species. Hence the curative serum would be got from immune human beings or possibly from apes.

Mr. RAYMOND JOHNSON exhibited the Genito-Urinary Organs of a Female Infant in which there was a very Unusual Malformation of the Vesical Orifice of the Left Ureter. From the normal position of the latter a raised column attached to the wall of the bladder ran forwards and ended in a bulbous enlargement which protruded through the dilated urethra, forming a closed cyst which emptied spontaneously on the sixth day after birth. In addition to this malformation the left kidney was imperfectly divided into two portions, each having a separate ureter, the two ureters uniting at a point just above the bladder. The right kidney and its ureter were normally formed, but the latter was dilated. The genital organs and the large intestine were normal. The infant from which the specimen was obtained had died on the thirteenth day, evidently as the result of urinary infection. Before its rupture the distended ureteral orifice had projected through the urethra and between the labia as a small egg-shaped tumour. A similar malformation had been previously described and must be referred to an early error in development. It was probably dependent upon a failure in the natural separation which occurs between the lower extremities of the ureter and the Wolffian duct. The ureter was thus drawn downwards during the formation of the septum, dividing the urogenital sinus so that it came to open in the floor of the urethra.—Mr. DOUGLAS DREW referred to a case in which a child lived three weeks with a similar condition of the ureters.—Dr. A. F. VOELCKER referred to an example of the condition in the museum of the Middlesex Hospital.—Mr. SHATTOCK agreed with Mr. Johnson as to the origin of the defect. He (Mr. Shattock) had termed the condition a reversion to a reptilian type of structure.

Mr. DREW showed a specimen comprising the Kidneys, Ureters, and Bladder removed from the body of a woman, aged 39 years. Above the middle of the left ureter a rather large calculus was impacted and the part of the ureter above it was stenosed. The left kidney was hydronephrotic and contained a large pear-shaped stone. The patient died suddenly from uræmia and was admitted with hæmaturia of ten days' duration.

Mr. A. CORRIE KEEP showed a Hydronephrotic Right Kidney which contained 25 ounces of thick pus and some blood-clot and a small uric acid stone. The patient had had no rise of temperature and very little pain.

LIVERPOOL MEDICAL INSTITUTION.

Report on the Outbreak of Arsenical Poisoning in Liverpool amongst Beer-drinkers.—Appendicitis.

THE tenth ordinary meeting of the session was held on Feb. 14th, Mr. EDGAR BROWNE, the President, being in the chair.

At an ordinary meeting of the institution held on Dec. 20th, 1900, a discussion took place on an Outbreak of Arsenical Poisoning amongst Beer-drinkers, and at the close of the meeting a sub-committee was formed to consider the matter and to report to the institution. This report was now made to the meeting. It re-established the fact that during the last six months a considerable increase of cases usually described as alcoholic neuritis had been observed by medical men in Liverpool. These had in the majority of cases been limited to the poorer classes, hence the best opportunity for observation had been in the union hospitals and general infirmaries. On careful inquiry into the histories of those attacked it had been found without exception that they had been in the habit of drinking beer, generally of a cheap quality, either in small quantities or to excess. The explanation of this sudden increase in the number of cases of neuritis and the presence of some unaccustomed symptoms was afforded on Nov. 22nd, 1900, by the discovery of Dr. E. S. Reynolds of Manchester that arsenic was present in the beer consumed by the patients. In Liverpool the matter was investigated by the medical officer of health, who caused samples of the suspected beer to be taken and subjected to analysis. The result of these analyses showed in a number of cases serious contamination with arsenic. Further investigation showed that the source of the arsenic was impure sulphuric acid which had been used in the manufacture of glucose and other sugars. These sugars were employed as brewer's substitutes in the manufacture of beer. The arsenical sulphuric acid was made from arsenical pyrites, whereas nothing but pure sulphur should be used in the preparation of acid which was destined to be employed in the preparation of food products. The analyses showed that in some samples as much as one and a half grains of arsenic were found to a gallon of beer—a very serious and dangerous contamination. The number of persons attacked had been considerable, certainly several hundreds, and of this number many died. A table of 116 cases occurring in Liverpool and Birkenhead which admitted of easy verification had been drawn up and were appended to the report. Of the 116 cases nine persons died and five were inquest cases. The committee were aware of a large number of cases occurring in other institutions and in private practice. The withdrawal and destruction of the contaminated beers in Liverpool was followed almost at once by a great diminution of cases of neuritis and it was satisfactory to record that the epidemic had been overcome. The possibility of an article of such general consumption as beer being contaminated by a deadly poison such as arsenic had caused widespread alarm to the community and to the medical profession, and the committee felt that it was necessary that some prompt steps should be taken by the legislature to obviate any such serious dangers to the health of the public in future as, considering the prevalence of chemical methods of manufacture deleterious substances, might at any time be introduced. Upon the facts as set before them the committee unanimously made the following recommendations:—

(1) That means be taken to secure purity of beer; (2) that a strict supervision of the materials selected for use in the manufacture of beer was necessary; and (3) that all beers should be labeled by the brewers showing their exact composition.

Mr. F. T. PAUL and Mr. R. W. MURRAY introduced a discussion on Appendicitis. Mr. Paul's paper was chiefly concerned with treatment especially as regards the value of early operation. He endeavoured to show from past clinical and post-mortem records that the mortality in acute attacks never had been high, probably not more than 6 or 7 per cent., the deaths then, as now, being mostly due to septic peritonitis. Early operation as a general rule of treatment could only be accepted if it lessened the direct mortality due to acute attacks. The prospect of a recurrence was no argument in favour of it, as this could be treated with much less risk after convalescence. Nor should the fear of septic peritonitis encourage hasty operations. This dangerous complication was usually established from the first, whilst many surgeons operated because there was a lump and they were afraid it would burst into the peritoneum. A lump was not a source of danger, but an evidence that a danger had been averted, and even although an abscess might form the peritoneal cavity was the last place into which it was likely to discharge. So far as he could judge the mortality from early operation was much greater than the mortality from the disease as it occurred in England. Mr. Paul recommended operation at once in septic peritonitis or in abscess as soon as a definite collection of pus was recognised and in attacks which did not clear up—relapsing appendicitis. Otherwise the operation should always be postponed till after convalescence, when it might be undertaken in children after a first attack, as the mortality was almost *nil*, but in adults it should not be undertaken unless a second attack supervened. He recommended that an ordinary acute attack of appendicitis should be treated by rest, local warmth, starvation, and opium with discretion, and considered purgatives and milk diet as responsible for many disasters. Finally, he referred to various details which he believed contributed to the success of the operation. His mortality in operations undertaken during a quiet interval was at present under 2 per cent. Mr. Murray in his paper, after reviewing the evolution of the gastro-intestinal tract, said that the teaching of comparative anatomy pointed to the vermiform appendix being the remnant of a greater cæcum. Though many of the lower animals possessed a long and pointed cæcum they seldom suffered from an affection at all akin to appendicitis, the probable explanation being that in them it served a definite physiological purpose. The greater frequency of appendicitis amongst civilised nations was no doubt due to their more complex diet. The anatomy and histology of the appendix was mentioned and the probable sequence of pathological events which led up to, and terminated in, an attack of appendicitis was explained. The clinical symptoms which corresponded to these pathological changes were commented upon, especially those symptoms which pointed to commencing bacterial invasion of the general peritoneum, for in such cases early operative interference was urgently called for.

Sir WILLIAM M. BANKS considered that many of the cases that were called mild appendicitis nowadays were really cases of typhlitis and perityphlitis; these were of the mildest nature and recovery without operation was almost invariable. Appendicitis proper he considered in three stages: (1) pre-suppurative; (2) suppurative; and (3) quiescent. 1. The pre-suppurative stage was one from which recovery might be expected in many cases without operation, the treatment being starvation with fomentation of the flank. He deprecated the use of opium as a routine treatment, as it was apt to mask the symptoms of the disease and produce symptoms of its own. The signs of danger were a slight rise of temperature, a rapid pulse, an increase in the amount of swelling, and drenching sweats. 2. As soon as the suppurative stage had been diagnosed the pus should be evacuated, when the appendix was practically destroyed, and such patients had no return of appendical trouble. 3 In the quiescent stage a valuable advance had been made by the removal of the appendix in cases of recurring appendicitis. He would let the patient have three attacks before removing the appendix, because the second attack was often a very mild one and only a recrudesence of the original one which had not quite cleared away.

Mr. W. THELWALL THOMAS considered operative interference necessary if in 48 hours the symptoms and signs did not decrease. Well-defined induration in the iliac fossa persisting after that time indicated the presence of pus and being separated from the general peritoneal cavity by recent soft adhesions tended to burst in that direction. He deprecated the routine use of opium in acute abdominal affections and found that the application of collodion and belladonna to the iliac fossa under hot fomentations soothed pain best; but if after 24 hours these applications increased the pain suppuration was probably present. In relapsing cases operation was always necessary and was certainly indicated in recurrent cases if after two or three attacks the patient was incapacitated from exercise or if the attacks became more severe. In such cases pathological changes were always found in the excised appendage.

Dr. MACFIE CAMPBELL, considering the subject from the general practitioners' side, said that he always gave opium or morphia, as the immediate relief of pain was necessary and helped towards a more accurate diagnosis. His experience of its use was most favourable. Poulticing was valuable in relieving pain and as a diagnostic agent between congestion and suppuration. Operation was advisable in recurring cases.

Dr. GEORGE G. HAMILTON did not consider the temperature an important sign, for the abdomen might be full of pus and the intestines all matted together after a perforated appendix or typhoid ulcer and yet there might be little rise of temperature. He had seen appendices five and six inches long causing obstruction to the ascending colon and rectum respectively.

Dr. ARTHUR EVANS referred to a very acute case of appendicitis in a child who was operated upon within half an hour of the appearance of first symptoms and the appendix was found to be bulbous and to contain pus. He also related a case of gunshot wound of the abdomen (which he had seen in South Africa) where the signs and symptoms produced were those of perforative appendicitis, and it was found that the appendix had been wounded by the bullet.

Dr. F. S. PITT-TAYLOR thought starvation a bad preparation for a serious operation. He emphasised the fact that in raw eggs well beaten up in water they had a perfect food, always liquid and capable of almost complete absorption.

Dr. WILLIAM CARTER and Mr. RUSHTON PARKER also spoke and Mr. PAUL and Mr. MURRAY replied.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Plague.—Proteids in the Urine.—Exhibition of Drawings and Specimens.

A PATHOLOGICAL meeting of the above society was held on Feb. 15th, Dr. GORDON BLACK, the President, being in the chair. Before proceeding to the business of the evening the PRESIDENT referred in a few well-chosen words to the death of Her late Majesty Queen Victoria.

Dr. E. F. TREVELYAN read a paper based upon a bacteriological investigation of the recent cases of Pneumonic Plague in Hull. The morphological and cultural peculiarities of the bacillus pestis were first described and illustrated by specimens, preparations, and drawings. In discussing the bacteriological diagnosis Dr. Trevelyan thought that if the lung contained large numbers of a micro-organism with the morphological and staining peculiarities of the plague bacillus a positive diagnosis should certainly be given without awaiting confirmation by cultivation and experiment. This had been done in the first two of the Hull cases. As regards the sputum, a careful and often-repeated examination had been made in four of the cases, the results being controlled by inoculation experiments. None of the sputum received from these cases presented in cover-glass preparation a pure culture of the plague bacillus. In fact, there were so many micro-organisms present that the examination was often rendered very difficult. Cultivation of the sputum in broth at 22° C. in two instances had proved of no real service. The sputum received was nearly always viscid and more or less rusty in appearance. Blood had been examined from three cases and the plague bacillus was readily found by cover-glass preparation in two cases and by cultivation in all the cases. The examination of the blood, although of distinct service in one case, is usually rendered of less value from the diagnostic point of view from the fact that the bacilli are not likely to be found until late in the disease. In the confirmatory inoculation experiments more

satisfactory results had been obtained with guinea-pigs than with white rats. In conclusion, Dr. Trevelyan thought that the danger of investigating plague material could be overstated, although, of course, careful precautions must be taken, especially in keeping the inoculated animals, in not directly handling them or their tissues, in immediately sterilising all instruments, &c., used, and in cremating the carcasses.—Dr. POWELL WHITE and Mr. CAMMIDGE took part in the discussion, and Dr. TREVELYAN replied.

Mr. P. J. CAMMIDGE read a paper on the Significance of some forms of Proteid found in the Urine in Bright's Disease. After briefly referring to the methods of separating and estimating serum, albumin, and globulin in the urine Mr. Cammidge showed, by means of the lantern, a number of charts illustrating the daily variations in total and percentage proteid excretion, also the relation between the albumin and globulin passed in various forms of nephritis, including the albuminuria of pregnancy and eclampsia. Reference was made to the influence of paracentesis, to the induction of premature labour, and to the rise of temperature on the excretion of these substances. Most of the cases had been under observation for several weeks, some for two or three months, and in all a daily examination of the urine, including proteid estimations, had been made. After considering the cases in detail Mr. Cammidge stated that he believed the percentage, or better the total amount, of serum globulin present in the urine in a case of nephritis was the surest indication of the severity of the disease of the kidney. In estimating the globulin, however, it was important to eliminate the influence of mucus (nucleo-proteid) on the result as far as possible by the use of the catheter in women, especially those who were pregnant, and the lack of this precaution might account for the generally accepted statement that the globulin exceeded the albumin in amount in eclampsia—a statement with which he did not agree.—A discussion followed in which the PRESIDENT, Dr. LONG, Dr. A. G. BARBS, Dr. T. W. GRIFFITH, and Dr. J. B. HELLIER took part, and Mr. CAMMIDGE replied.

Dr. J. KERR (Bradford) showed a number of drawings from cases of Vascular Obstruction in the Retina. In four cases of embolism of the central artery small macular twigs had escaped and a minute, nearly central, portion of the field persisted. In one of these cases streaming movement of the blood in the veins was seen for nearly a week from the onset, and in another broken-up pulsating venous columns were noticed for several days.

The following specimens were shown:—

Mr. CAMMIDGE: (1) A Colloid Carcinoma of the Omentum; (2) a Carcinoma of the Hepatic Flexure of the Colon; and (3) (with Dr. A. L. WHITEHEAD) Tuberculous Iritis, showing Tubercle Bacilli.

Dr. PRIESTLEY LEECH (Halifax): (1) A large Chronic Ulcer of the Stomach; and (2) a New Growth and Cirrhosis (?) of the Liver.

Mr. SECKER WALKER: A specimen of Intra-ocular Hæmorrhage after Cataract Extraction.

Dr. HELLIER: Specimens from cases of Carcinoma Uteri treated by Hysterectomy.

Mr. W. H. BROWN: Myoma Uteri removed by Abdominal Hysterectomy.

Mr. WALTER THOMPSON: Fibro-myoma of the Uterus (undergoing sarcomatous degeneration?).

Dr. GRIFFITH: (1) Embolism of the Cerebral Arteries; and (2) the Heart and Pancreas from a case of Diabetes Mellitus.

Dr. BRONNER (Bradford): Microscopic specimen of a small Sarcoma of the Upper Turbinated Bone, which caused Epistaxis for one and a half years (death).

Mr. H. J. ROPER and Mr. LAWFORD KNAGGS: Bladder and Kidneys from a case of Enlarged Prostate, showing enormous dilatation of one ureter and kidney.

Mr. LAWFORD KNAGGS: Malignant Disease of the Rectum (perforation of the cæcum).

Mr. B. G. A. MOYNIHAN: (1) (with Dr. W. H. M. TELLING) A Rectum with Fæcal Concretions in Appendices Epiploicæ, giving rise to inflammatory adhesions and obstruction of the small gut; (2) Keloid of the Breast; and (3) Cystic Disease of the Kidneys and the Liver.

Dr. E. WARD: (1) Epithelioma of the Soft Palate; and (2) Growth of the Jaw.

Mr. MAYO ROBSON: (1) Malignant Disease of the Cæcum (excised); and (2) Carcinoma of the Stomach (excised).

Dr. TREVELYAN and Mr. CAMMIDGE showed 40 specimens recently added to the School Museum, including amongst others: an Infarct of the Spleen with Aneurysm of the Splenic Artery; a large Compound Ganglion of the Wrist; Two Bronchial Cysts, one from the parotid region the other from the neck; a Lipoma of the Small Intestine causing intussusception; a Sarcoma of the Testis with Hydrocele; a Cystic Papillomatous Growth of the Left Ovary, the right having been removed six weeks before for a similar disease; a large Hydatid Cyst of the Kidney from a boy, aged six years; a Sarcoma of the Liver and Left Axillary Glands (the liver weighed 17 lb; no other growth was found); a large Fibroma of the Cervix Uteri from a woman, aged 23 years (the uterus appeared as a small knot on the summit of the growth); and a Cystic Omentum which microscopically proved to be a Lymphangioma.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 8th, Dr. F. F. Schacht, the President, being in the chair.—It was unanimously resolved—

That an address of sympathy and condolence, conveying the society's expression of loyalty and respect, be sent to His Most Excellent Majesty the King.

—Dr. Campbell Pope then read a paper on the Feeding of Infants in Health and Disease. He said that the problem as presented by nature was one of extreme simplicity, but advancing civilisation had added great complexity to it. In cases where artificial feeding was imperative he recommended the system of physiological feeding as advocated by Holt and Rotch in America and supported by Cautley, Pritchard, and others in this country. For the well-to-do the necessary modification of the milk to the varying standard of human milk at different periods was ably carried out by the Walker Gordon milk laboratories. For others in less favoured circumstances Pritchard's tables for home use supplied the necessary information. He then described milk prescriptions for the modification of milk in accordance with the various failures in digestion of fats, proteids, or carbohydrates, as evidenced by a critical examination of the stools. The prevention of rickets and scurvy was alluded to and special reference was made to virol as being useful from containing citrate of lime. After discussing the subjects of overfeeding and weaning Dr. Pope described the various pollutions which accrued to milk under present conditions in its transit from the cow's udder to the mouth of the infant and strongly advocated more method and simplicity. Most sanitary evils could be avoided by bottling at well-inspected farms and the universal adoption of the physiological method of feeding would introduce simplicity instead of complexity and confusion. He hoped the time would come when municipalities would see that nurse children under their supervision in homes, crèches, or institutions were afforded the benefit of properly modified pure milk.—Dr. Harry Campbell insisted upon the advisability of feeding children after weaning on hard, coarse foods needing prolonged mastication. He regarded the present plan of feeding children upon soft, pappy foods as most pernicious and as being the chief cause, from want of proper use of the masticatory apparatus, of dental caries and adenoids.—Mr. T. R. Atkinson said that he did not think that the want of hard food for children after weaning was the cause of caries of the teeth and adenoids.—Dr. Leonard Dobson said that feeding-bottles must be used in many cases, and he advocated the "Allenbury" as being the simplest and most easy to keep clean. He considered Dr Pope's tables and methods of preparing milk food admirable, but applicable to but a limited class. He was certain that the average nurse or mother of the middle classes could not be trusted to carry out daily accurate measurements of the quantities required and efficient sterilisation of the apparatus. Something simpler was required and he had found the Aylesbury Dairy Co.'s humanised milk to be a most satisfactory preparation. It was sterile, contained the right proportion of fats, proteids, and carbohydrates, and if considered too rich the cream, which always rose to the top of the bottle, could easily be reduced in quantity. If this was considered too expensive then he suggested the use of their sterilised milk, which was but little dearer than ordinary milk. If for various reasons it was necessary to use tinned milk, then he suggested that Nestlé's sterilised, unsweetened, condensed milk was the best. In all cases of diarrhœa and vomiting he stopped the use of milk altogether for two or three days and used a simple mixture of white of egg in boiled water, with the addition of a few drops of

meat-juice. He urged that infants when ill should be given plenty of plain boiled water to drink and not such large quantities of their usual food.—Dr. J. B. Ball said that he could not agree with Dr. Campbell that the want of hard food with infants was the cause of adenoids. He had repeatedly seen infants of from one to four months old with adenoids.—Dr. Langdon-Down said that he had carried out in his own family the recommendations described in Holt's work. He used Hawksley's apparatus for pasteurising the food.—Mr. W. Milner Burgess said that he used Aymard's steriliser with great success in the feeding of infants.—Dr. Twynam pointed out the value of citrates as preventing rickets, and he suggested that fresh orange juice or lemon juice should be given to the infant or to the nursing mother.

BOURNEMOUTH MEDICAL SOCIETY.—The members of this society have recently acquired rooms in the Shaftesbury-hall Chambers, 74, Old Christchurch-road, for their library and to hold their meetings in. The committee have incurred considerable expense in the ventilating and heating arrangements of the rooms, in installing the electric light, and in providing the necessary fittings and furniture. Nearly all the medical men practising in Bournemouth and its neighbourhood are members of this society. The library contains a large number of medical and surgical works of reference besides weekly and monthly periodicals. The members held their first monthly meeting in their new rooms on Feb. 13th, when there was a large attendance, Dr. Arthur Ransome, the President, being in the chair. The President said, before having the minutes read, that there were two things which he wished to allude to. The first and most important was the death of the Queen. It was not necessary for him to say anything about the illustrious example set by the late lamented Sovereign, he would simply quote the words of Vaughan:

> "She has now gone into the world of light
> And we alone sit lingering here;
> Her very memory is warm and bright,
> And our dull thoughts doth cheer."

The second thing which he wished to allude to was that that was the first meeting of the society in the new rooms. He thought that the society was to be congratulated on having acquired a fixed abode so that it was no longer a peripatetic body. He congratulated the members on the way in which they had responded to the appeal made to them for funds to meet the special expense involved in providing furniture and fittings, &c.—The minutes of the special and ordinary meetings held on Jan. 9th were read and signed.—Dr. Percy J. Duncan showed a child, aged 11 months, with an Inflammatory Swelling on the Left Buttock and a Nævus on the Right Buttock which was stated to be increasing and asked the opinion of the members in reference to the nævus, especially as to treatment.—The President brought before the society a communication as to the British Congress on Tuberculosis to be held in London in July, 1901. It was resolved "that the matter be referred to the committee to consider."—Dr. G. E. Crallan read a paper on Delirium in General Diseases. He said that delirium might be defined as a perversion or loss of control of the mental processes which might be manifested in speech or action. The characteristic of healthy mental processes was that they were in harmony with the actual sensory impressions of the present and with the memory of those of the past. In delirium this concord was lost and mental processes ceased to correspond to realities; firstly, there were false ideas—that was, "delusions"; secondly, sensory images arose without sensory impressions from without—that was, "hallucinations"; and thirdly, actual sensory impressions from without excited erroneous sensory images—that was, "illusions." The term "delirium" was usually confined to temporary mental derangements occurring in connexion with disease which was otherwise recognisable. A similar mental state occurring apart from such recognisable diseases was regarded as insanity. Delirium might be quiet or active. In quiet delirium there were delusions and hallucinations which dominated the patient's ideas. He often talked almost continuously in a low monotonous voice with the words imperfectly articulated—a condition termed "low muttering delirium." In active delirium the patient tried to act according to his erroneous and distorted ideas, such as getting out of bed, running about, smashing things, or trying to jump out of a window. He mentioned the diseases in which delirium occurred as a symptom, its etiology in these conditions, and its diagnosis and treatment, in the course of which he narrated some interesting cases.—The President congratulated Dr. Crallan on his excellent summary on this interesting subject and mentioned some cases which had occurred in his own practice.—Dr. Alderson, Dr. Vernon, Dr. Simmons, Mr. T. F. Gardner, and Dr. Hyla Greves took part in the discussion and Dr. Crallan replied.

PATHOLOGICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on Feb. 13th, Dr. A. T. Wilkinson, the President, being in the chair.—Dr. E. F. Trevelyan (Leeds) read a communication on Some Tumours of the Dura Mater. He first referred to the minute structure of the dura mater. Of three specimens of psammoma shown two originated from the falx cerebri and the remaining one from the dura mater over the Rolandic area. A fourth psammoma, of which sections only were shown, started from the meninges of the base. All these tumours were of small size with the exception of one of those which sprang from the falx. The other tumour growing from the falx was hard and contained much calcareous material, whereas the growth over the Rolandic area was quite soft. Both these tumours only contained well-formed fibrous tissue in addition to the psammoma bodies. The remaining two tumours belonged to the endotheliomata. Dr. Trevelyan thought it more useful to classify these growths according to the preponderating tissue present—e.g., psammo-fibroma, &c. The so-called psammoma bodies were not peculiar to tumour formation, for as far as the dura mater alone was concerned they had been found in pachymeningitis (Ribbert) and even in the normal dura mater (Ford Robertson). The microscopical sections seemed to favour the view that the concentric bodies originated from aggregated endothelial cells, but numerous rod-like and needle-shaped structures were also present. The large tumour was directly responsible for death, whereas the basal tumour was an accidental find at the necropsy. The patient with the psammo-fibroma over the Rolandic area fell downstairs probably in an attack of vertigo and sustained a fatal fracture of the base. The only symptoms present here during life were two or three attacks of fainting or vertigo during the last few weeks of life. Dr. Trevelyan referred to another case of a small fibro-sarcoma of the dura mater indenting the temporo-sphenoidal lobe in which death was sudden and no other lesion was found in the body. Of two specimens of osteoma of the dura mater the one showed several small growths on the outside of the dura mater, and the other, a simple growth, proved to consist of pure bone and presenting the shape of a limpet-shell. A specimen of Multiple Tuberculous Growths from the dura mater in the posterior fossa was also shown, as well as a Gummatous Growth of the Meninges over the arm-centre in which the pia-arachnoid appeared to pass beneath the growth.—Mr. Montgomery described a case of Growth of the Aryteno-epiglottic Fold.—Dr. J. H. Ray showed and described three specimens of Acute Intussusception. 1. Acute ileo-cæcal intussusception of at least five days' duration, presenting two rents in the intussuscipiens near the apex of the "tumour," which was four inches long, irreducible, and was excised during life from a male child, aged seven weeks, in whom end-to-end anastomosis was then carried out. Microscopic sections revealed submucous hæmorrhages, increase in number of goblet cells, and marked œdema of the circular muscular tissue. 2. A reduced ileo-cæcal intussusception of 24 hours' duration from a male child, aged seven months. The patient lived five days after operation and the bowels were moved four times. He eventually died from paralytic obstruction of the small bowel. In the caput cæci a submucous hæmorrhage was to be noted. 3. A reduced colocolic intussusception from a male child, aged four years, in whom symptoms had existed for at least 14 hours. The apex of intussusception was on the anterior surface of the transverse colon and still showed as an oval patch, one inch by half an inch of marked congestion and extravasation. The microscopic appearances were similar to those in the first of the three cases.—Dr. E. S. Yonge made a short communication on Simple Growths of the Tonsil.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 14th, Dr. E. Wearne Clarke, the President, being in the chair.—Mr. C. Atkin showed a patient upon whom he had operated for symptoms of Acute Intestinal Obstruction caused by pressure of a large

hydronephrosis. The right kidney, absent from its normal position, presented in the epigastric region, pressing forward the transverse colon and stomach. On scratching through the omentum a cyst of the size of a cocoa-nut was discovered and it was tapped. The patient, a youth, aged 19 years, though *in extremis*, recovered perfectly and six weeks later had had no signs of recurrence.—Dr. D. Burgess showed the following specimens: (1) the Organs from a case of Lardaceous Disease without apparent cause; and (2) Extensive Cerebral Softening due to Thrombosis of the Middle Cerebral Artery from a case of Senile Diabetes.—Mr. H. A. Mason (for Mr. A. J. Hall) showed two cases of Aortic Stenosis in young women and Extreme Clubbing of the Fingers in a case of Phthisis.—Mr. A. K. Gale and Mr. H. Hallam reads notes of eight cases of Peripheral Neuritis accompanied by Pigmentation of the Skin occurring among Beer-drinkers. The cases comprised six women and two men. In the majority the illness commenced with digestive disturbance, numbness, and sensations of "pins-and-needles" in the hands and feet, soon followed by loss of power in the arms and legs. They all presented the following physical signs: (1) varying degrees of peripheral neuritis up to complete loss of power; (2) brown pigmentation of the skin all over the body, most marked on the abdomen and chest, followed by desquamation; and (3) thick desquamation of the skin and redness of the palms of the hands and the soles of the feet. In all but one case, a known alcoholic, the mental condition was perfectly good. The beer—a light ale—taken by four of the patients was pronounced by the Derby county analyst to contain arsenic in dangerous quantity.—The President, Dr. Burgess, Dr. S. White, Dr. R. Gordon, Mr. E. Skinner, Mr. R. J. Pye-Smith, Mr. Atkin, Dr. F. H. Waddy, and Dr. J. Sorley joined in the discussion.

HARVEIAN SOCIETY OF LONDON.—A meeting of this society was held on Feb. 7th, Dr. D. B. Lees, the President, being in the chair.—Dr. Inglis Parsons read a paper on Persistent Metrorrhagia, which is published in the present issue (p. 547).—The President suggested that some of these uterine hæmorrhages might be due to very small abrasions, as was sometimes the case in hæmorrhage from the stomach, and that others might be due to constitutional causes, such as increased arterial tension.—Dr. Davson remarked that he had listened with much attention to the paper read by Dr. Parsons. It had given him further insight into the treatment of menorrhagia which on several occasions had baffled all the ordinary treatments. It was presumable that those patients who did not yield to treatment within a given time did so only from persistency in treatment and the constant recumbent position. He had had cases where curetting had failed, and no doubt had he known of the electric treatment suggested and used by Dr. Parsons the patients would have made a speedy and successful recovery. He would certainly on the next opportunity give it a trial.—Dr. Inglis Parsons, in reply, said that any battery would do provided that it had sufficient output to give the necessary strength of current. By the use of the galvanometer they could give a fairly exact dose. With regard to the use of steam they had to wait to see if the result would be permanent. He would much prefer its use to electricity if the hæmorrhage could be stopped with one application. Some of his cases of fibro-myoma had now kept free from hæmorrhage for 10 years and he therefore felt that he could rely on electricity. Sclerosis of the uterine arteries would not explain the persistent menorrhagia in his cases because the patients were mostly women under 40 years of age. It was quite exceptional for sclerosis to occur before middle life.

NORTH-EAST LONDON CLINICAL SOCIETY.—A meeting of this society was held at Tottenham Hospital on Feb. 7th, Dr. E. Hooper May, the President, being in the chair.—Dr. Tresilian showed a case of Myopathic Paralysis and a case of Congenital Facial Diplegia.—Dr. S. E. Dore showed a boy, aged 15 years, with innumerable Subcutaneous Nodules, presenting microscopically a Fibrous Structure. The skin was markedly elastic and there was a tendency to subcutaneous hæmorrhages. The boy had also congenital heart disease. All his joints showed over-free mobility and he had an old-standing injury to the left elbow.—Mr. Douston showed a case of long-standing Fixation of the Mandible the result of rheumatoid arthritis.—Dr. R. Murray Leslie showed: (1) A case of Congenital Heart Disease; and (2) a Specimen of Malignant Disease of the Omentum and Gall-bladder removed post mortem from a woman who had been in the hospital suffering from Chylous Ascites.—Dr. Arthur Giles showed: (1) A Dermoid Cyst of the Ovary removed by Abdominal Section; and (2) a Uterus with several Fibroid Tumours removed by Abdominal Hysterectomy.—Dr. Chappell showed: (1) A Tumour of the Pons removed post mortem from a child (who had previously been shown to the society) who had presented unusual focal phenomena; and (2) an Œsophageal Growth with microscopical section showing it to be of a sarcomatous nature.—Mr. Carson showed a Scirrhus of the Pylorus removed by Pylorectomy and Gastro-duodenostomy by Kocher's method.—Dr. Meachen showed a microscopical specimen of Ringworm showing the large-spored fungus.—Dr. Meachen also read notes and showed a water-colour drawing of an Anomalous Form of Quinine Eruption.

SOUTH-WEST LONDON MEDICAL SOCIETY.—A meeting of this society was held on Feb. 13th, Dr. M. G. Biggs, the President, being in the chair.—Miss C. M. Parker, of the Ealing Training College for the Deaf, gave a demonstration on Lip-reading, illustrating it by means of a deaf mute. Miss Parker, after explaining the method of teaching lip-reading and showing the readiness with which it was acquired, spoke as to its value not only to those who were entirely deaf but also to the partially deaf, enabling such to follow conversation, the play, and the like, the greater part of which was usually lost to them, thus giving them an interest in their surroundings. It also avoided the necessity of loud speaking, especially to the detriment of the voices of children. The pupil had made remarkable progress and had none of the dull and apathetic appearance so common in the deaf.—Mr. Cecil Lyster showed some cases of Rodent Ulcer and of Lupus treated by the X Rays which had been very markedly improved by repeated exposures. A large tube was used for not more than ten minutes at a time at a distance of not less than six inches About seven exposures appeared to be sufficient to produce a good scar, the surrounding healthy tissue being protected by lead foil. Occasionally with too long or too close exposures a temporary dermatitis was produced. He considered that the best results were obtained by using a Wimshurst influence machine for producing the rays.

HUNTERIAN SOCIETY.—At the annual meeting, held on Feb. 13th, the following officers were elected for the ensuing year:—President: Dr. J. Dundas Grant. Vice-Presidents: Sir Hugh Beevor, Bart., Dr. Patrick Manson, Mr. H. J. Sequeira, and Mr. F. R. Humphreys. Treasurer: Dr. R. Hingston Fox. Trustees: Dr. H. I. Fotherby and Mr. F. M. Corner. Honorary librarian: Dr. T. H. Arnold Chaplin. Orator: Dr. A. T. Davies. Secretaries: Mr. J. H. Targett, and Dr. T. Glover Lyon. Editorial secretary: Dr. W. Rawes. Council: Dr. W. A. Dingle, Dr. W. J. Ettles, Dr. Fortescue Fox, Mr. A. W. Galloway, Dr. D. W. Goodall, Dr. Harold J. Johnson, Dr. W. H. Kelson, Mr. W. C. M'Donnell, Dr. J. W. Oliver, Dr. F. J. Smith, Dr. J. H. Sequeira, and Dr. T. G. Stevens. Auditors: Mr. F. Gordon Brown, Mr. Hope Grant, Dr. S. H. Appleford, and Dr. W. Rawes. After the annual meeting Mr. John Poland delivered the society's Oration, his subject being "A Retrospect of Surgery during the Last Century."

WIGAN MEDICAL SOCIETY.—The annual meeting of this society was held on Feb. 14th. Dr. Blair was voted to the chair.—A vote of condolence to the King and the Royal family was passed.—A vote of condolence to the relatives of the late Mr. G. Morris of Skelmersdale was also passed.—The following were elected office-bearers for the ensuing year:—President: Mr. William Latham. Committee: Mr. Latham, Mr. Mitchell Roocroft, Mr. Brady, Mr. Blair, Mr. Benson, Mr. Graham, Mr. T. M. Angior, and Dr. R. P. White. Honorary treasurer: Mr. E. H. Monks, J.P. Honorary secretary: Mr. William Berry.—The annual dinner was afterwards held and there was a very good attendance of members and visitors, including Sir William Mitchell Banks, Dr. J. Barr (Liverpool), Mr. D. A. O'Sullivan (Southport), Dr. T. E. Hayward (Haydock), and Dr. J. Reid (St. Helens).

BRISTOL MEDICO-CHIRURGICAL SOCIETY.—The fifth meeting of the session was held in the Medical Library of University College on Feb. 13th, Dr. D. S. Davies, the President, being in the chair.—Dr. W. H. C. Newnham showed two specimens of Fibroid Tumour removed by intraperitoneal hysterectomy.—Dr. Aust Lawrence, Mr. Munro

Smith, Mr. R. Williams, Dr. W. C. Swayne, Mr. Paul Bush, and Dr. W. K. Wills spoke on the subject.—Dr. F. H. Edgeworth read a paper on a case of Purpura Hæmorrhagica.—Dr. T. Fisher, Mr. J. Ewens, and Dr. Swayne commented on the paper.—Dr. H. Waldo read notes on a fatal case of Hæmatoporphyrinuria.—Professor Stanley Kent remarked on the case.—The President made a communication relating to Plague and introduced to the society Professor Stanley Kent who spoke on the subject and showed Microscopic Specimens and Cultures.

MIRFIELD AND DISTRICT MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held at the Memorial Hospital, Mirfield, on Feb. 13th, Mr. J. A. Erskine Stuart being in the chair.—Dr. A. G Barrs (Leeds) read a paper on the Minor Degrees of Circulatory Failure and their Treatment, in which he discussed the possibility of many disturbances at present attributed to high arterial tension being really due to the opposite condition. He also called attention to the circulatory origin of many symptoms which were usually ascribed to defects in the nervous and digestive systems.—Dr. Stuart, Dr. Sproulle, Dr. Tait, Dr. Stewart, and Dr. Milne discussed the paper, and Dr. Barrs replied.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.—At a meeting of this society, held at Paddington Green Children's Hospital on Feb. 15th, Mr. Watson Cheyne being in the chair, 32 new members were elected, while the names of 20 candidates for membership were submitted to the meeting as having been approved by the council. A loyal address to the King, expressing the respectful sympathy of the members in the loss sustained by the death of Her Majesty Queen Victoria, was passed, the members all standing.

Reviews and Notices of Books.

Twentieth Century Practice: an International Encyclopædia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D. Volume XX.: Tuberculosis, Yellow Fever, and Miscellaneous. London: Sampson Low, Marston, and Co. 1900. Pp. 906.

WITH this volume the Twentieth Century Practice reaches its appointed end; it now forms a vast work presenting an excellent summary of our present knowledge of medical science. We do not pretend to give an exhaustive review of the volume now before us, but we wish to draw attention to some of its leading features in the way that we have done in dealing with its predecessors.

The subject of Tuberculosis is divided into four sections, each by different authors. The first deals with its bacteriology, pathology, and etiology and is written by Dr. A J. Lartigau of New York. After an interesting historical survey the author proceeds to give a very complete account of the bacillus tuberculosis, its tinctorial reactions, morphological characters, biology, and cultural characteristics, and then describes the distribution of tuberculous lesions in the body, the histogenesis of the tubercle, and the general pathology of pulmonary tuberculosis. It is most difficult to arrange a satisfactory classification of the various types of pulmonary tuberculosis. The disease may present itself under so many different guises that any classification based on sharp distinctions must necessarily not include a large series of intermediate forms in which are often seen the characteristics of several types. For the sake of simplicity and clearness Dr. Lartigau considers tuberculous inflammations of the lungs under two main headings, miliary tuberculosis and tuberculous pneumonia or "phthisis." This requires several subheadings and consequently the arrangement is not always very clear, but nevertheless after a perusal of the pages devoted to this subject the reader should be possessed of a concise idea of the various pathological changes which may be brought about by the presence of the bacillus of tuberculosis in the lungs.

The remarks on Modes of Infection of tubercle will doubtless receive a considerable amount of attention and we would especially draw attention to the section headed "Inhalation Tuberculosis." The experiments of Villemin, Cornet, and Tappeiner, among others, are considered; the results of some of these would appear to be contradictory, but it is shown that not only can infection be conveyed by the dry sputum carried into the air in the form of dust, but the act of coughing on the part of a consumptive patient is sufficient to contaminate prepared glass slips placed in his neighbourhood.

The symptomatology of tuberculosis is well described by Dr. H. W. Berg of New York, and the diagnosis, prognosis, prophylaxis, and treatment by Dr. J. A. Knopf of New York. The hygienic treatment is minutely detailed and is considered by the author to be the one which has thus far proved the most efficacious and which can be carried out in nearly all climates. Most physicians will agree with the author's remarks on the drug treatment of pulmonary tuberculosis when he says: "There is hardly any substance in the materia medica which at some time or other has not been recommended as an anti-tuberculous remedy. While I do not believe in going to extremes, saying that we can treat pulmonary tuberculosis without any medicinal substances, I think, nevertheless, that we may reduce their number to relatively few." Such is probably the result of all those who have had a large experience in the therapeutics of this disease. Symptomatic treatment stands on rather different grounds and good results may be obtained in correcting anæmia, indigestion, diarrhœa, and in relieving pain and cough.

The article on Yellow Fever is by Dr. Wolfred Nelson of New York. The remarks on bacteriology are instructive. The author has taken much trouble in collating the work which has been done with a view to isolate the pathogenic organism of this disease. After a review of the results published by various investigators he is forced to agree with Agramonte, who is of opinion that the pathogenic microorganism of yellow fever still remains unknown, notwithstanding the reports of observers who believe they have discovered it. He believes that the icteroid bacillus of Sanarelli has no further connexion with it than the bacillus coli communis, and gives his reasons for arriving at a conclusion which is contrary to the beliefs of many competent authorities. Some of these reasons would appear to be powerful ones; for instance, he states that the icteroid bacillus has been found in the tissues of individuals who died from other diseases distinct from yellow fever. If this can be definitely established it would, of course, directly discredit the bacillus as being the essential factor in the causation of yellow fever. Further, Agramonte maintains that the bacillus of Sanarelli does not agglutinate the serum of patients or of convalescents from yellow fever, and that the serum of convalescents from yellow fever does not protect against infection by the icteroid bacillus. It is evident that new methods and new media must be employed in future investigations before the bacteriology of this disease can be definitely established.

Dr. Thomas R. Brown writes an interesting paper on Poisoning with Snake Venom. He attributes death in snake poisoning to the following causes: (1) general paralysis, especially of the respiratory centres; (2) paralysis of the heart by tetanic arrest of cardiac action, probably due to the action of the venom upon the cardiac ganglia; (3) a combination of these causes; (4) hæmorrhages in the medulla; and (5) possibly the inability of the red blood corpuscles to perform their function. With regard to the treatment of snake-bite by antivenene Dr. Brown believes that the practical results so far obtained are of great promise and

thinks it quite possible that a real antidote to snake poison has at last been found.

A short article by Dr. Beaumont Small of Ottawa on Mushroom Poisoning is well worthy of perusal, as is one by Dr. James E. Newcomb of New York on Diseases of the Uvula, Soft Palate, and Faucial Pillars.

The final contribution is by Dr. Francis Warner, on Neural and Mental Defects in Childhood. Dr. Warner's valuable investigations on this subject are well known in this country and the present article summarises his views, which have had, and will continue to have, great weight in all matters dealing with education.

The volume terminates with a general index to the whole work, and in the preface to this volume the editor thanks Dr. Emma E. Walker of New York for the valuable assistance she has rendered in this part of the work. The amount of work entailed in the preparation of this index may in some measure be estimated by the fact that it occupies over 300 pages. We congratulate the editor of the "Twentieth Century Practice of Medicine" on the completion of his task. The whole work has been carried out in an admirable way and will form one of the most important medical works of reference in the English language.

Modern Surgery, General and Operative. By JOHN CHALMERS DA COSTA, M.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia; Surgeon to the Philadelphia Hospital. With 493 Illustrations. London and Philadelphia: W. B. Saunders and Co. 1900. Pp. 1118. Price 21*s*.

WE reviewed the second edition of this work in 1899 and we can speak even more favourably of the present issue. It contains 200 more pages and 100 more illustrations, and may be said to be fully abreast of the knowledge of to-day. The increase in extent has enabled the author to describe more fully many subjects and numerous small alterations have been made which considerably improve the text. The addition of so large a number of illustrations accounts in part for the general increase in the size of the volume; they are judiciously selected and will prove useful to the student. A few of the illustrations are unsatisfactory; for instance, Fig. 430 on p. 1053 is supposed to represent compression of the aorta by an assistant. If the figure shows anything it certainly shows compression of the external iliac artery immediately above Poupart's ligament, or even compression of the common femoral. The point compressed is altogether too low for even the bifurcation of the aorta.

A very good though brief account is given of Gunshot Wounds, and we would especially praise the section on the Use of the Roentgen Rays, in which the author describes Sweet's apparatus for localising foreign bodies. This is a good method, but it involves more trouble than that introduced by Davidson. The index is elaborate and, so far as we have tested it, exact.

A Manual of Midwifery. By ALFRED LEWIS GALABIN, M.A., M.D. Cantab. Illustrated with 298 Engravings. Fifth edition. Crown 8vo. London: J. & A. Churchill. 1900. Pp. 870. Price 15*s*.

THE appearance of a fifth edition of this well-known Manual of Midwifery is to be welcomed. In so widely read a book as this it is essential that successive editions should follow one another with sufficient rapidity to prevent its becoming out of date. The fact that the first edition only appeared in 1886 shows that in the present instance this has been done. The book retains all its prominent features. We imagine the various sections upon the mechanical action of the sacrum, the development of the pelvis, and the leverage action of forceps, containing, as they do, many mathematical considerations, will continue in the future, as in the past, to be skipped by the average student. None the less, they are of great interest and have always been one of the features of the work. The chapters in the present edition that have required most alteration are those upon Extra-Uterine Fœtation, Septicæmia, and Deciduoma Malignum. It is interesting to note that Dr. Galabin's opinion that ovarian gestation is possible may be held to be proved by van Tussenbroeck's case. The classification of ectopic gestation has not, we think, been altered since the first edition, and possibly in time all the forms recognised by the author may be demonstrated as undoubtedly occurring, although even now there are many who question the possibility of primary abdominal fœtation. The bacteriology of puerperal septicæmia is fully considered and the chapter is a good *résumé* of the most recent work upon the subject. We are glad to see that curettage after delivery is condemned and that the performance of hysterectomy in cases of septic infection is regarded with doubt. The author conclusively shows by the mathematical doctrine of probabilities that there is a definite causal relationship between cases of hydatidiform mole and cases of deciduoma malignum. He points out that the nucleated masses of protoplasm seen in some cases of sarcoma of the testis do not form the branching reticulated processes, resembling the proliferating syncytium of villi, which are figured in cases of deciduoma malignum. He considers that the cells of the growth, as well as the protoplasmic masses, are derived from the syncytium of the villi, a view held by Whitridge Williams. This is the more probable, since in many instances there is no absolute demarcation but rather a gradation between syncytium and plainly discrete cells. Some very interesting micro-photographs are given, showing a possible gradation between portions of retained placenta, vesicular mole, and deciduoma malignum. 29 new figures have been added. The whole book shows evidence of careful revision and is well calculated to maintain the high reputation gained by the previous editions.

Atlas Seltener Ophthalmoscopischer Befunde zugleich Ergänzungstafeln zu dem Atlas der Ophthalmoscopie. Von Hofrath Dr. J. OELLER, Professor an der Universität München. Erste Lieferung. 5 Tafeln mit Text. (*Atlas of Rare Ophthalmoscopic Conditions and Supplementary Plates to the Atlas of Ophthalmology.* By Hofrath (Privy Councillor) Dr. J. OELLER, Professor in the University of Munich. The text translated into English by THOMAS SNOWBALL, M.A., M.B. Aberd. Part I., 5 plates with text.) Wiesbaden: Verlag von J. F. Bergmann. Glasgow: Obtainable from F. Bauermeister. 1900. Price 8*s*.

IN the course of last year Professor Oeller completed an atlas of the ordinary diseases of the fundus of the eye, exhibited in 75 plates. The present part is the first of a volume intended as a supplement to that work, which will run to about five parts, each containing five plates. The parts are to be published at irregular intervals as material accumulates and will contain accurate representations of rare and exceptional forms of disease. The divisions of the work will be understood when it is said that the plates will comprise the appearances presented by the normal fundus, the diseases of the optic nerve, the diseases of the retina, the diseases of the choroid, and, finally, congenital anomalies. The plates are very beautifully executed in chromo-lithography and display very minute and delicate details. The first plate is one showing apoplexy of the retina with endarteritis obliterans, thrombosis of the inferior temporal vein, and retinitis circinata. It is of particular interest because it depicts the later condition of a patient whose eye had already been drawn in the atlas of Professor Oeller. Such supplementary illustrations are rare and for that very reason extremely valuable. They give the information which it is particularly desirable that the

ophthalmic surgeon should possess. A considerable number of practitioners, thanks to the excellent cliniques attached to most of our medical schools, are quite competent to recognise the actual conditions that are present in any particular case, but they look to the professed ophthalmologist to give them a reasonable or probable forecast of the future, and to give this he must be guided by his own notes or drawings, or if he be unable to sketch from nature by the illustrations of so accomplished a draughtsman as Professor Oeller, by whom all the plates in this part have been made. In each case, after the description of the appearances presented is given in German, a faithful translation follows by Dr. Snowball of Aberdeen. The first plate affords strong evidence that degeneration of the vascular walls constitutes an important factor in the development of retinitis circinata. The second plate exhibits striæ and detachments of the retina and of the vitreous humour following a wound implicating the sclerotic, choroid, and retina and succeeded by a hæmorrhage, the appearances presented being those seen in the inverted image after the hæmorrhage had undergone absorption. Professor Oeller considers that the striæ, which form a marked feature of the drawing, are formed from individual folds of a previously detached retina which have never become quite smooth but have degenerated into connective tissue. The third plate exhibits the aspect of a case of chorio-retinitis albuminurica. The fourth is a case of staphyloma posticum congenitum with a remarkable vena vorticosa which is lost to view in a groove situated in the white staphylomatous crescent. The last of the five plates is a representation of a disc with an optico-hyaloid cone projecting from it. It appears to be stationary, as no change has been observed in it for several years. If the promised parts contain drawings of equal interest with those now issued the volume will prove a very valuable accession to ophthalmoscopic literature. Messrs. Bergmann may be complimented on their fine reproductions of Professor Oeller's delicately finished coloured drawings. Is it impossible to get such plates executed in England?

LIBRARY TABLE.

Beiträge zur Beurtheilung der Bedeutung der Vaginalen und Sacralen Total-Extirpation des Uterus für die Radicalheilung des Gebärmutterkrebses. Von Prim. Dr. HERMANN VON ERLACH und Dr. HANS R. VON WOERZ. Wien: Seidel und Sohn. 1901. Pp. 112. 8vo. (*Contributions to the Discussion of the Value of Vaginal and Sacral Total Extirpation of the Uterus for the Radical Cure of Cancer of the Uterus.*)—Dr. Hans R. von Woerz records the results of 131 vaginal hysterectomies for carcinoma of the uterus. 10 patients, or 7·6 per cent., died as a result of the operation. Of the remaining 121 he was able to trace 115. Of these 62, or 53·9 per cent., were alive and well at the time the figures were collected. Four had died from other diseases and 49, or 42·6 per cent., had died from recurrence. No recurrence had occurred in any case after the lapse of three and a half years from the time of the operation. Of the cases which had remained well in 30 a period of more than three and a half years had elapsed since operation. The frequency of recurrence in cancer of the porto-vaginalis he found to be 43·7 per cent., in cancer of the cervix 50 per cent., and in cancer of the body of the uterus 18·2 per cent. Dr. Hermann von Erlach in his paper gives the results of 27 cases of cancer of the uterus operated upon by the sacral method. Five patients died as a result of the operation, four could not be traced, and one died from tuberculosis. Of the remaining 17 patients 10, or 59 per cent., died from recurrence, while seven, or 41 per cent., remained alive and well. Of these in four cases more than three and a half years had elapsed since operation. The indications for and against vaginal hysterectomy and the sacral operation are discussed by the authors.

Sanity of Mind: a Study of its Conditions and of the Means of its Development and Preservation. By DAVID F. LINCOLN, M.D. New York and London: G. P. Putnam's Sons. 1900. Demy 8vo, pp. 184. Price 5*s*.—This is a type of book of which the present day is peculiarly productive, but, unlike many others of its kind, it deserves notice, both for the matter which it contains and for the form in which it is presented. It deals in a somewhat discursive but suggestive way with the important problems of education, heredity, mental degeneracy, and insanity. The theme is presented in such a form that it can be readily apprehended and appreciated. There is something in the mental attitude of our day which makes it easier to discuss the problems touched upon in this book than it was a generation ago. We have outlived the period of metaphysical analysis and classification; we have begun to study insanity, not merely as philanthropists, but from the point of view of husbanding the State's resources and of extinguishing the evil by practical legislation. This attitude is shown throughout the book. The subject of degeneracy is especially well treated by the author and many judicious observations are made on education and mental development. The concluding chapter deals with social and civic duties. This little work deserves careful reading; it appeals alike to the cultured layman, the psychologist, and the physician as the product of a thoughtful mind keenly alive to the medico-psychological and social problems of the day. The writing is throughout marked by lucidity and even grace.

St. Bartholomew's Hospital Reports. Vol. xxxvi., 1900. Edited by NORMAN MOORE, M.D. Lond., and D'ARCY POWER, F.R.C.S. Eng. London: Smith, Elder, and Co. 1901. Pp. 350 + 240.—The volume of these reports for 1900 opens with two obituary notices, the one by Mr. Howard Marsh of Sir James Paget and the other of Sir R. Thorne Thorne. In all there are 19 original articles, of which perhaps the most striking are that by Mr. D'Arcy Power entitled "The Lessons of a Year's Surgical Experience"; a Case of Landry's Paralysis, by Mr. J. Preston Maxwell; and a Case of Myasthenia Gravis with Autopsy, by Dr. F. E. Batten and Dr. H. Morley Fletcher. Mr. Preston Maxwell considers that the case reported by him supports the view that Landry's paralysis is due to a toxin acting upon the motor neurons of the spinal cord. The case was that of a Chinese woman, aged 62 years, who took to opium smoking for the relief of pain and who, although she had never smoked before, began with half a drachm a day, a dose which was continued for 10 days when itching of both feet and obstinate constipation ensued. She had felt no narcosis, but the pipe was stopped and two days later she began to lose power over her feet. The usual statistical tables and details of additions to the museum make up the volume.

Chirurgie du Rein et de l'Uretère. Par le Professor JAMES ISRAEL, chirurgien principal de l'Hôpital Israélite de Berlin. Traduction du Dr. GUILLERMO RODRIGUEZ, de Valparaiso. Préface du Dr. J. ALBARRAN, professeur agrégé à la Faculté de Médecine de Paris. Avec un résumé de 230 opérations rénales, 2 planches en couleur, et 2 gravures intercalées dans le texte. (*The Surgery of the Kidney and the Ureter.*) Paris: Société d'Éditions Scientifiques. 1900. Pp. 210. Price 7 fr. 50 c.—Professor Israel's "Surgery of the Kidney and Ureter" is well known to all who have especially devoted their attention to this subject, but its value would have been more extensively appreciated if more surgeons in this country were able to read German. Therefore we welcome the appearance of this French version, for the latter language is more widely understood. The work is based on 81 operations on the kidney and ureter

performed during the 10 years 1882 to 1892, and complete tables are supplied containing particulars of all these cases. All the opinions expressed are those held by Professor Israel himself, for very little space is devoted to the discussion of controverted points. The translation is good and the book should prove of interest to many readers.

Practical Household Cookery Recipes. By A. M. WESTCOTT. London: Simpkin, Marshall, Hamilton, Kent, and Co. 1900. Pp. 94. Price 1*s*.—This little book contains household recipes, most of which seem very good. There is a section which more nearly concerns medical readers—namely, that headed "Invalid and Convalescent Cookery." In this good recipes are given for such dishes as the various forms of beef-tea, barley-water, lemonade, and other suitable foods for invalids. With regard to the recipe for lemonade, we think that the juice of one lemon is a rather small allowance for one and a half pints of water, although lemons are not uniform in size; also, in our opinion, it is better, in order to get the flavour of the oil of lemons, to grate the peel after the lemon has been washed than to pare it off with a knife. If pared the lemonade is almost sure to have a slight flavour of the steel knife and it is difficult to avoid getting some of the white portion of the peel which makes the lemonade taste bitter.

The Convalescent's Diet. By LUCY HELEN YATES. London Virtue and Co. 1901. Pp. 96. Price 1*s*.—This is a sensible little book and the introduction is practical. On p. 19 we find the following, which at first sight is startling: "We find iron very largely in spinach ..... mercury also contains it." It would be as well, we think, in future editions to substitute the words "herb mercury" and explain what herb mercury is. We suppose that Miss Yates means the *Chenopodium Bonus-Henricus*, or Good King Henry, which is sometimes used as a substitute for spinach. The *Mercurialis* which belongs to the *Euphorbiaceæ* is not, so far as we know, used for food. The recipes seem very good, but we cannot agree with the statement on page 9 that rabbit is digestible. Some persons can digest it and some cannot, the ability to do so being a matter of idiosyncrasy.

JOURNALS AND MAGAZINES.

IN the *Medical Magazine* for February Mr. J. Foster Palmer concludes his articles upon Modern Epidemics and is hopeful that in the future typhoid fever will be abolished to the same extent that typhus fever has been. His sanguine expectations are based more upon the efficacy of general sanitation than on the influence of personal measures such as inoculation, though with regard to the latter he holds definitely favourable opinions. Mr. Edmund Owen contributes a short but discursive article on Some Tuberculous Affections of Children and Dr. Allchin continues at some length to consider the reconstruction of the University of London. Another university, that of Oxford, is pleasantly, but without much profit, considered by Mr. J. H. Crespi, who discusses this ancient seat of learning as an entrance to the medical profession. The matter is not very deeply entered upon, as the writer strays easily into pleasant quadrangles and is drawn away by the social fascinations of undergraduate existence. The Suppression of Malaria is the subject of an article by Dr. Arthur R. Waddell, who makes interesting observations upon this problem as it affects the enormous areas of Asia and the more confined ones of European malarious districts.

In accordance with the methods laid down for its future in the January number of the *Practitioner*, one special subject is considered in all the chief original articles of the February issue, the subject being Medical Examinations for Insurance. Dr. T. Colcott Fox considers the special functions of the medical examiner and his conclusions are in the main the same as those arrived at from the opposite point of view by Mr. James Chisholm. Both are undoubtedly right in affirming that what is wanted from the medical examiner is a record of: (1) facts of the patient's case from all medical points of view; and (2) the impressions of the examiner. Mr. Chisholm, however, thinks that no judgment is required as to expectation of life, this being left to the combined judgment of the chief medical officer of the company and its actuary. Mr. Chisholm's long article will be read with much benefit by all medical men who are called on to make these examinations. He thinks that it is unwise for the usual medical attendant to be an examiner of his patient. We quite agree with him. Dr. T. Glover Lyon gives model forms for life assurance as drawn up by the Life Assurance Medical Officers' Association. Dr. J. J. Perkins discusses the purely medical aspects of life assurance in a comprehensive article, and Mr. J. Jackson Clarke deals similarly with the surgical side of the matter. Some of Mr. Clarke's deductions, if carried to their logical limit, seem to us hard upon candidates. In his view hammer-toe, for instance, as an indication of rheumatoid arthritis would considerably prejudice a "life." Thomas Sydenham, as the Medical Hero of the Month, is the subject of an attractive little article that is in the main abstracted from Dr. J. F. Payne's admirable book on the famous physician. Dr. Arthur Newsholme's conclusion on the Influence of Soil on the Prevalence of Pulmonary Phthisis is that this influence is limited to the action of wet soils as a predisposing cause through the tendency to catarrhs of respiratory mucous membranes that such soils occasion. Dr. H. D. Rolleston discusses Recent Literature on Diseases of the Digestive Organs—congenital pyloric obstruction, tumours of the appendix, and chronic pancreatitis being the most important conditions referred to.

New Inventions.

SANITARY PAVING MATERIAL.

WE have received specimen blocks of a sanitary paving material for which several important claims are made. Already this material has been employed in many large and busy streets with satisfactory results after several years' trial. We have carefully examined specimen blocks taken up from a busy thoroughfare in London where they had been laid down in 1897. From a section of one of these blocks it is quite clear that the material is absolutely non-absorbing. The "business" surface of the blocks was just veneered with a film of the usual road deposit which readily detached on passing a stream of water over it, leaving it quite clean. The blocks are exceedingly heavy and are denser than the hard woods commonly employed for the same purpose. They appear to consist of small pieces of granite fixed in a bitumen-like bed. The compost is nearly black and the surface practically radiates no light or heat. Apparently the blocks never wear smooth to a slippery degree and thus they afford an excellent foothold for the horses while at the same time they become sufficiently smooth to render traffic as silent as possible. The surface is easily cleansed. It is stated that the blocks being laid closely together the small space between them is soon closed by compression under traffic which prevents the ultimate absorption of noxious liquids. It seems to us that any noxious liquid that might leak in at first would be enclosed by the same process. However, an examination of blocks that have been in use for three years scarcely justifies the view that liquid sweepings are thus enclosed, but rather that the spaces are so quickly closed as to avoid this possibility. The material is exceedingly durable and, as far as we are able to judge, excellently adapted for the purpose, chiefly because of the cleanly state of the street which its use as a paving roadway should secure, assuming that the blocks are properly laid. Its properties are such as to reduce to a minimum the formation of mud and dust. The Sanitary Block and Tile Pavement Company, Limited, of 17, Victoria-street, Westminster, supply the blocks.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 23, 1901.

The Constitution of the British Medical Association.

IT has been apparent for some time past that the British Medical Association is not in a state of rest. It is prosperous in the sense of numbers, its annual meetings are successful, and its journal maintains its high character. But for various reasons there has been a feeling of antagonism between the executive of the Association—i.e., its Council—and a considerable section of the members of the Association. The dissatisfied members have complained of absence of sympathy on the part of the Council with the views and wants of the rank and file of the Association, and also of the need of effective means for bringing the Council more into contact with the members and for subjecting it more effectively to the wishes of the members in the promotion of their views of policy. This antagonism came to a crisis in July last, when it was proposed to make the Council as far as possible the only authoritative body in the Association under a new set of articles of association. This proposal of the Council failed to secure support at an extraordinary general meeting of the Association; and at a general meeting held at Ipswich during the annual congress of the Association a strong committee was appointed to consider and to report upon the "best means of reorganising the constitution of the British Medical Association."

The provisional report of this committee, known as the Constitution Committee, is given in the form of a supplement to the *British Medical Journal* of Feb. 16th. To understand its essential proposals it is necessary to be familiar with the existing constitution of the Association. This cannot be set out in the course of an article, while it is familiar to most of our readers. It will be sufficient to recall the salient features. The present working organisation of the British Medical Association consists practically of the Council and the branches. The Association is believed to have over 17,000 members. Only two-thirds of these are members of the branches. The Association is actually a limited company and its Council practically a board of directors. The majority of the members of the existing Council are elected by the branches, but Vice-Presidents and officers add materially to its composition. The branches are of varying size and cover areas of varying size. They are often referred to by the Council for their opinion, but their decisions need not be followed by the Council. An annual meeting is held, and the time is mostly occupied with scientific discussions and social functions. But three general meetings of the members are also held during the annual congress, and at these the business of the Association is discussed upon the presentation of the annual report and the statement of accounts. Resolutions are passed by the members at these general meetings and, according to counsel's opinion, the Council is bound to give effect, as a general rule, to such resolutions if due notice be given of the motions from which they arise. The counsel of the Association, Mr. FRANCIS B. PALMER, in April of last year expressed the opinion that to give such powers to general meetings, which are often small and fortuitously composed, is "unsuited to a concern of this magnitude and exposes the interests of the members at large to grave peril." Both the Council of the Association and the members who most actively resented the new articles suggested by the Council seem to have agreed that the general meetings of the Association were not suitably organised for the expression of the views of the great body of members. The perception of this by two parties in the Association, taking for the most part different points of view, has led to the chief suggestions of the Constitution Committee.

The Constitution Committee in their report propose a scheme of which the following is a summary. They contemplate a change in the constitution of the Council, reducing the number of *ex-officio* members, and making it more representative of the rank and file of the Association. Units of local organisation, corresponding for the most part to Parliamentary divisions, and so covering areas of moderate extent, are to be created, and the divisions are to be grouped to form branches. Henceforth there are to be no unattached members of the Association, but every member of the Association is *ipso facto* to be a member of the division in which he resides and will have no excuse for not attending the meetings of that division. The most striking recommendation of the Constitution Committee has reference to the means for giving importance to the opinion of divisions. Obviously the divisions are too numerous to send representatives to the Council. But each division is to be empowered to elect annually a delegate, who will represent the division at a meeting of delegates to be held annually at the same place and time as the annual general meeting of the Association. This meeting of delegates is to have special charge of medico-ethical questions and will have to consider reports of the Council and other matters connected with the business side of the Association, finance and the editorial management of the journal being expressly placed without its jurisdiction. Much is expected of the delegates under the new scheme. They will be required to vote on every question in accordance with the views of their constituencies expressed in resolutions at divisional meetings within a period of three preceding months. The delegate is to have a vote according to the numbers of his division, so that one delegate will differ from another delegate in importance. The quorum of the annual meeting of delegates is to be one-half of the total number of delegates, and their resolutions to be binding on the Council must be carried by a majority of two-thirds. The vote of the annual meeting of delegates on the subjects within their competence is to be guiding as a matter of policy on the Council, who, however, are to be given a power of *referendum* where it is of opinion that the delegates have exceeded their powers or

have recommended a course that would be injurious to the interests of the Association. The travelling expenses of delegates in attending the annual meetings will be paid out of the funds of the Association and will come to a very considerable sum—perhaps £3000 per annum.

Working constitutions are not made by abstract resolutions, and we heard with concern of the duty imposed on some two dozen gentlemen to "reorganise the constitution" of the British Medical Association. According to our view, a constitution has to be evolved, to grow, to be altered and adapted from time to time to meet new circumstances. The question is whether the scheme of the Constitution Committee of the British Medical Association is one of natural evolution. We doubt it. We are impressed with the boldness of those who have cast the constitution of a prosperous Association into the melting-pot. But we hasten to say that the report of the committee and the discussions which led up to it are imbued with moderation and a sense of responsibility. A respect for the views of others is shown that is worthy of the occasion and forms the best argument for the committee's recommendations. We hope that the report will be considered carefully by the branches and that, if the scheme of the Constitution Committee is adopted in whole or in part, the innovations will be given a trial in the same spirit of moderation as that in which they are put forward. Otherwise we should expect the executive of the Council to suffer and in time to be composed of inferior men, who would be the willing victims of dictation and delegation. It is this aspect of the report which most demands attention.

The Housing of the Working Classes in London.

THE housing of the working-classes is not only one of the most urgent questions from a medical point of view now clamouring for attention from the Legislature, but it is also a question in which the KING takes a deep personal interest. The London County Council has attempted to put before the public a complete history describing what has been done in the metropolis for the h using of the working-classes, and in view of the reference made to the whole matter in the Speech from the Throne the action of the Council is seen to be very opportune. The volume published by the Council formed the basis of a series of articles which we recently published.[1] But the subject is so complicated and of such extreme medical importance in so many directions that we make no excuse for recurring to it. Its difficulty is well proved by the fact that even Mr. C. J. STEWART, the clerk of the Council, Mr. W. J. RUSSELL, and Mr. M. H. COX, LL.B. Lond., who together prepared the volume in question, had great difficulty in obtaining correct figures, especially in regard to the actual numbers of persons for whom new and better dwellings have been or will be provided. So many records have been kept, drawn up at different times by different authorities and embracing various schemes or sections of schemes, that the figures given fail to agree. Indeed, it was not until after the bulk of the work had gone through the press that a final and corrected set of figures was obtained and added in an Appendix. Hence the statistics given in different parts of the book do not tally, the figures, for example, on page 328 do not agree with the figures published on page 43. If those who are at the very fountain-head of information may thus be led into error it is no wonder if outside critics are at fault. Yet if we abstain from detail and content ourselves with a broad generalisation the position becomes sufficiently clear for practical persons to discuss it, and the acrimony that has been imported into the question by some seems to us quite unnecessary. To recapitulate the facts briefly, the Metropolitan Board of Works cleared 51 acres of insanitary areas on which 29,056 persons were living. It did not itself attempt to re-house these persons, but sold the land to artisans' dwellings companies for some £377,000. This left a loss on the cost of the clearances of £1,605,088, money which the ratepayers have to pay and for which no direct financial return will be obtained, though indirectly, there will accrue all the advantages which result from a general improvement in the public health. The companies to whom the Metropolitan Board of Works sold this land re-housed 27,780 persons. When in 1889 the County Council replaced this authority the artisans' dwellings companies had exhausted their powers of action, and no one could be found to purchase the land on which clearances had been or were to be made for the carrying out of the legal obligation to build only workmen's dwellings. Therefore the County Council had to replace private enterprise and itself build and let out in tenements the required dwellings. At a dead loss of £1,045,050 the County Council cleared 31 more acres and the local vestries nine more acres, making, with fractions added, a total clearance since 1875 of 94 acres. The County Council have re-housed or provided for the re-housing of 34,196 persons and the vestries have similarly dealt with 2452 persons, giving (with the 27,780 persons mentioned above) a grand total of 64,428 persons who have been or will be re-housed by the schemes adopted since 1875 and up to March, 1900. Since then further schemes have been adopted by which probably some 3000 more persons will be housed. More land is being purchased for this purpose.

Such are the facts, and though they represent a very vast undertaking its insufficiency to deal with the problem of housing the London poor is painfully evident. The population of London is said to have increased to the extent of 700,000 since 1881. This means a "submerged tenth" amounting to 70,000. There must be in the metropolis by this time some 500,000 persons who cannot afford to pay a sufficiently high rent to secure healthy houses. The common lodging-houses may provide for from 28,000 to 30,000 of these, and the workhouses and workhouse infirmaries for a larger number. The number of paupers in the metropolis during last year was estimated at 125,000. Still a formidable balance remains. To put the matter crudely, the question is whether the ratepayers of London are going to pay a portion and in some instances the whole of the rent for the housing of about 500,000 persons. If not, how are these people going to be compelled to live in healthy

[1] THE LANCET, Jan. 12th (p. 124) and 19th (p. 205), and Feb. 2nd (p. 351), 1901.

homes? The position seems hopeless if only because of the extravagant cost of effecting the clearances and of purchasing land and houses. With the exception of the inmates of the workhouses and those few who contrive to sleep on doorsteps, in the parks, in passages of houses, or in unlet vacant houses, all these extremely poor people not only pay rent but, in comparison with the accommodation given, very high rent; while all enterprise directed towards providing them with decent accommodation at moderate prices is handicapped by heavy initial expenses. For clearances effected under Part I. and Part II. of the Housing of the Working Classes Act of 1890 there are clauses tending to reduce these expenses, but the places cleared must first be condemned as insanitary; and the land must be sold though there may be no purchasers forthcoming even when the land is offered at a quarter or a third of the cost of effecting the clearance. When purchasing land under Part III. of the Act the local authority may retain it in perpetuity, but then the system of compensation is that set forth by the Lands Clauses Consolidation Act of 1845. This means that unless a friendly agreement is made each side nominates an arbitrator. Both arbitrators receive a fee of 50 guineas for valuing the property and invariably they disagree. Then they appoint an umpire who charges 50 guineas a day. Expert witnesses are called and they cost about £40 each. The total expenses, with the solicitors' fees, rarely amount to less than £1000, and the entire property may not be worth more than £3000 or £4000. There is an unwritten law which sanctions an addition of 10 per cent. on the estimated value as a sort of compensation for disturbance. Thus it may safely be said that if a local authority wishes to buy under Part III. of the Act a property worth £4000, and fails to effect a friendly agreement, it will have to pay in all some £5000. Evidently there is need here for further legislation. The great cost of arbitration might be avoided by simply taking the rateable value of the property to be purchased as the basis of the compensation to be paid, but this is a drastic suggestion not likely to be followed unless the owners of London house property find their pockets actually affected by the difficulties arising out of the housing of the poor. The compulsory purchase at a very low price of such property as has become so degraded as to constitute a real danger to the public health ought, however, to be a legal possibility. When the speculator on the extreme misery of the poor has allowed his property to degenerate into a public nuisance and danger, what right has he to receive handsome compensation? On the other hand, seeing that the local authority can no longer sell the land it purchases under Part I. and Part II. of the Act, it should be officially recognised that it has the right to keep such land just as if it had been purchased under Part III. of the Act. Such powers would greatly lighten the difficulties of municipal enterprise, and it is all the more necessary to demand these facilities, as municipal enterprise is now the only form of enterprise which in London shows any disposition whatsoever to deal with the question.

If we have spoken at such length on the financial difficulties it is because they constitute the main obstacle to the housing of the poor and of the working-class. Though these are matters that should, strictly speaking, be dealt with by political economists, still the sanitary reformer is invariably met with financial objections raised against his proposals. So far as the purely sanitary aspect of the question is concerned there are no difficulties any longer. On the contrary, every metropolitan borough now possesses an able medical officer of health receiving a salary that secures his independence. All these sanitary officials have gone through the same training and possess a uniform and special technical knowledge of the laws of hygiene. So far as the work of the medical profession is concerned, all competent medical officers of health can speak out as with one voice. The conflict of opinion arises only when we quit the domain of sanitation to tread on the uncertain ground of political economy. Unfortunately the two are inextricably linked together. It does not suffice to condemn overcrowding, bad drainage, and ineffective ventilation. It does not suffice to say how houses should be built and drained. The money must be found before these improvements can be effected, and that is why the progress realised has been slow as compared with the necessities of the case. But it is satisfactory to feel that in future there will be no delay due to the health service of the metropolis. The London local authorities no longer content themselves with merely pretending to observe the law by paying a nominal salary to a medical man who best satisfied his employers when he did as little as possible. London can now boast of a really efficient staff of independent medical officers of health, and it will not be their fault if greater progress is not more rapidly accomplished than heretofore.

Some Points in the Metropolitan Water-supply of 1900.

THE December report on the condition of the metropolitan water-supply presented by the Water Examiner to the Local Government Board has just been published. The Thames water at Hampton, Molesey, and Sunbury was in good condition during the greater part of the month, but from the 1st to the 6th and from the 9th to the 28th days of the month it was more or less turbid. The engineer of the Chelsea Waterworks Company keeps a daily record of the state of the river at the intake of that company, and as the amount of water supplied to their customers is less than that which they are authorised to draw they are able when the river is in an unsatisfactory state to close their intake for several days at a stretch. According to the report of the engineer of the Chelsea Company the state of the water was "indifferent" on the 6th, 8th, and 29th days of the month, and "bad" on the 30th and 31st, and on four days during the month no water was taken from the river by the company. The East London Waterworks Company have an intake from the Thames and usually abstract from the river about 8,000,000 gallons per day. There is no reservoir for the storage of this water, and it therefore follows that water described by the Chelsea Water Company's engineer as "indifferent" and "bad" was presumably taken by the East London Company and allowed to pass straight to their filter-beds without undergoing any process of sedimentation. The

Water Examiner says in his report that all the samples of the water collected at the works of the companies were efficiently filtered. It is not, however, stated that the chemist employed by the Local Government Board collected any of the water which was obtained from the filter-beds of the East London Company during the time at which the natural river water was in an indifferent or bad condition. We should be interested to learn what the quality of the filtered water was on these occasions. It may, perhaps, be well again to point out[1] that the water from the Thames station of the East London Company passes through a main about 19 miles in length to a covered reservoir situated in Finsbury Park, and that the same reservoir is supplied also from the Lee Bridge station of the company. Armed with this knowledge the Water Examiner and chemist appointed by the Local Government Board will be able to see in what manner they can best obtain accurate information as to the state of the Thames-derived water supplied by the East London Company. It is true that neither the Water Examiner nor the chemist have any right of entry into the premises of any one of the metropolitan water companies, but it has many times been stated that no impediments have ever been placed to their access to all parts of the companies' works. It does not appear, therefore, that there is any reason why this matter, to which we have before called attention, should not be investigated at the earliest opportunity; that is to say, during the next period at which the water is turbid.

During the year 1900 little progress has been made by some of the metropolitan water companies towards giving a continuous supply of water to all their customers, a duty which they are now under a statutory obligation to perform. The Chelsea and Grand Junction Companies profess to give a constant supply to all their customers, and the East London Company to 99 per cent. of theirs. The Kent Company at the end of the year 1900 supplied 92 per cent., which may be compared with 91 per cent. supplied at the end of the year 1899. The Kent Company, it is fair to point out, supply a number of people who live at high levels on hills scattered over a considerable area. This cannot be said in the case of the Lambeth Company. At the end of the year 1899 this company gave continuous supply to only 75 per cent. of their customers, and at the end of the year 1900 they supplied only 76 per cent. It is much to be hoped that the local authorities, or the customers themselves, who now have power to insist on having a continuous supply, will use their privilege in this respect. The customers of this company cannot be congratulated on the way in which they allow themselves to be treated. Month after month we find that the water supplied by the Lambeth Company, as compared with the water of the other companies, exhibits the deepest average tint of brown, a fact which points to inadequate treatment of the Thames river water. It cannot be pleaded on behalf of the company that they are not sufficiently paid, for the charges which the company are allowed to make are higher than those allowed in the case of any other company. During the year 1900 the New River Company have extended their constant service to the extent of 3 per cent. of the total supplies—that is to say, 95 instead of 92 per cent. of all their customers now have a constant supply. It may be remembered that parts of the City of London had a short time ago only an intermittent supply, but it was stated that constant service was being largely extended. During the year no improvement in this respect has been made in the case of the Southwark and Vauxhall Company—93 per cent. of their customers had constant service at the end of December, 1899, and the same proportion at the same date in the year 1900. Of all the metropolitan companies the greatest improvement in regard to the giving of a constant service has been made by the West Middlesex Company, of whose customers 98 per cent. instead of 93 per cent. are now constantly supplied, an improvement of 5 per cent. of the total number.

The report of the Water Examiner shows that the tint of the water supplied by the companies has varied within considerable limits; the proportion of brown tint as seen in a two-foot tube ascertained by comparison with the standard tint of brown has ranged from 4 degrees to 18 degrees. Dr. THORPE, the chemist appointed by the Local Government Board, reports that all the samples taken from the mains of the Chelsea, West Middlesex, Southwark and Vauxhall, New River, and Kent Companies were clear. One sample each of the East London and Grand Junction Companies, and two samples of the Lambeth Company's water, contained a few particles of iron rust, and a sample of the Lambeth water taken at Brixton was finely opalescent and contained a minute trace of suspended inorganic matter and a few infusoria. It would be well if the Local Government Board were to make provisions by which their water analyst would be enabled to make a much larger number of examinations than he does at present. Any so-called economy displayed by the Local Government Board in declining to provide sufficient money for the proper payment of their skilled analyst would be a great mistake. It is essential for the interests of the water consumers of London that a thorough examination should be constantly made of the water which is supplied to them, and under the existing conditions the officers of the Local Government Board are allowed facilities for visiting the companies' works which are not possessed either by the County Councils or by any other metropolitan authority. Up to the present time we understand that no difficulties have at any time been made by any of the companies as to a thorough examination of all their works by the officers of the Local Government Board. It is hardly to be supposed that they would now adopt so unwise a course, but should they do so the President of the Local Government Board would not have the slightest difficulty in passing those further measures of control which have already been recommended by two Royal Commissions and which we think should be embodied in a Bill and passed without delay.

[1] THE LANCET, May 8th, 1897, p. 1292.

PLYMOUTH BOROUGH INFECTIOUS DISEASES HOSPITAL.—At the meeting of the Plymouth Borough Council held on Feb. 12th it was decided to enlarge the Borough Infectious Diseases Hospital at an estimated cost of £8512. At present the hospital contains only 32 beds; the additional accommodation will consist of two pavilions containing 10 and 22 beds respectively.

Annotations.

"Ne quid nimis."

THE ROYAL COMMISSION ON THE SOUTH AFRICAN HOSPITALS.

THE report of the Royal Commissioners upon the South African Hospitals appeared at that sad moment when all our thoughts were fixed upon the historic event taking place at Osborne House. The report did not, therefore, immediately receive the attention that was its due, but such attention will no longer be withheld from it. It is abundantly clear from the discussions which have taken place and which will continue to take place in both Houses of Parliament, and from the correspondence in many journals, that the public are awaking to the conclusion that the report is an exceedingly interesting document. Its importance may be gauged from the character of some of the criticism with which it has met. We begin this week to lay a full abstract of the report before our readers. Parts I. and II. of the report, which lend themselves to greater condensation than the remainder of the report, will be found on page 573 of the present issue, in abstract. The gist of Parts III. and IV., which will have to be published at greater length, will appear next week. We shall then proceed to deal with the report.

THE RELATION OF CRIMINALITY IN THE OFFSPRING TO ALCOHOLISM IN THE PARENTS.

DR. L. ROBINOVITCH, formerly assistant physician at the St. Anne Asylum, Paris, contributes to the December, 1900, number of the *Medico-Legal Journal* of New York a paper on the above subject and makes an attempt to trace the "extent to which alcoholism in the parent is responsible for that psycho-pathology in the offspring which manifests itself in criminality." The clinical material examined consisted of the histories of persons sequestrated in asylums and prisons. In order to avoid confusion, however, it was necessary to exclude from consideration those persons whose mental condition made them wholly irresponsible for their acts, such as those who had committed crimes under the influence of insane impulses and delusions in all their varieties, or who were the subject of organic mental derangements or chronic alcoholic insanity, or who exhibited symptoms of congenital mental and moral deficiency. In a word, those persons were excluded "whose vicious deeds were committed without intention or forethought of malice and intent." Thus of 50 criminals admitted to the St. Anne Asylum during the two years 1898 and 1899 and fulfilling the above conditions the clinical histories were characteristic, and the following may be quoted as a typical case. A man, 27 years of age, was the son of a drunkard. The father was addicted to the use of absinthe and was a man of abusive and violent disposition towards his wife, the latter being a woman of normal disposition and of good bodily health. There were seven other children of the marriage in addition to the patient. Of these, one, a girl, was feeble-minded and became the mother of an illegitimate child, one boy was timid and odd in conduct, while another boy and a girl were dull and incapable of earning a living. The patient's paternal aunt was melancholic and suffered from attacks of depression and crying, and his uncle was insane. His grandmother on the mother's side was markedly irritable and suffered from intense mental depression. The patient was born at full term, walked at the age of three years, and began to talk at the age of five. At the age of 16 he began to exhibit vicious propensities, frequented disreputable places, and was convicted of attempts at rape on young children. At the age of 18 he enlisted as a volunteer but was discharged afterwards for larceny. He took to drinking and was placed as a patient in an asylum, whence he escaped shortly after admission. "From that time on he continued gravitating from asylum to prison and back again." After every discharge he would commit a crime, be caught and sent again to prison. He was addicted to absinthe-drinking and suffered now and then from epileptiform attacks. He was, moreover, an expert simulator of these convulsions and had succeeded in deceiving physicians. He passed successively through the asylums of Villejuif, St. Anne, Ville Evrard, and Bicêtre as a patient and was detected in the practice of unnatural sexual crimes. When living outside he consorted with prostitutes on whom he depended for maintenance. He associated with thieves, and attempted murder, and was eventually placed in the St. Anne Asylum. Degenerate, depraved, with perversion of both instincts and moral sense, his life was one continuous manifestation of criminality and vice. He was arrested more than thirty times and his admissions to asylums were still more frequent. In a second case, that of a boy, aged 10 years, the son of an alcoholic father, the symptoms were excessive passion and temper, destructiveness, and attempts at arson, all manifested in childhood. He contracted vagrant habits when a boy and attempted to kill another boy, lying in wait for 12 days near the latter's residence. From a detailed statistical analysis of such histories Dr. Robinovitch concludes that in the vast majority of cases (over 90 per cent.) alcoholism existed only on the father's side. Of a total of 127 children 50 were fit for asylum or prison and formed the material for the present study, 40 died in infancy or prematurely, and 37 were living. Of the 37 living, 27 were in good physical condition. The rest suffered from meningitis (four cases), convulsions (three cases), or other forms of disease, and one of them was beginning to manifest criminal instincts.

THE MEDICAL OFFICER OF HEALTH AND THE PLAGUE AT HULL.

AT a meeting of the Hull Sanitary Committee held on Feb. 15th a gratifying communication was read from the Foreign Office stating that the foreign representatives in London of the parties to the Venice Convention had been notified that the plague at Hull had now ceased. Mr. W. Holder said that he thought that the fact of the prompt stamping out of the plague, the saving of probably hundreds of lives, and the conserving of the trade of the port should not be allowed to pass without the committee marking in some way their appreciation of the energy and services rendered by the medical officer of health, Dr. John Wright Mason. Dr. Mason of recent years had had to meet in behalf of the city of Hull assaults of cholera, small-pox, and plague, and he considered that Hull was deeply indebted to him. A sub-committee was appointed to consider what form the testimonial should take. We congratulate Dr. Mason most warmly both upon the success which has attended his efforts to arrest the plague and also upon the fact that his services are duly recognised by those whom he serves —a state of matters which is not so common as it should be. The post of a port medical officer of health is nowadays singularly arduous and responsible. Owing to the facilities which modern invention gives for intercommunication among the nations the march of epidemic diseases is infinitely more rapid than it used to be. For us in these islands infection is always at our doors. The "shuttles of an empire's loom" weave their web across every sea and ocean, and there is always the chance that plague, yellow fever, or cholera may accompany their course. Coincidently with Hull being

declared free from plague a Peninsular and Oriental mail-steamer came into Plymouth reporting that one of her crew had died from plague before the vessel left Bombay. No fresh cases had occurred, but all the passengers and crew were carefully inspected and the names and addresses of those who wished to disembark were recorded. So the work goes on—attack and repulse follow one another all round the coast; therefore let us remember with gratitude the unwearying watchfulness of our port medical officers.

THE CASE OF HENRY DAVIS.

ON Feb. 15th, Henry Davis of 309, Portobello-road and 25, Oxford-gardens, was convicted on a summons charging him with wilfully and falsely pretending to be and using the title of "Doctor," thereby implying that he was a registered medical practitioner. Mr. Curtis-Bennett, a London magistrate of long experience, according to the report before us described the case as the worst he had ever had before him and fined Davis £20 with 10 guineas costs. The nature of "Dr. Davis's" business had been fully explained to the learned magistrate; his excuse for using the title "Doctor" was said by his counsel to be a diploma from Berne University, but the exposure of his methods by the prosecution somewhat discounted the value of this statement. A bottle of sham "medicine," for instance, sold by Davis as of special virtue for 17*s*. was practically the same as another sold by him for 4*s*., while full explanation was given of his traffic in "pills a boon to womankind." "Dr. Davis" is one of the oldest and most constant advertisers of these pills. In our series of articles on Quacks and Abortion we dealt with his goods in detail[1] giving their analysis. This certainly did not prove them to be effective abortifacients, but the literature which accompanied them showed that they were sold, and likely to be taken, as such. They were "Famous female pills," "the most effective in the world." There was the usual indication of the character claimed for them supplied by the warning that they were not to be taken by those expecting to become mothers, and on the same sheet of paper was the advertisement of a book invaluable for women, entitled, "How to Limit your Family and Woman her Complaints." While to some extent the business of Henry Davis may suffer by his being obliged to drop the title "Doctor," and while the proceedings taken may to some extent act as a deterrent to him, it seems to us a matter of regret that such a trade as his should be permitted to continue without more direct interference by the police. No one can accuse him of concealment. Mr. Curtis-Bennett seems to have said that happily advertisements such as those which had been referred to before him were now refused by most of the newspapers. The particular newspaper to which reference was made before Mr. Curtis-Bennett as giving publicity to the trade of "Dr. Davis's Famous Pills," "a boon to womankind," was the *People*. In a recent issue of the *People* the advertisement of Davis does not stand alone. We note on another page that of Martin who offers "Ladies' apiol and steel pills, a remedy for all irregularities, superseding bitter apple, pill cochia, pennyroyal, &c." These advertisements appear to us to be tolerably plainly worded and to indicate without much concealment the nature of the goods offered by the advertisers. We dealt, however, with Martin's pills, as well as with those of Davis, in the issue of THE LANCET referred to above and our articles were forwarded to the newspapers which we then named as containing objectionable advertisements. We have always expressed the belief that these advertisements had only disappeared for a time and that they would gradually be seen again, and their reappearance in the *People* confirms our view. Perhaps, however, the attention of its proprietor or proprietors may not have been called to the matter. We are strongly of opinion that it is one worthy of the notice of all newspaper proprietors who are concerned with their personal honour as well as with the honour of the newspaper press.

[1] THE LANCET, Dec. 31st, 1898, p. 1808.

"PURE BEER."

THE "Pure Beer" party were lucky in the ballot on Monday, for Mr. Purvis, the Member for Peterborough, who takes a keen interest in the movement, secured the fourth place. A Bill was accordingly read for the first time on Tuesday dealing with the subject on the lines of the Bill brought in by Sir Cuthbert Quilter in 1886. Recent events have certainly increased the chances of the movement, but we still regard them as very slender.

MEDICAL REPORTS OF THE CHINESE MARITIME CUSTOMS.

THE medical reports of the Chinese Maritime Customs for the half-year ended March 31st, 1900, published in London by Messrs. P. S. King and Son, consist of articles by Dr. O. F. Hall, Chungking; Dr. J. A. Lynch, Chinkiang; Dr. W. H. Park, Soochow; Dr. H. J. Hickin, Ningpo; Dr. H. M. McCandliss, Hoihow and Kiungchow; and Mr. A. S. Deane, Pakhoi. All these gentlemen describe the health of the foreign residents in their respective towns as satisfactory. Dr. Hall says that in Chungking "opium-smoking is very common and many women as well as men are enslaved to the habit. Its effects are bad beyond description, yet vary greatly in different cases." Among some portraits of patients appended to his report is one of a woman who, he says, "is 77 years old and has used opium daily for 47 years; she began for pleasure and has never been sick in any way; she shows no symptoms of debility from opium poison. She has broken off the habit and remains cured." Dr. Park mentions that he had recently used for impacted fæces "an injection of peroxide of hydrogen and the effect was all that could be desired." Dr. Hickin describes a case of malarial colic which lasted from the middle of September, 1899, to the end of January, 1900, and was then speedily removed by a few doses of quinine.

DECREASE OF GENERAL PARALYSIS IN ENGLAND AND WALES.

DR. R. S. STEWART of the Glamorgan County Council has furnished an interesting paper in the January number of the *Journal of Mental Science* dealing with the statistical records of the Commissioners in Lunacy with reference to the prevalence of general paralysis. In their fifty-third report the Commissioners conclude that general paralysis is "not increasing among the general population." Dr. Stewart compares the two halves of the decade 1888–97 and tabulates them as follows in order to show the percentages of general paralysis in patients admitted to asylums:—

Years.	Males.	Females.	Total.
1888-92	14·7	3·4	8·9
1893-97	13·1	2·8	7·8

The conclusion is that the diminution in general paralysis affects both males and females. In only one class of society is there an exception to this, and that is the one which provides the private male general paralytic. "The proportion in this class continues to increase, though at a slightly diminishing rate, until now it has arrived at that point that the proportion of private male general paralytics overtops that for male pauper patients. The steady progressive decline of general paralysis among private female patients ..... is continued and unless some material change takes place ..... the disease will apparently be extinct in half a century from the present." All age-periods are not affected

alike in the general decrease which has taken place. The greatest decrease takes place at the age-period of 45–54 years of age, whereas if regard be had to general paralysis in youths and young adults there is an actual increase. Different counties show different results, increase being shown in the industrial and coal-mining counties and decrease in rural districts.

BRITISH MEDICAL BENEVOLENT FUND.

THE annual meeting of subscribers to the British Medical Benevolent Fund was held at 84, Brook-street, W., on Feb. 12th, the President, Sir William Broadbent, Bart., being in the chair. The treasurer's financial statement for 1900 and the report of the committee were presented and they recorded steady and satisfactory progress. In the annuity department the capital has been increased by the purchase of £1600 Paisley Corporation 3 per cent. stock. The income from investments, all of which are in securities authorised by the Trustee Acts, amounted to £2355 13*s.* 3*d.*, of which £2213 6*s.* 8*d.* were paid away in annuities. During the year 16 vacancies were caused by death and they were promptly filled from the reserve list. The annuitants now number 111. In the grant department the subscriptions amounted to £1110 9*s.* 2*d.* and the donations to £773 7*s.* 6*d.* These figures are an increase upon those for 1899 but in the case of the donations the difference is due to two special gifts of 200 guineas and 100 guineas respectively. The grants made amounted to £1549, which sum was distributed to 165 cases in sums varying from £5 to £20. The accounts have been as usual subject to a searching investigation by a chartered accountant who in his report draws attention to the smallness of the working expenses, which were again less than 5 per cent. Hearty votes of thanks were passed to the President and to the treasurer, Dr. S. West, who with the remaining officers were unanimously re-elected. As in former years many distressing and well-recommended cases have had to be passed over in favour of still more urgent ones, and where aid has been given the sum granted has often been miserably inadequate, though all the Fund could afford. The applications reveal a depth of poverty which few can realise and which probably none suspect until the facts are put before them. The committee earnestly and confidently appeal to the profession to make the work of the fund and its claims for increased support more widely known.

THE PROPHYLAXIS OF MALARIA IN THE ITALIAN NAVY.

THE *Annali di Medicina Navale* for January, which, out of sympathy with our great national loss, is published with a black border, contains an important contribution on the Prophylaxis of Malaria by Dr. R. Procaccini of the Italian navy. It is illustrated by five maps and a graphic picture representing a detachment of investigators slumbering peacefully *al fresco* in low iron-strutted hammocks with their heads enveloped in bags and all other parts that are vulnerable to the anopheles and its congeners protected in a similar way. The article in the first place contains a brief but clear account of the present state of our knowledge regarding the nature of malaria and the best means of warding off its assaults. This ground has now been gone over a good many times, but the author's patriotism must excuse him. England and Italy, exclaims the author in his exordium, were the first among the nations to take an interest in the great question, but after a brief interval their good example was followed by Germany, next by France, and finally by Belgium. In the second place Dr. Procaccini relates the history of some experiments which were carried out by an expedition under Government auspices in one of the most malarious districts of the kingdom. The locality selected consisted of the extreme north of Sardinia, together with the islands of Maddalena and Caprera, the last named, it is scarcely necessary to say, having been the home of Garibaldi. The details of the story are full of interest. The expedition was sent out with special reference to prophylactic measures in the naval and military services. Out of 104 men forming the expedition 103 escaped malaria entirely. The 104th man was attacked, but it was ascertained on inquiry that he was in the habit of displacing his protective mask at night in order to smoke. If a mask is a *sine quâ non* a difficulty in this connexion at once arises with sentries, whose vision naturally should be as unobstructed as possible, but who require protection from malaria as much as the rest of the forces of war. Dr. Procaccini observes, "where there's a will there's a way," but the means to overcome this objection will take some finding. Serious difficulty in carrying out prophylactic measures in the services, both in Italy and in other countries, lies in the fact that soldiers and sailors are hardly made to understand the value of hygienic precautions. There is room for hope that as education advances this source of trouble will be eliminated.

THE BIRMINGHAM CONSULTATIVE MEDICAL AND SURGICAL INSTITUTION.

IT will be remembered[1] that the General Medical Council at its last session in November, 1900, had before it the case of Dr. Henry Ward Irvine, the consultant to the Birmingham Consultative Medical and Surgical Institution. The Council came to the conclusion that the charges against Dr. Irvine of advertising were proved, but gave him until May, 1901, to reconsider his position. This action seems to have vexed the committee of the Consultative Institution, and a largely attended meeting was held on Feb. 13th to consider the action of the Council. Mr. Arthur Chamberlain was in the chair. Mr. Councillor Nettlefold rose to propose a motion of confidence in the institution, a motion which had been drafted by the committee. In the course of his speech he remarked that if the institution were not in existence the class of people for whom it was called into existence would have one of three courses open to them. They would have to go to a "street doctor," to the hospitals, or to a consulting physician who would charge very high fees. If Dr. Irvine was struck off the roll of his profession what did it matter to them? He would not be able to sue for fees, but they were business men and they got their fees in advance. He would not be able to sign death certificates, but they did not intend him to kill his patients. After other members had spoken Mr. Arthur Chamberlain addressed the meeting and in the course of his speech said that if the General Medical Council at the meeting in May should think that they were justified in depriving a fellow-practitioner of his means of living, the feeling of that committee would be to appeal to a High Court of Justice. With regard to the admission of persons to the benefits of the institution there should be no tests whatever, and even if all the consultants in the city agreed to make concessions with regard to fees to poor people, it would be wise for working men to have some arrangement of their own. The motion, which ran as follows, was carried with enthusiasm:—

"That this meeting is of opinion that the scheme of the Consultative Medical and Surgical Institution, Birmingham, for providing facilities for obtaining the advice and opinion of properly qualified physicians and surgeons at a fee within the means of people of limited income is of great advantage to the class affected, is calculated to materially reduce the abuse of hospital charity, and as it cannot possibly be an injury to anyone does not justify the opposition and abuse

[1] THE LANCET, Dec. 8th, 1900, p. 1688.

with which it has been met by certain members of the medical profession. This meeting accordingly requests the managers of the movement to proceed with their work and assures them of its continued confidence and support."

The committee is evidently very angry with the General Medical Council and with the Birmingham medical practitioners. Mr. Councillor Nettlefold's remarks are simply silly. He seems to imagine that no patients of a medical man die unless the medical man kills them; and as for his asking "what will it matter if Dr. Irvine is struck off the roll," he will find it will matter a great deal both to the Consultative Institution and to Dr. Irvine, who will be ill-advised to run contrary to the views of the highest tribunal of the medical profession and to the general opinion of his professional brethren. With regard to the advertisement cards which formed the basis of the complaint laid before the General Medical Council, Mr. Councillor Nettlefold, writing to the *Birmingham Daily Mail* of Feb. 15th, says that the committee have done their best to withdraw them. This is as it should be, but the system of the institution is, as we have pointed out previously, the chief matter for condemnation.

TRAFFIC IN CHILDREN.

THE dangers which beset the lives of infants who are made the subject of baby-farming are frequently and forcibly brought home to medical men practising among the poor, and it is useful to them to be aware of the law upon the subject. In one particular they are directly concerned in its enforcement, for under the Infant Life Protection Act of 1897, in the case of the death of an infant in the custody of a baby-farmer working under the Act, the medical man has to decide by withholding or giving his certificate whether an inquest shall or shall not take place. Should he refuse the certificate the coroner has no discretion but to hold the inquest. A case recently brought before a London magistrate, under another portion of the statute referred to, is an illustration of how, although passed with the best intentions, an Act of Parliament may to a great extent be unwieldy and ineffective in practice. A woman named Herbert had received a lump sum of £20 to take charge of an infant until it should be old enough to take care of itself, and had adopted the rather obvious, if dishonest, course of sub-farming the child, presumably for a small weekly sum, to an old woman, in whose custody it was suffering considerably from neglect. The fifth section of the Infant Life Protection Act provides that a person thus taking a lump sum for the bringing up of an infant under two years of age, if it be a sum not exceeding £20, shall give notice to the local authority in order that the future upbringing of the child may be subject to inspection. Herbert had not given this notice and so was summoned under the section referred to. Her first answer was that she had been paid £24 for taking the child, and had she been able to prove this, or indeed that she had taken £20 0*s.* 1*d.*, she would have been safe from the Act, which limits its protection, as we have stated, to children for whose rearing a sum not exceeding £20 is paid. She could not, however, establish this defence and so she was convicted, upon which there followed the question of how she was to be punished. The Act apparently only provides for the forfeiting of the money received in such a case, and Herbert had none of it left so she could not pay forfeit. The magistrate doubted whether, as there was no provision in the Act for this contingency, he could order imprisonment as an alternative for the money payment, and it looked as if there would be no possibility of inflicting any penalty at all. It happened, however, that in obtaining the child Herbert had produced a testimonial to her own merits which she had herself written, and she was charged with obtaining money by false pretences, pleaded guilty, and was sent to prison. This was, no doubt, a desirable termination to the case. But if a woman, who for a time had looked after the child for 5*s.* 6*d.* a week and had grown fond of it, had not informed an inspector of the county council of its removal from her care, and if the inspector had not been active in tracing it, Herbert might have realised a substantial profit on her deal owing to the premature death of the infant. Again, having been detected and her method of doing business exposed, she came near to escaping without punishment, while she was not eventually punished under the Infant Life Protection Act at all. Perhaps those who framed the Act intended that those who trangress it by not giving notice of their transactions under the fifth section of it should be punished by fine or imprisonment, as for an offence under the Act, and should not only be ordered to forfeit the sum received by them. The learned magistrate, however, does not seem to have taken this view, and certainly the section ordering the forfeiture of the money paid does not allude to the imposition of any other punishment as well.

SANITATION AT STEVENAGE.

THE life of a medical officer of health of a small district is not altogether an easy one. In the pursuance of his duties he is almost sure to come into contact with conflicting interests. If he is allowed to be in private practice as well as to hold his post of medical officer of health he not infrequently may be compelled to run counter to his brother practitioners; but perhaps his position is most difficult when he has to point out to the members of the urban or rural sanitary council, whose servant he technically is, sanitary defects in their property. Such a case has arisen at Stevenage, as instanced in the report of Dr. R. A. Dunn, the medical officer of health of the Stevenage Urban District, a report which has been commented upon in an open letter to the ratepayers published in the *Hertfordshire Express* of Feb. 15th. The passage in the report, a copy of which lies before us, to which allusion is made is as follows:—

"On looking through the inspector's journal I notice that he has made upwards of a hundred visits. As a result of these he brought to your notice some 28 pit or pail closets, only a few of which have been done away with; seven cases in which house property was not connected with the sewer; in most of these cases the work has been done, but in two cases, both, I am sorry to say, the property of members of your council, for a very long time our complaints were without avail, although the statutory notices were served. In one of these the work has not even yet been done. Let me point out the extremely bad effect this has in carrying out necessary improvements. Defaulters who are well aware of these and similar cases have more than once said to me: 'If we were only on the council we should not be compelled to do this.' Such a state of affairs brings your authority into contempt and acts as a grave obstacle to any reform."

This is undoubtedly a very grave state of matters and we certainly hope that the ratepayers will see to it in future that only men are elected on the council who will do their duty to their neighbour even if it be to their own hindrance. Dr. Dunn has, we think, put his finger upon the most harmful result which such jobbery on the part of the council brings about—namely, that other defaulters shelter themselves behind the evil deeds of defaulting councillors. Dr. Dunn also points out that his report and that of the sanitary inspector upon house connexions and that upon dairies and milkshops have received practically no attention from the council whatever. Well may he add that "this apparent apathy on the part of the council tends to cause its officers to lose that keenness and interest in their work which it is so important for them to have." We trust that before the next election of councillors those in fault will have seen the error of their ways and that the ratepayers will take

note of Dr. Dunn's remarks. In the meantime we congratulate him upon the stand which he has made for the purity of municipal life.

THE BEER-POISONING EPIDEMIC.

THE medical officer of health of Manchester, Dr. James Niven, has presented a report upon the outbreak of arsenical poisoning, a copy of which we have recently received. It deals exhaustively with the many aspects of the outbreak. Dr. Niven suggests that the recent occurrence does not stand quite alone and that previous mischief in connexion with alcohol has occurred in an epidemic fashion. It is possible that there may have been arsenic present in the beer formerly. There is, indeed, reason to suspect, according to Dr. Niven, that the same phenomena may have been going on for years, though in a slighter degree. This, he adds, would justify some delay in recognising the nature of the disease, since the cases would be regarded as ordinary alcoholic cases of a recognised type, with an unusual proportion of certain striking though not unknown features. We are glad that some stress is made in the report upon the advisability of instituting quantitative analyses. There is a slip in the report on p. 21 where in describing Marsh's test it is stated that the hydrogen evolved is passed through chloride of lime to dry it. Chloride of calcium is, of course, meant, as bleaching powder would most probably destroy arseniuretted hydrogen.

THE COMMUNICABILITY OF GLANDERS.

WE announced last week that the President of the Board of Agriculture has appointed a committee to conduct experimental investigations into the communicability of glanders. An official inquiry into the subject cannot be otherwise than beneficial to practitioners, both medical and veterinary, and particularly to those who make a special study of public health. Glanders is one of the most terrible of all the diseases which can be transmitted from animals to man, and every year instances occur in which human beings become infected from contact with glandered horses. Only a few days ago there was an illustration of this in the Fulham coroner's court, when an inquest was held on the body of a man who had died from the disease. The exact date and source of the infection were not ascertained, as the deceased was an erratic worker, but his occupation was that of a groom or odd man about cab- and omnibus-yards—work that continually brought him into contact with horses and harness. It is well known that glanders exists principally in London, Liverpool, and Glasgow, and that stables belonging to cabmen are those in which the disease is most frequently detected. The conditions under which the majority of cab-horses live are especially favourable for its spread; hygienic arrangements are often almost absent, the horses are crowded together in a totally inadequate amount of cubic space, and the manger is usually a long trough with no divisions in it to keep the food given to one horse apart from that of his fellow. Even if the divisions are provided they are so close that a horse has only to stretch out his neck in order to put his nose into his neighbour's share. As a rule, too, the horses drink out of one tank. This habit cannot be too much condemned; it is even questionable whether the street drinking fountains do not often do more harm than good by disseminating glanderous material. At almost any time of year, but particularly in the summer, nasal mucus can be seen floating on the surface of the water in these drinking troughs and at any time this may be from the nostril of a glandered animal. The stationary tap and bucket system affords much more safety. Since the discovery of mallein the authorities have had on their hands an almost infallible means whereby glanders can be detected. As a diagnostic agent its properties leave nothing to be desired. The committee which has just been appointed will inquire into the influence of this agent to check or cure the disease. Many experiments have been made in Great Britain and abroad to test this question, which was first raised by M. Nocard, but almost the whole of the evidence has gone to prove that as a curative agent mallein is of no value. It is true that many horses will refuse to react when tested again and again, but it is also well known now that glanders is by no means absolutely bound to run a rapid and fatal course in the horse, and cases of recovery without any treatment at all are not uncommon. In making equine post-mortem examinations in London the veterinary practitioner frequently finds old-standing lesions of glanders which have been spontaneously cured, a fact which has been confirmed by microscopical and other tests. Under strict veterinary inspection at regular intervals it would be quite possible to stamp out glanders completely in England. If when a case was reported in a stable the whole of the animals in that stable or stud were subjected to the mallein test and those that reacted were isolated from the healthy there is no reason why they should not do useful work again. It would be necessary to test them again and again and upon the slightest clinical manifestation to insist upon slaughter at once. Many would completely recover. On no account should the animals be sold or lost sight of. The immediate slaughter of all the reacting ones would, of course, settle the case at once and thus end all fear of contagion from them, but the question of compensation would here have to come in and the cost of such a scheme would necessarily be great. Possibly the new committee may be able to bring forward a scheme which will satisfy everybody. At any rate a most valuable report should result, for the names of those appointed upon the committee show that it will include observers who have had unique opportunities for testing their views.

PROTECTIVE INOCULATION AND SERUM-THERAPY.

IN another column we publish a paper read before the North London Medical Society by Dr. F. L. Bunch on the above subject. Although the paper contains nothing very new it forms an admirable *résumé* of our present knowledge on a difficult subject. The majority of practitioners have neither time nor opportunity to study elaborate records of research works and will welcome such a concise presentment of the *status quo* as is given in this paper. Immunity is a condition which has only comparatively recently been investigated. Several theories have been advanced to attempt to explain the forces acting within the body which tend to produce the required resistance to disease. Some of these forces are natural; others are acquired or artificially introduced into the organism. The chief of these theories Dr. Bunch explains and criticises. The methods employed in attenuating cultures are also described. The bitter disappointment to which tuberculin gave rise is commented on, and the attempt to bring about satisfactory protective inoculation in connexion with typhoid fever receives due attention. Here, like other pathologists, Dr. Bunch is forced to conclude that further statistics are necessary before any definite conclusions can be arrived at. To the practitioner the question of cure or arrest of an already developed infectious disease, will probably have the greatest interest. The investigations of Behring, Kitasato, and Sidney Martin in the serum-therapeutics of diphtheria are briefly described. Dr. Bunch lays stress on one point which has hitherto not received the attention it

merits—namely, that antitoxin serum has no reparative action. It cannot regenerate cells which have already undergone katabolic pathological changes, and, further, a certain amount of antitoxin can only neutralise a certain amount of toxin. It follows from this that it is necessary to commence the treatment at the earliest possible moment, when there is a minimum amount of toxin already in the circulation, and we agree with Dr. Bunch that, seeing how innocuous its employment is, a large dose of serum should be given at the earliest possible moment in every case of diphtheria. Some authorities, especially in the United States, recommend that all patients suffering from suspicious sore-throats should receive a full dose of the antitoxin. We do not go quite so far as this, but undoubtedly valuable time is often lost in suspicious cases waiting for a bacteriological diagnosis which may then be only a doubtful one, the toxin meanwhile increasing in the body and the prognosis in a similar ratio becoming more grave.

RINGWORM IN WORKHOUSE SCHOOLS.

THE Metropolitan Asylums Board has made a new departure in the arrangements for the treatment of cases of ringworm under the care of the metropolitan boards of guardians. The Asylums Board has opened at Witham, in Essex, a building which will accommodate 180 children suffering from ringworm. During their stay in the school the children will receive education just as if they were healthy children in an ordinary Poor-law school. The school was opened on Feb. 12th, and Dr. T. Colcott Fox has been appointed to make arrangements for the treatment of the cases. The results of the treatment of ringworm amongst children in workhouses are so unsatisfactory that this new plan deserves to be welcomed, especially as the Metropolitan Asylums Board has appointed a dermatologist to superintend the treatment who has done a great amount of original work on the fungi of ringworm. We understand that this school is merely temporary, but if it proves successful we have no doubt that it will be continued so long as it is needed. That the children under this arrangement do not have to miss their school training is an additional argument in favour of the judicious action of the Metropolitan Asylums Board.

A NEW TEST FOR MASTOIDITIS.

IN the *Journal of the American Medical Association* of Jan. 26th Dr. A. H. Andrews has described a new test for mastoiditis, which is performed by placing a vibrating tuning-fork over the antrum and listening to the sound over the tip of the mastoid with a small belled stethoscope. If the mastoid is filled with pus or granulations, or dense from obliteration of the air-cells, the sound is louder than on the opposite mastoid. Care must be taken not to stretch the skin between the stethoscope and the tuning-fork, for this increases the audibility of the sound. In 40 patients without mastoid symptoms Dr. Andrews has found no perceptible difference between the two sides; in four cases of mastoid disease the sound was louder on the affected side. The following case is an example. A woman, aged 40 years, had had suppurative disease of the left ear with occasional attacks of acute pain for 15 years. During three weeks she had suffered from a dull pain in the ear and mastoid region, which sometimes extended over the side of the head and as far forwards as the eye. The membrana tympani had almost disappeared and the ossicles could not be seen. A cholesteatomatous mass occupied the attic and the upper part of the middle ear. When portions of this mass were removed the surface beneath was found covered with normal granulations. The temperature varied between normal and 101°F. Deep pressure over the mastoid was painful. When the bell of the stethoscope was placed on the tip of the mastoid with the handle of the tuning-fork over the antrum the sound was much louder than on the right side: on the left side the fork was heard for 30 seconds, on the right for 16. The usual post-auricular incision was made and the mastoid cortex was found to be of ordinary density. The air-cells were small and filled with granulations. The cavity was cleared of diseased tissue, the posterior wall of the auditory canal and the outer wall of the attic were chiselled away, and the granulations and cholesteatoma were removed from the attic. The facial nerve was found exposed above the fenestra ovalis and sponging the cavity caused spasm of the left eyelid and side of the face. The fork which Dr. Andrews uses for this test is C 512, so constructed that it can be heard by the normal ear for about 35 seconds.

THE BACTERIOLOGY OF YELLOW FEVER.

THE Liverpool School of Tropical Medicine is to be congratulated on the encouragement which it has given to original research, the benefits accruing from which may be of incalculable value to mankind. The work performed by the Malaria Commission is well known, and we now publish an abstract of an interim report on yellow fever by the Yellow Fever Commission of the School. The report bears the names of Dr. Herbert E. Durham and the late Dr. Walter Myers. The completion of the report, of which this is an abstract, was unfortunately interrupted by the onset of attacks of yellow fever in both of the investigators and the lamentable death of Dr. Myers; it was therefore deemed advisable to submit for the time being for publication a shortened report only. Several micro-organisms have been credited with a causal relationship to yellow fever, but none of these has been generally recognised as satisfying all the requirements of a pathogenic organism. Dr. Durham and Dr. Myers describe a fine small bacillus which they found in all the fatal cases of yellow fever which they examined. They consider it probable that this same bacillus has been met with, but not recognised, by three other observers. They likewise consider that it is probable that recognition has not been previously accorded to this bacillus by reason of the reluctance with which it takes up stains and establishes growths in artificial media. These laboratory difficulties, however, were overcome by the two observers. Search was made for parasites of the nature of protozoa, but it was concluded that yellow fever is not due to this class of parasite. The report considers that the evidence in favour of the etiological importance of the fine small bacillus is stronger than any that has yet been adduced for any other "yellow fever germ." The abstract is too brief for us to form any decisive judgment upon the work, but we await the full report of the brave and able investigators with interest.

AS all our readers know, the metropolitan water companies propose to enforce new regulations with regard to water-fittings, and an inquiry has been instituted into the matter by the Local Government Board, who have appointed Mr. Perrin, their water examiner, Dr. Theodore Thomson, one of the medical inspectors, and Mr. E. A. Fawcett, to make a report on the matter. With one aspect of the new regulations we dealt last week. The present time, in our opinion, is not opportune for any alteration in the regulations of the metropolitan water companies. Efficient control over the companies is more strongly indicated than is control over the metropolitan water consumers by the companies. We feel sure that the representatives of the metropolitan boroughs will take this

view at the inquiry, but unfortunately the cost to the ratepayers for the payment of counsel must necessarily be considerable.

SIR WILLIAM MITCHELL BANKS will deliver the Second Hunterian Lecture of the Hunterian Society on Wednesday, Feb. 27th, 8.30 P.M., at the London Institution, Finsbury-circus, E.C. Subject, the Neglect of the Actual Cautery in Surgery and its Value in the Treatment of Pruritus Ani. All members of the medical profession are cordially invited.

SEVERAL important committees of the General Medical Council are summoned to meet next week. The Executive Committee will meet on Monday, Feb. 25th, at 1.30 P.M., and the Penal Cases Committee on the same day at 4 P.M. The Dental Committee will meet on Tuesday, Feb. 26th.

Miss Lillie Emma Vahine-é-tua Saville, L.S.A. Lond., M.D. Brux., of the London Mission, has received from the King the decoration of the Royal Red Cross in recognition of services at the International Hospital during the siege of the Legations at Pekin.

A CONFERENCE of representatives of the medical profession and of certain friendly societies has been held at the offices of the British Medical Association. The medical representatives maintained the view that wage-limits should be enforced.

THE lecturers and honorary staff of the Dental Hospital of London have generously contributed a special donation of £2000 towards the building of the new hospital in Leicester-square, which is now nearing completion.

SIR HUGH REEVE BEEVOR, Bart., M.D., F.R.C.P., L.S.A. Lond., has been re-elected the representative of the Society of Apothecaries of London on the General Medical Council for one year from Feb. 6th.

THE anniversary dinner of the Medical Society of London will be held at the Whitehall Rooms of the Hôtel Métropole on Friday, March 8th, at 7.30 P.M.

SIR JAMES REID, Bart., K.C.B., Physician to Her late Majesty the Queen, has been appointed a Knight Grand Cross of the Royal Victorian Order.

ABSTRACT OF AN INTERIM REPORT[1] ON YELLOW FEVER, BY THE YELLOW FEVER COMMISSION OF THE LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

BY HERBERT E. DURHAM, M.B., B.C. CANTAB., F.R.C.S. ENG.,

AND

THE LATE WALTER MYERS, B.SC. LOND., M.B., B.C. CANTAB., M.R.C.S. ENG., L.R.C.P. LOND.

1. SUFFICIENT search reveals the presence of a fine small bacillus in the organs of all fatal cases of yellow fever. We have found it in each of the 14 cadavers examined for the purpose. In diameter the bacillus somewhat recalls that of the influenza bacillus; seen in the tissues it is about 4 μ in length.

2. This bacillus has been found in kidney, in spleen, in mesenteric, portal, and axillary[2] lymphatic glands, &c., taken from yellow fever cadavers directly after death. In the contents of the lower intestine apparently the same bacillus is found often in extraordinary preponderance over other micro-organisms. Preparations of the pieces of "mucus," which are usually, if not always, present in yellow fever stools, at times may almost present the appearance of "pure culture."

3. Preparations of the organs usually fail to show the presence of any other bacteria, the absence of which is confirmed by the usual sterility of cultivation experiments.

4. It is probable that this same bacillus has been met with, but not recognised, by three other observers. Dr. Sternberg[3] has mentioned it; and he has also recorded the finding of similar organisms in material derived from Dr. Domingos Freire and Dr. Carmona y Valle, but he did not recognise its presence frequently, probably on account of the employment of insufficiently stringent staining technique.

5. It is probable that recognition has not been previously accorded to this bacillus by reason of the difficulty with which it takes up stains (especially methylene blue) and by reason of the difficulty of establishing growths on artificial media.

6. The most successful staining reagent is carbolic fuchsin solution (Ziehl) diluted with 5 per cent. phenol solution (to prevent accidental contamination during the long staining period), immersion for several hours, followed by differentiation in weak acetic acid. Two hours' staining period may fail to reveal bacilli which appear after from 12 to 18 hours. The bacilli in the stools are often of greater length than are those in the tissues and they may stain rather more easily; naturally the same is true of cultures.

7. Since the bacilli are small and comparatively few in numbers they are difficult to find. To facilitate matters at our last two necropsies (the fourteenth and fifteenth) a method of sedimentation has been adopted. A considerable quantity of organ juice is emulsified with antiseptic solutions, minute precautions against contamination and for control being taken; the emulsion is shaken from time to time and allowed to settle. The method is successful and may form a steady means of preserving bacteria containing material for future study. The best fluid for the purpose has yet to be worked out; hitherto normal saline with about $\frac{1}{2}$ per cent. sublimate has been employed.

8. Pure growths of these bacilli are not obtained in ordinary aerobic and anaerobic culture tubes.

9. Some pure cultures have been obtained by placing whole mesenteric glands (cut out by means of the thermo-cautery) into broth under strict hydrogen atmosphere. Investigations into the necessary constitution of culture media for successful cultivation is in progress.

10. Much search was made for parasites of the nature of protozoa. We conclude that yellow fever is not due to this class of parasite. Our examinations were made on very fresh organ juice blood, &c., taken at various stages of the disease, with and without centrifugalisation[4] and on specimens fixed and stained in appropriate ways. We may add that we have sometimes examined the organs in a fresh state under the microscope within half an hour after death.

11. The endeavour to prove a man-to-man transference of yellow fever by means of a particular kind of gnat by the recent American Commission is hardly intelligible for bacillary disease. Moreover, it does not seem to be borne out by their experiments, nor does it appear to satisfy certain endemiological conditions. It is proposed to deal more fully with the endemiology and epidemiology of the disease on a later occasion.

12. We think that the evidence in favour of the etiological importance of the fine small bacillus is stronger than any that has yet been adduced for any other pretended "yellow fever germ." At the same time there is a much further work to be done ere its final establishment can be claimed. The acquisition of a new intestinal bacterium would explain the immunity of the "acclimatised."

Para, Brazil.

[1] The completion of the interim report of which this is an abstract was interrupted by the onset of attacks of yellow fever in both of us. The loss of my much lamented colleague renders it advisable to submit this shortened report only, for the time being.

[2] We find these constantly enlarged and much injected, though whether this is specific we are not able to say.

[3] Report on Etiology and Prevention of Yellow Fever, 1890.

[4] We have found this sometimes useful in examining the blood of ague patients.

THE ROYAL COMMISSION ON SOUTH AFRICAN HOSPITALS.

I.

WE have already in our issue of Feb. 2nd, p. 349, given a brief *résumé* of the report of the Commissioners and we now proceed to consider the report in detail. Passing over Part I. of the Report, which contains a brief account of the proceedings by which the Commissioners were enabled to discharge their duties, together with some observations upon the evidence and the work done, we come to Part II., which deals with particulars of complaints made as to the treatment of the sick and wounded and certain conclusions arrived at by the Commissioners of a general character. Firstly comes the question of

THE INSUFFICIENCY OF THE ROYAL ARMY MEDICAL CORPS.

The Commissioners say:—

The military and medical authorities certainly never anticipated when this war became probable that it would be of the magnitude it has since attained. The Royal Army Medical Corps was wholly insufficient in staff and equipment for such a war, and it was not so constituted as to have means provided by which its staff could be very materially enlarged, or its deficiencies promptly made good. These deficiencies were felt throughout the South African campaign, as will more clearly appear when we deal in detail (in Part III.) with the complaints which have been made in respect of the care of the sick and wounded.

The deficiency in the staff of the Royal Army Medical Corps before this war was not the fault of the Director-General and the staff of officers associated with him. They had for a considerable time before the outbreak urged upon the military authorities the necessity for an increase of the corps, but for the most part without avail.

The Commissioners proceed to give an account of "unit allowances," or the ordinary provisions for the care of the sick and wounded of an army on active service at the front:—

One medical officer is allotted to each regiment and to each brigade of artillery. He accompanies his regiment and carries with him on service his medicines and medical and surgical appliances. These regimental medical officers are not now, as was once the case, attached in times of peace to particular regiments; the result being that when war commences the medical officers are not personally acquainted with the men of the regiments to which they are attached. The question whether this ought to be remedied to any extent, and if so in what manner, should, we think, be made one of the subjects of inquiry when this war is ended.

In mentioning field hospitals they say that numerous complaints arose from the fact that under certain circumstances field hospitals had to be largely used as fixed hospitals. The ambulance wagons supplied to the bearer companies are, in the opinion of the Commissioners, heavy, jolty, and uncomfortable. The type in use, they think, could be and should be improved.

STATIONARY AND GENERAL HOSPITALS.

With regard to these hospitals the Commissioners point out that the type of marquee in use should be improved. This, they say, is a matter for military experts. The Commissioners also note that as fixed hospitals are not generally furnished with their own transport delay often occurs in removing patients from railway or other stations to the hospital. They consider that the use of bearer ambulances should be largely extended.

NURSES.

As to nurses, by which term is meant female nurses, the Commissioners consider that their use should be largely extended and that they certainly ought to be employed for enteric and other fever patients. The objection taken to the employment of local nurses was not well founded.

DEFICIENCY IN THE STAFF AND EQUIPMENT OF THE ROYAL ARMY MEDICAL CORPS.

With regard to this most important point the Commissioners say,

At the outbreak of the war there were only available staff and equipment for two army corps. An army corps is (approximately) composed of three infantry divisions of 10,000 men each, and 6000 corps troops (cavalry, artillery, engineers, &c.). Even the two army corps which were first employed in the war could only be staffed and equipped with difficulty, as it appears from the evidence of Major Bedford that for the 6th Division the reservists had to be used, and a mixed *personnel* employed. It further appears from the evidence before us that, after providing for the first two army corps, there was existing only a reserve of equipment sufficient to furnish one general hospital and two stationary hospitals. The explanation given for so small a reserve of equipment being kept is, that improvements were being so often made in various articles that it was undesirable to keep a large stock of what might ultimately prove to be out of date and useless. Although this explanation has some force in it, it does not appear wholly satisfactory. With regard to staff, the evidence given by Surgeon-General Jameson, the Director-General of the Army Medical Service, shows that the strength of the Royal Army Medical Corps both in officers and men was completely exhausted in providing the medical attendants for the first two army corps in South Africa, and the general and stationary hospitals which were required in connexion with those two corps. During the year 1900, and especially during the first four months, further troops were rapidly poured into South Africa, and it consequently became necessary for the Director-General at home and the Surgeon-General at the Cape to make provision for the medical service for these troops. The colonial troops, the militia, and the volunteers brought with them only their regimental medical officers, and the whole burden of supplying them with field and base hospitals fell upon the Imperial Government. The only exceptions being, that the Imperial Yeomanry were to a certain extent separately provided with a base hospital, which was stationed at Deelfontein, and subsequently with a branch hospital, which was stationed at Pretoria; and that the New South Wales contingent brought with it the half of an ambulance company which was subsequently, at Surgeon-General Wilson's request, doubled.

The Commissioners then describe how the deficiencies were met.

Having regard to the deficiencies and circumstances above mentioned the difficulties of supplying the army in South Africa with sufficient medical aid became very great, increased as those difficulties were by the enormous range over which the military operations were carried on, and the great length of the lines of communication. As the war progressed and losses occurred in the medical staff, much difficulty was experienced in providing an adequate staff of doctors and orderlies in South Africa. To a great extent this was met by the employment of civil surgeons and untrained orderlies. But the pressure was so great that a special reduction had also to be made in the unit allowances of the field hospitals at the seat of war. The original divisions which came from Great Britain arrived with the proper allowance of these hospitals. But the 9th and 11th divisions were formed in South Africa, and though it was found possible to supply locally these divisions with bearer companies, it was not found possible to supply them with field hospitals. The field hospitals were only supplied by taking away from each of the other divisions its divisional field hospital, and also (though this is not quite so clear on the evidence) the extra field hospital which, as previously stated, is by allowance allotted to each army corps. In other ways the army corps unit allowance of field hospitals was reduced from nine or 10 to six. Major Bedford states that owing to this the field hospitals in South Africa were 10 short of the proper number. This shortage was never made up, and undoubtedly caused a strain throughout the whole of the campaign. While willing to make every allowance for the many difficulties which the medical authorities in South Africa had to contend with in supplying the locally-constituted divisions with field hospitals, it seems strange that when it became evident that it would be necessary to abstract field hospitals from units already organised a demand was not made by the Surgeon-General in South Africa upon the War Office to fill up the blanks that were thus left. There is no evidence to show that this was done. At the same time we have to acknowledge that a field hospital to be efficiently worked must be staffed by a sufficient proportion of trained officers and trained orderlies of the Royal Army Medical Corps. It is only some posts in these hospitals which can be satisfactorily filled by civil surgeons, and at the time we are now dealing with it was very doubtful if a sufficient number of officers was available for the purpose of giving to the *personnel* of the 10 field hospitals required the necessary proportion of Royal Army Medical Corps men. Certainly it does not appear to have been practicable to obtain in sufficient quantities a supply of trained orderlies.

The great need of staff of the Royal Army Medical Corps is exemplified by the fact that when No. 5 General Hospital arrived in South Africa on Jan. 20th, 1900, its *personnel* had to be severed from its equipment and used for the hospitals at the front; its equipment was temporarily stored at Woodstock and was subsequently used for other hospitals. Fortunately, the supply of civil surgeons in the United Kingdom willing to help in the campaign was abundant and, as a rule, of excellent quality, but of necessity some time elapsed before these civil surgeons could be obtained and forwarded to the seat of war. Surgeon-General Wilson in South Africa also enlisted there the services of local practitioners, but the supply of these was very limited. In forming fresh hospitals and utilising these surgeons it was found essential to have a certain number of doctors of the Royal Army Medical Corps in each hospital and an army doctor at the head. The reason for this could not be better stated than in the words of Mr. Bowlby, senior surgeon in charge of the Portland Hospital:—"It is, however, a great mistake to suppose that civilian surgeons, however skilful, can satisfactorily supplant the army surgeons beyond certain limits, and it is certainly my opinion that this limit has been passed a long time ago. Some of the more recently formed general hospitals have had only three or four Royal Army Medical Corps officers for the organisation of the whole 500 beds, or, as at Bloemfontein, 1500 or more; and, as a result, matters have not worked as well as they might. It must be remembered that a young surgeon with civilian training, however brilliant, cannot know anything about such matters as camp sanitation, the duties of ward-masters or stewards, disinfection of clothes and stools, pitching of camps, inspection of food, what orderlies know and can do, and what orderlies do not know and cannot do, and a hundred other things which every physician and surgeon would think of. I am quite certain that the working of these hospitals was made still more difficult by the deficiency in numbers of officers of the Royal Army Medical Corps, and it is my opinion that in all departments of the Royal Army Medical Corps there has been very great personal strain because the work has had to be done with a staff insufficient in numbers."

The difficulty of supplying orderlies accustomed to or fit for hospital work was much greater than the difficulty of finding civil surgeons, and in fact was never overcome. Surgeon-General Wilson in his evidence put the position tersely, though perhaps too strongly, when he said that he was obliged to take all who offered themselves. A good

orderly must be trained, and the training takes some time and clearly ought not to be obtained at the expense of patients in a crowded hospital. Some orderlies were obtained from the St. John's Ambulance Association. These men, though as a body they worked well, were to a great extent untrained and quite unused to hospital work, and some of them appear to have been rough and unfitted for the purpose of tending sick men. Ordinary regimental privates were also largely employed. Some of these privates were soldiers who, though not fit for duty at the front, were able to be about and look after others, and others were convalescents, sufficiently recovered from their illnesses to be able to do nursing duties in the hospitals. There is much difference of opinion in the evidence before us as to whether convalescents should be employed at all for hospital purposes. We see no objection in times of great pressure, when trained orderlies cannot be obtained, in convalescents being employed to assist in hospital work, provided that the convalescents be carefully selected and are found to be in a state of health which renders them able to assist in the work without injury to themselves. But, undoubtedly, they should be used sparingly and only as assistants where there are trained orderlies sufficient and able to properly supervise them. Surgeon-General Wilson, in a circular addressed to the medical officers of the hospitals in South Africa, pointed out the advisability of their employing, when necessary, as assistant orderlies, men who were fit for garrison duty rather than convalescents from fever or other serious disease. But convalescents have been employed in this war at times of pressure. We find cases where it is suggested that men employed as orderlies were not perfectly convalescent or fit to act. It is difficult to say how far this suggestion is well founded. Possibly there may have been cases of the kind, but we have no sufficient reason for thinking that they were at all numerous.

The general work done by the authorities in providing a supply of doctors and orderlies as the war went on appears from the following figures which may be taken to be approximately accurate, though owing to the colonial levies and the temporary employment of local medical men, precise figures are not available.

In the early part of October, 1899, there were in South Africa about 20,000 British troops. By the end of October a further 14,000 men had arrived. During the following six months to April, 1900, reinforcements were poured into the country at the average rate of about 30,000 men a month. During May, June, and July, the reinforcements amounted to about 11,000 men a month. The total number of troops landed between September, 1899, and July, 1900, did not fall short of the aggregate of 230,000 men. At the beginning of September there were in the country about 30 medical officers and 270 hospital subordinates. During September and October, 1899, about 50 medical officers, 1000 hospital subordinates, and 12 nurses arrived, and during the following six months about 600 medical officers (including civil surgeons), 5000 hospital subordinates, and 275 nurses were landed. In all there were landed in South Africa during the period from September to July about 900 medical officers (including civil surgeons), 400 nurses, and 6000 non-commissioned officers and men of the Royal Army Medical Corps and St. John's Ambulance Brigade. At the time of the greatest pressure, which occurred at the end of the month of March, the total force then engaged being about 207,000 men, there were about 800 medical officers (including civil surgeons), 6000 hospital subordinates, and 800 nurses in the country. In July there were remaining available for duty about 224,000 men in the army and the medical staff consisted of about 1000 medical officers (including civil surgeons), 7000 hospital subordinates, and 900 nurses. It must be remembered that although these figures fairly represent the amount of medical aid available in the country generally it does not follow that it was distributed in proportion to the needs of particular localities. The movements of troops were often rapid and unexpected. Transport was generally difficult and had in many cases to be utilised more with a view of supplying the necessities of the fighting line than for the purpose of rendering medical aid, which was therefore often lacking to a more or less extent. These difficulties were very conspicuous at Bloemfontein during the months of April and May, but existed to a less extent at other places and on other occasions.

With regard to the nurses, there was no difficulty found in obtaining a sufficient number of suitable persons, nearly all of whom were properly trained.

With reference to the dispatch of general and stationary hospitals and their equipment of medical and surgical stores, necessaries, and hospital comforts, we consider that from the time the true position of affairs was realised the home authorities did all that was practically possible in procuring and forwarding them to South Africa.

Details as to the hospitals sent out from this country to South Africa and the dates of their arrival there appear in the Appendix (*vide* Appendix—*Bedford* 2), which also contains a statement showing at various dates between the 2nd October, 1899, and the 16th July, 1900, the strength of the Army in South Africa and the corresponding strength at those times of the medical *personnel* (*vide* Appendix—*Jameson* 4).

Speaking generally, we may say that all requisitions from South Africa concerning the care of the sick and wounded there were promptly met by the home authorities, and that no delay occurred here in meeting those requisitions, excepting in forwarding a few things, such for example as ambulance wagons and marquees and some special articles not usually kept in store, and which could not be purchased or obtained quickly.

The efforts of the home authorities were ably supported by the authorities at the base in South Africa, who worked well in procuring local supplies and in forwarding what was required to the front. In these ways there were soon established in South Africa ample supplies of all necessaries and medical comforts, but owing to the difficulties of transport and the large extent of country to which they had to be supplied, it was often found impossible, especially in the case of the advance of the army of Lord Roberts to Bloemfontein and Pretoria, to get necessaries or comforts which existed in sufficient quantities in South Africa, to the exact spot where, or at the exact time when, they were urgently needed. And, accordingly, at certain places and times, there was a want of certain articles required for the sick and wounded. These will be found more particularly dealt with by us in Part III. The only general remark that we need make here is, that throughout the campaign (until quite recently) there was a deficiency of bed-pans and commodes, the lack of which often caused considerable discomfort and even suffering on the part of patients. The great necessity for such articles, especially in a country like South Africa where dysentery and enteric fever are rife, appears not to have been adequately recognised by the medical authorities and was certainly not sufficiently provided for.

Various complaints, often of a sweeping character, have been made on various grounds against the Royal Army Medical Corps in this war. Like every large body of men, the Royal Army Medical Corps has its unfit or bad members, but the evidence justifies us in saying that in this war the proportion of such members to the whole body of the Royal Army Medical Corps is very small. Speaking of the officers as a whole, their conduct and capacity deserve great praise. Their devotion to their duties both at the front and in the fixed hospitals, and the unselfish way in which they have attended to the sick and wounded, often at the risk of life, have been recognised by all impartial witnesses. The number of those who have died during this war in discharge of their duty is unfortunately large.

There were, of course, a few exceptions to the general efficiency, and cases of roughness and inattention to the wants of patients on the part of a few officers will be found referred to when we deal in detail with complaints in Part III. Such few cases naturally led to mischievous results and gave rise to much complaint, and patients who thereby suffered, or persons who saw the suffering, were sometimes apt (perhaps not unnaturally) to judge the Royal Army Medical Corps as a body by those cases, and to make general charges against it.

* * * * * * *

But in connexion with the subject of the general efficiency of officers of the Royal Army Medical Corps we must refer to a fact which ought not to be ignored, either in the interests of the Royal Army Medical Corps itself or of the army generally, and that is the existence on the part of many military officers of a feeling of distrust of the skill and professional experience of doctors of the Royal Army Medical Corps as compared with civil doctors. To a great extent we believe this mistrust to be ill-founded. That it is not wholly unfounded is to be explained by the difficulties under which the officers of the Royal Army Medical Corps have hitherto laboured.

COMPLAINTS CONCERNING OFFICERS OF THE ROYAL ARMY MEDICAL CORPS.

As regards this question the Report states:

The Royal Army Medical Corps has been undermanned even in times of peace, and its staff much overworked. In consequence the majority of the officers have had no sufficient holidays or leave of absence, and no proper opportunities of studying or of keeping abreast with recent advances in the practice of medicine and surgery. The authorities have experienced, probably to some extent in consequence of the above facts, a difficulty in obtaining men of good professional standing to join the Royal Army Medical Corps, and the insufficiency of officers has occasionally led in the present war to men of the Royal Army Medical Corps being employed who were not properly fit for the due discharge of the duties cast upon them. Some few officers who had retired, or practically retired, and who were not fitted for active work, have been employed. Some of these, being senior men, were put in charge of important hospitals; for in the Royal Army Medical Corps the practice of appointing men to the more important posts according to mere seniority appears to be too rigidly adhered to. The result of such appointments has been that the hospitals to which they were appointed as chiefs have not been properly organised or superintended, and the hospitals have suffered in consequence. It should be clearly understood that these exceptional instances were but two or three in number.

We think that steps should be taken immediately after this war is ended, or at some other suitable time, whereby (1) the staff of the Royal Army Medical Corps may be permanently enlarged, and due provision may be made for its further necessary and speedy enlargement in times of great wars; (2) inducements may be offered to ensure a continuous supply to the corps of sufficient men of good professional attainment; and (3) the men who have joined may be kept as a body thoroughly acquainted with the general progress made in professional subjects and at a high professional standard of efficiency.

The means by which the above results can be best attained require careful expert investigation and consideration and cannot be adequately dealt with by us. They should form the principal subject for consideration on the part of the departmental or other committee whose constitution is recommended by us at the end of this report.

As regards the complaints that the officers of the Royal Army Medical Corps are too military in their habits and conduct the Commissioners observe that it must be remembered that all their patients are soldiers, but they go on to say:—

We think that occasionally the military tone of the hospitals has been hard on the ordinary private soldier who is really ill and might well expect when in hospital to be treated very much as a patient would in an ordinary civil hospital. And no doubt the fact that, even while in hospital, he has to regard his doctor as his superior officer has tended to increase his dislike of making complaints even when they might be well founded. We think that this should be remedied, as could easily be done if the views we are expressing were brought to the attention of the officers of the Royal Army Medical Corps and were duly appreciated by them, as no doubt they would be.

As certain attacks have been made against the principal medical officer and head medical staff in South Africa for want of organising powers, and generally for the way in which the campaign in South Africa has been managed from a medical point of view, we must state our views upon this matter.

* * * * * * *

In South Africa the territory occupied by the troops is vast. In this territory numerous armies or bodies of men have been continuously and rapidly changing their positions. Often the army movements have been extremely sudden and no notice of them could be given beforehand to the medical staff. The medical arrangements for all these armies and troops had to be considered and provided for. In addition the medical staff had to consider and provide for the placing and shifting of the various hospitals on the lines of communication and the establishment of the hospitals at the base and the supply and care and transport of all the numerous requisites for sick and wounded men throughout the country occupied by our soldiers.

Of course, judging from events, we know that mistakes have been

made by the staff in the course of this war and that things have not been foreseen which might have been. We have pointed out in dealing with complaints in Part III. instances of such mistakes and oversights. But taking their work as a whole and considering the difficulties they have had to contend with we think that the principal medical officer and his head staff have done excellent work. They have never spared themselves and have shown a great devotion to their duty and every desire to make due provision for the care of the sick and wounded, and when their conduct is fairly judged we think that they deserve great praise. The organisation of the field and stationary and base hospitals for the colonial troops, the militia, and volunteers fell upon the medical staff in South Africa, and in our judgment they met the difficulties presented to them with singular ability and success.

CIVIL SURGEONS: COMPLAINTS AGAINST ORDERLIES.

The Commissioners find that the work of the civil surgeons was, as a whole, well done, and as for the orderlies the way in which these men as a body discharged their duties has deservedly been the subject of high praise from many witnesses of experience. Some of the untrained orderlies who had to be hastily obtained to supply deficiencies were inattentive, rough, and occasionally brutal to patients. But these men were not the trained orderlies of the Royal Army Medical Corps. The report proceeds:—

There are two other matters of importance to be mentioned. We refer to the existence in places amongst the orderlies of the crime of stealing the stimulants and comforts—and even the money and other property—of patients, and also of the practice of taking bribes from the patients for the supply of comforts or for rendering the assistance due to them. There have been too many complaints on these heads brought to our notice for us to consider the cases in which the ill-practices in question have occurred as so exceptional as not to demand serious consideration, though we have no sufficient reason to justify us in concluding that they prevailed to any very large extent. The medical officers do not appear to have been sufficiently aware of their existence. This is to be regretted, for otherwise steps no doubt would have been taken to remedy the evils in question. We think it advisable that the attention of the medical officers of the various hospitals should be specially and speedily called to these matters, with a view to their instituting searching inquiry and stamping out the ill-practices so far as they exist in their hospitals.

PRIVATE HOSPITALS AND CHARITABLE SOCIETIES.

The various private hospitals did excellent work, as well as the Red Cross Society and sundry charitable persons.

But there must have been some waste owing to the overlapping of the various charities and charitable gifts, and to the difficulty of properly distributing the same amongst those who needed them. In future wars it would be advisable, if possible, that some provision should be made by which all charitable gifts should be received and dealt with by one organised body.

RAILWAY TRANSPORT.

Considering that the railways were, as a rule, only single line, of a small gauge, and had only a small rolling-stock, the difficulties of transport were overcome in a most creditable manner.

ADMINISTRATIVE DUTIES OF THE ROYAL ARMY MEDICAL CORPS AND "RED TAPE."

The Commissioners do not think that the administrative duties of the Royal Army Medical Corps could be lightened by the employment of civil administrators, and with regard to "Red Tape" the Commissioners state:—

We believe, shortly speaking, that what is meant from a practical point of view by the use of the term as applied to the Royal Army Medical Corps is: (1) that there are numerous unnecessary returns and records to be filled up and kept by the principal medical officer; and (2) that difficulties and delays ensue from the necessity cast upon the officers of hospitals by the military regulations in respect of the requisitioning of necessaries.

With regard to the first point, no doubt the returns and other documents are numerous. To a certain extent they cannot be avoided. For instance, records of admissions to the hospital, and discharges from it, and also of complaints of the patients, must be kept.

So long as the medical officers are expected and required to answer promptly all inquiries concerning wounded or sick soldiers, the necessity for several full returns and records being kept must be admitted. We do not ourselves feel justified in attempting to point out what returns or records could in time of war be dispensed with; except that in the case of general hospitals we cannot see the necessity for three records being kept, as is ordinarily the case—namely, one by the principal medical officer of the surgical division, one by the principal medical officer of the medical division, and the third by the chief principal medical officer of the hospital. It is possible, however, that the documents might properly be shortened in several respects, and the question as to how this could be effected might also usefully form one of the subjects to be inquired into by the Committee we have already mentioned. We should, perhaps, add that in this campaign civil surgeons were, as a rule, only required to fill up the diet sheets, which, in our opinion, of necessity should be kept by them. As to a complaint that has been made against the classification of diseases in the returns we cannot think that this is well founded. The classification in question is that of the Royal College of Physicians, the Royal College of Surgeons, and is that adopted by the Registrar-General of Mortality in England.

With regard to the second point, it is true that the medical officers have to get supplies for their hospitals, including medical comforts, from the Army Service Corps, and such things as beds, mattresses, &c., from the Ordnance officers. This no doubt does on some occasions cause delay. Whether this can to any and what extent be avoided with practical advantage by permitting the Royal Army Medical Corps to have sole possession of and control over all hospital necessaries (other than ordinary food and ordinary clothing), including such things as beds, mattresses, and hospital clothing, is a question which should be considered by the Committee which we have already mentioned.

Except in respect of special drugs or medical comforts not ordinarily used, and in cases of urgency, the hospital should and in ordinary cases would be properly provided with all requisites, and the medical officers in charge as they fell short of any requisite would requisition for a supply in time, and we believe that apart from special cases those requisitions would be complied with without any unreasonable delay. But in cases of special medicines or instruments, or in cases of urgency, undoubtedly there might be delay, and the difficulty could only be met by giving the medical officers in command of the hospitals full powsr to order and buy on their own responsibility at the expense of the State. Naturally, such a power is one liable to be abused, and ought to be exercised with great care, but there certainly should be such a power given to the officers, and it should be freely used without liability on their part to censure, except in case of abuse.

As a matter of fact, in this war such a power has been exercised to a large extent by many of the medical officers. There is a General Regulation of the Royal Army Medical Corps which points in this direction, but it is limited in scope and not quite explicit enough. Some of the medical officers in South Africa apparently did not know that they had this power, and accordingly did not exercise it.

In Natal Colonel Gallwey expressly issued a circular which dealt with the buying by officers in cases of necessity, and that notice was very efficacious and was promptly acted upon by the medical officers there. In others parts of South Africa an express circular of the kind was not issued, and it would have been better if it had been. Surgeon-General Wilson did send a circular pointing out generally that medical officers in cases of emergency should take the initiative in procuring what was necessary, and stated that he would support them in their acts, but he did not specially refer to the question of buying. It appears from his evidence, however, that he did speak to the principal medical officers on the subject, and told them to exercise the power of buying freely.

TRANSPORT OF THE ROYAL ARMY MEDICAL CORPS.

With regard to the suggestion of the Royal Army Medical Corps having its own transport, the Commissioners consider that there are difficulties in the way of this suggestion being carried out. But they think that general and stationary hospitals should have their own transport which should not be taken away from them.

SANITATION.

In an ordinary hospital the Commissioners consider that the principal medical officer should look after its sanitation.

But when there is a question of the sanitation of a town, or of a large camp, where hospitals exist, we think it is advisable that there should be a special sanitary officer who should be charged with the various larger duties appertaining to sanitation, such as the location of proper camping grounds for the various regiments, fixing sites for hospitals, providing suitable sites for hospitals for sick horses, making arrangements for the removal of refuse and the discharge of the latrines of the hospitals, and so forth. Occasionally in this war special sanitary officers have been appointed in large centres, as, for example in Bloemfontein and in Pretoria, cases which are specially referred to in Part III. But difficulty has been experienced in finding suitable men for such posts. We think that it is preferable that the men to be appointed should be officers of the Royal Army Medical Corps, and that it is advisable, in order that duly qualified special sanitary officers should be forthcoming in future wars when required, that, as part of the organisation and working of the Royal Army Medical Corps, certain members of that body should be specially selected to undertake sanitary duties.

(To be continued.)

THE WAR IN SOUTH AFRICA.

SOUTH AFRICA has been the graveyard of many reputations and the war has given rise to no end of contentious criticism. The public can now read the South African despatches covering the whole period and giving in effect a historical and, in a sense, official outline of the events of the campaign. The study of them is of general interest and does not concern military readers only. They serve to clear up many points which unquestionably needed explanation and to set forth the nature and difficulties of an expedition which has so severely strained and tested, not only the medical, but every branch of the service. The medical service had, of course, in common with the rest of the army, to take its full share of those difficulties which were brought about by the exceptional nature of the campaign and the untoward occurrences which arose in the course of it. How far, however, these could and should have been foreseen or guarded against and provided for by timely and adequate hospital arrangements is a question which is bound to be threshed out in Parliament during the present session.

Cases of plague still continue to make their appearance at Cape Town, but the disease has not happily shown any signs of rapid extension. The cases have been few

so far and the disease is stated to be of a much less severe type than that which prevailed in Bombay, but the local authorities fear that some cases are being concealed. Be this as it may, the outbreak is very embarrassing in that it seriously interferes with the employment of native labourers and with the work at the Cape Town docks, in addition to causing a certain amount of anxiety inseparable from the mere fact of its presence.

The war news from South Africa is, on the whole, satisfactory. There is great activity on the part of the British in pursuit of the Boer forces. The sweeping method adopted by Lord Kitchener's policy is being systematically pursued. The object is apparently, as we have said, to drive the Boers into certain positions and localities where, deprived of cattle, horses, forage, ammunition, and supplies generally, they will have to fight in order to live, instead of, as has been hitherto the case, living in order to fight. It appears at the moment of writing that both Botha's and De Wet's forces are in tighter situations than they have hitherto been. Those of the British and colonial troops who have been for a long time in the field are all more or less fatigued and getting what is termed stale. We may feel confident of their determination, however, to spare no effort to bring the war to an end. All this desultory fighting in various directions on a small scale adds to the number of wounded who are admitted to the surgical side of hospitals, but it is on the medical side and chiefly from enteric fever and other forms of disease that the sick lists are maintained.

"RETURN" CASES OF SCARLET FEVER AND DIPHTHERIA.

IN February, 1900, the Metropolitan Asylums Board asked the Royal College of Physicians of London for an expression of opinion as to certain cases of scarlet fever and diphtheria which had been discharged from the Board's hospitals as recovered but had nevertheless been alleged to prove sources of infection on returning home.[1] The reply of the College was considered by the Board at its meeting held on Feb. 2nd; it contained the three following recommendations, which the medical superintendents of the Board's hospitals have been authorised to carry into effect:—

1. That in each hospital a couple of wards identical in respect to cubic space per bed, &c., should be set aside and administered on a different principle, the sex of the children being the same, and the age as far as possible; that in one ward the cases subject to mucous discharges from nose or ear be rigorously excluded; that immediately on the appearance of any such discharge the patient should be removed, and that all nozzles of syringes should be kept in antiseptic solutions. In the other ward no special attention should be paid to these discharges other than that hitherto adopted. The incidence of either rhinorrhœa or otorrhœa should be compared. Cases of "septic scarlet fever" should be excluded from both.

2. That, if possible, in certain hospitals, with the approval of the medical superintendent, two or more rooms previously disinfected be reserved for the isolation after six or eight weeks' detention of single patients who are suffering from rhinorrhœa or otorrhœa, but whose desquamation is completed. Each patient so secluded should be kept for 10 days or a fortnight before returning home. During this period of detention the affected parts should be regularly irrigated or syringed with some reliable antiseptic, and great care should be taken that the nozzle of the apparatus be kept in a germicidal solution. On the expiration of the quarantine the patient should be sent home whether the discharge has ceased or not, and the room should be disinfected prior to the reception of another patient. The subsequent history of the case should be investigated.

3. That the inquiry into the facts connected with the incidence of the return cases at the managers' hospitals should be continued for a period of 12 months, and that the scope of the inquiry should include the history of the cases discharged under the conditions mentioned.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6853 births and 4408 deaths were registered during the week ending Feb. 16th. The annual rate of mortality in these towns, which had been 16·4 and 19·8 per 1000 in the two preceding weeks, declined again last week to 19·5. In London the death-rate was 19·3 per 1000, while it averaged 19·6 in the 32 provincial towns. The lowest death-rates in these towns were 11·7 in Burnley, 13·3 in Bradford and in Huddersfield, 13·9 in Cardiff, and 14·3 in Preston; the highest rates were 22·7 in Birkenhead, 22·8 in Birmingham, 25·1 in Plymouth, 27·3 in Norwich, and 28·8 in Liverpool. The 4408 deaths in these towns included 348 which were referred to the principal zymotic diseases, against 323 and 397 in the two preceding weeks; of these 105 resulted from whooping-cough, 78 from measles, 71 from diphtheria, 35 from diarrhœal diseases, 32 from "fever" (principally enteric), and 27 from scarlet fever. No death from any of these diseases occurred in Huddersfield; in the other towns they caused the lowest death-rates in Croydon, Norwich, Bradford, and Newcastle, and the highest rates in Bristol, Birkenhead, Liverpool, Manchester, and Salford. The greatest proportional mortality from measles occurred in Liverpool and Bolton; and from whooping-cough in Plymouth, Bristol, Birkenhead, and Salford. The mortality from scarlet fever and that from "fever" showed no marked excess in any of the large towns. The 71 deaths from diphtheria included 20 in London, six in Salford, five in Manchester, five in Leicester, and four in Leeds. No fatal case of small-pox was registered last week in any of the 33 towns, and only one small-pox patient remained under treatment on Saturday last, Feb. 16th, in the Metropolitan Asylums hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1876, against numbers declining from 2535 to 1963 on the seven preceding Saturdays; 142 new cases were admitted during the week, against 172, 178, and 145 in the three preceding weeks. Influenza was certified as the primary cause of 16 deaths in London last week. The deaths referred to diseases of the respiratory organs in London, which had been 323 and 397 in the two preceding weeks, further rose last week to 420, but were 68 below the corrected average. The causes of 62, or 1·4 per cent., of the deaths in the 33 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Cardiff, Salford, Bradford, Leeds, and in nine other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Blackburn, Sheffield, Gateshead, and Newcastle.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 21·1, 22·2, and 23·2 per 1000 in the three preceding weeks, declined again to 22·6 during the week ending Feb. 16th, but showed an excess of 3·1 per 1000 over the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 18·0 in Aberdeen and 19·7 in Dundee to 25·2 in Glasgow and 26·9 in Perth. The 710 deaths in these towns included 33 from whooping-cough, 25 from measles, 20 from small-pox, 10 from diphtheria, 8 from diarrhœa, six from scarlet fever, and four from "fever." In all, 106 deaths resulted from these principal zymotic diseases, against 126 and 103 in the two preceding weeks. These 106 deaths were equal to an annual rate of 3·4 per 1000, which was 1·9 per 1000 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 43 and 37 in the two preceding weeks, further declined last week to 33, of which 25 occurred in Glasgow, six in Dundee, and two in Paisley. The deaths from measles, which had declined from 23 to 14 in the four preceding weeks, rose again to 25 last week, and included 15 in Edinburgh and seven in Aberdeen. The fatal cases of small-pox, which had been 11, 24, and 11 in the three preceding weeks, rose again last week to 20, and were all registered in Glasgow. The deaths from diphtheria, which had been seven in each of the two preceding weeks, increased to 10 last week, and included six in Glasgow. The fatal cases of diarrhœa, which had been 27 and 18 in the two preceding weeks, further declined last week to eight, of which six occurred in Glasgow. The six deaths from scarlet fever corresponded with the number in the preceding week, and included four in Glasgow, where three of the four deaths from "fever," were also registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 123 and 148 in the two preceding weeks, declined again last week to 153, and were 172 below the number in the corresponding period of last year. The causes of 29, or more than 4 per

[1] THE LANCET, April 21st, 1900, p. 1162.

cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 27·4 and 34.0 per 1000 in the two preceding weeks, further rose to 34·3 during the week ending Feb. 16th. During the past four weeks the death-rate in the city has averaged 31·0 per 1000, the rates during the same period being 17·9 in London and 20·5 in Edinourgh. The 228 deaths belonging to Dublin registered during the week under notice were two in excess of the number in the preceding week and included 10 which were referred to the principal zymotic diseases, against 20, 18, and 16 in the three preceding weeks; of these, three resulted from whooping-cough, two from scarlet fever, two from "fever," two from diarrhœa, and one from measles. These 10 deaths were equal to an annual rate of 1·5 per 1000, the zymotic death-rate during the same period being 1·5 in London and 2·7 in Edinburgh. The fatal cases of whooping-cough, which had been 12 and 9 in the two preceding weeks, further declined last week to three. The deaths from "fever," which had been three and five in the two preceding weeks, declined again to two last week. The 228 deaths in Dublin last week included 31 of children under one year of age and 71 of persons aged upwards of 60 years; the deaths of infants showed a decline, while those of elderly persons exceeded the number in the preceding week. Six inquest cases and three deaths from violence were registered; and 83, or more than a third, of the deaths occurred in public institutions. The causes of six, or nearly 3 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeon H. Todd to the *President* for course of hospital study. Staff Surgeon H. W. Macnamara to the *Ophir*. Surgeons: P. N. Randall to the *Duke of Wellington;* W. R. Knightley to the *Harrier;* R. Hill to the *Ophir;* W. H. Daw to the *Rambler;* and A. H. Prichard to the *Antelope*.

The following qualified candidates for the Royal Navy Medical Service have been appointed to be surgeons in His Majesty's Fleet:—Edmund Cox, John Macdonald, Arthur La Touche Darley, William Edward Ruttledge, Thomas Francis O'Keeffe, Charles Edward Cortis Stanford, Ernest Fitzgerald Ellis, August Joseph Wernet, George Charles Cumberland Ross, Percy Francis Alderson, Douglas Victor Lowndes, John Thornhill, Henry Constantine Woodyatt, and Arthur Richard Thomas.

ROYAL ARMY MEDICAL CORPS.

Lieutenant C. H. Furnivall is to do duty at the Station Hospital, Poona. Lieutenant A. M. Sparkes is detailed to assist the Embarking Medical Officer at Southampton. Major R. P. Bond is posted to the Western Heights, Dover, for duty.

The undermentioned officers retire on retired pay:—Lieutenant-Colonel J. G. W. Crofts and Major J. Harran. Captain T. H. M. Clarke, D.S.O., is seconded whilst his services are placed at the disposal of the High Commissioner of Crete. The undermentioned Lieutenants to be Captains:—H. O. B. Browne-Mason, F. S. Penny, B. Watts, H. G. Martin, J. G. Berne, F. F. Carroll, J. D. G. Macpherson, W. P. Gwynn, S. de C. O'Grady, A. H. O. Young, E. A. Bourke, M. M. Lowsley, A. C. Lupton, G. B. Carter, N. H. Ross, P. H. Collingwood, and C. J. O'Gorman. Civil Surgeon R. McKenzie Skinner, serving in South Africa, to be Lieutenant.

The following candidates were successful at the Royal Army Medical Corps examination recently held in London for commissions:—F. W. Lambelle (2750 marks), L. J. S. Cahill (2649 marks), W. C. Stevenson (2258 marks), M. C. Beatty (2220 marks), R. L. Hagger (2171 marks), H. W. Long (2098 marks), and J. R. Welland (1905 marks).

INDIA AND THE INDIAN MEDICAL SERVICES.

Lieutenant-Colonel Charles Little, Madras Establishment, is promoted to Colonel.

At the Indian Medical Service examination held in London on Feb. 8th the following candidates were successful:—

Name.	Marks.	Name.	Marks.
A. G. McKendrick	3449	C. B. McConaghey... ...	2611
G. E. Charles	3392	W. D. Ritchie	2591
J. W. Little	3090	G. C. L. Kerans	2590
D. St. J. Moses	3003	E. W. Browne	2575
N. E. H. Scott	2911	E. C. Hepper	2567
H. B. Foster	2882	F. T. Thompson	2486
G. B. Butt	2842	J. W. Illius	2478
C. E. Southon	2788	J. B. Christian	2417
H. R. Nutt	2780	L. P. Brassey	2391
J. K. S. Fleming	2740	G. Fowler	2357
H. W. Illius	2704	A. Murphy	2219
F. W. Sumner	2703	S. Bose	2212
J. A. Barnes	2700	P. L O'Neill	2133
J. Husband	2627	C. F. Marr	1895

MILITIA MEDICAL STAFF CORPS.

The undermentioned Surgeon-Lieutenants to be Surgeon-Captains: A. H. Benson and W. Fletcher. The transfer of Surgeon-Lieutenant W. E. M. Corbett from the 2nd Volunteer Battalion the Devonshire Regiment is cancelled at his own request.

VOLUNTEER CORPS.

Rifle: 1st Cadet Battalion the Queen's (Royal West Surrey Regiment): Acting Surgeon Arthur Charles Elliman to be Surgeon-Lieutenant. 1st Cadet Battalion the Buffs (East Kent Regiment): Acting Surgeon Charles Walter Scott to be Surgeon-Lieutenant. 4th Volunteer Battalion the Bedfordshire Regiment: The undermentioned gentlemen to be Surgeon-Lieutenants: Edward John Cross and William Fellowes Fisher. 2nd (Berwickshire) Volunteer Battalion the King's Own Scottish Borderers: Surgeon-Major R. S. Gibb resigns his commission and is granted the rank of Surgeon-Lieutenant-Colonel, with permission to wear the uniform of the battalion on his retirement. 2nd Volunteer Battalion the Welsh Regiment: Surgeon-Lieutenant D. L. Davies to be Surgeon-Captain.

VOLUNTEER MEDICAL STAFF CORPS.

The Aberdeen Company: The undermentioned gentlemen to be Surgeon-Lieutenants (Supernumerary): William Archer Irvine Fortescue, Francis Kelly, Alexander Ogston, and Thomas Fraser.

SOUTH AFRICAN NOTES.

Lieutenant J. Matthews, R.A.M.C., reported missing, is believed to be a prisoner (Belfast, Feb. 13th).

Lieutenant J. J. W. Prescott, R.A.M.C., is reported to have broken his collar-bone through a fall from his horse, near Knelfontein (Feb. 3rd).

Progress Report.—Civil Surgeon Bruce, improving (Newcastle, Feb. 14th). Civil Surgeon Williams, progressing favourably and convalescent (Feb. 15th). Lieutenant Forbes-Winslow, R.A.M.C., rather better, and Civil Surgeon Mowatt, no change, Pretoria (Feb. 16th). Civil Surgeon J. J. O'Reilly, dangerously ill (Kimberley, Feb. 16th).

The following officers were discharged from hospital to duty for the week ending Feb. 10th:—Major R. Holyoake, R.A.M.C., Civil Surgeons A. C. Hunter, G. R. Thompson, and Lieutenant W. H. S. Nickerson, R.A.M.C.

Inspector-General of Hospitals and Fleets Henry Charles Woods, M.D., M.V.O., has been promoted to a Commandership of his order.

Surgeon-Captain A. Mackenzie of the 4th Battalion the Somerset Light Infantry (Militia), Taunton, has been recommended for the Royal Humane Society's medal for endeavouring to save a Swede from drowning at East London, South Africa.

ROYAL COLLEGE OF SURGEONS IN IRELAND: DENTAL EXAMINATION.—The following candidates having passed the necessary examination have been admitted Licentiates in Dental Surgery of the College: Mr. Henry Earith Hayes and Mr. Daniel Leveck Rogers.

VACCINATION AT EXETER.—At the meeting of the Exeter Corporation of the Poor held on Feb. 12th it was reported that during the half year ended Dec. 31st, 1900, there were 476 births registered, 342 cases of successful vaccination were certified, 17 certificates of conscientious objection were granted, 51 children died unvaccinated, and the vaccination of 48 was medically postponed. The average of conscientious objections was below that for the corresponding half of 1899.

Correspondence.

"Audi alteram partem."

"LEGISLATION AGAINST NATIONAL INTEMPERANCE."

To the Editors of THE LANCET.

SIRS,—Dr. William Carter, having collected facts which prove that a high mortality is caused by excessive indulgence in alcohol, demands that something shall be done. THE LANCET endorses his views, "A Country Practitioner" endorses THE LANCET, and I am happy to endorse "A Country Practitioner." But the difficulty is to know what to do. We are hardly pioneers. The discovery that alcohol is the cause of many ills has been made some thousands of times during (historically) at least 5000 years, and some hundreds, if not thousands, of attempts have been made to deal with the evil—to do something. Some of these attempts have been more or less successful. Occasionally despotic power has succeeded. But despots do not live for ever, and despotic power is apt to change its objects. Occasionally religious fanaticism has succeeded, but only when it has limited intercourse with more free if more drunken communities to such an extent that its adherents are made barbarous as well as sober. The Turks are a case in point, and their temperance propaganda has been assisted by such persuasive means as the pouring of molten lead down the throats of drunkards. We who live under civilised conditions have a harder task. It is admitted on all hands that the difficulty of the temperance problem increases proportionately with the density of the population. It is greatest in towns. Now the least populated English county (Westmoreland) has 84 inhabitants to the square mile, and England is studded with great cities. Many attempts at temperance reform have been made in civilised countries—the United States, Canada, Scandinavia, Australia, and New Zealand, for example. Will Dr. Carter or anyone else tell us of a single instance in which they have been successful in a town of even so few inhabitants as 10,000, or in rural districts when the density of the population was half that of Westmoreland. Nay, can they tell us of an instance when public law-breaking resulting in public degradation (including increased drunkenness) has not followed on such an attempt. No doubt we could by Act of Parliament instantly make England more sober than at present. But only for a time. The open sale of drink would be disorganised, and men perforce would be temperate till the secret sale were organised. Then, following the rule elsewhere, they would be more drunken than ever, and the secret drinking and lawbreaking would have their other attendant evils.

I am, Sirs, yours faithfully,

Southsea, Feb. 16th, 1901. G. ARCHDALL REID.

To the Editors of THE LANCET.

SIRS,—The medical profession and the public generally owe to you a debt of gratitude for your very able and interesting leading article on "Legislation against National Intemperance." If such views reflected the judgment of the medical profession as a whole a volume of example would be set up that would do more to diminish intemperance than 50 years of legislation. Cannot some effort be made to establish a common doctrine in the profession? The modern view, in my opinion, is: (1) alcohol is *not* a stimulant; (2) alcoholism is a defect of will in relation to intoxicants (e.g., alcohol in England, &c.; ether in Ireland, where vast quantities are taken; opium amongst Mohamedans, who are forbidden alcohol); and (3) the predisposing cause of alcoholism is nervous instability of every kind. The children of parents with physical weakness take to narcotics like ducks to water. If the public were aware of this, playing with fire would not be so lightly risked. Alcoholism can no more be cured by imprisonment than can morphinism.—I am, Sirs, yours faithfully,

ASPINALL MARSDEN, M.R.C.S. Eng., &c.

Lightcliffe, Yorks, Feb. 18th, 1901.

To the Editors of THE LANCET.

SIRS,—May I express a hope that your powerful leading article and the correspondence it will call forth may result in some organised effort on the part of the medical profession to educate public opinion in this matter of serious national importance? I quite agree with the remarks of a "Country Practitioner" with the exception that I find it quite possible to be candid on the question of the abuse of alcohol and at the same time retain publican patients, many of whom are perfectly conscious of the evils of their trade and are temperance reformers at heart. Now that the great body of our profession, consultants and general practitioners, are alive to the evils resulting from the habitual abuse of alcohol, while we constantly have evidence of the hopelessness of expecting the two great political parties in the state to treat the subject on non-party lines as one of national urgency, I would suggest that we do, as we have done in other matters of grave importance to the public health, force the questions upon the public and so in time upon the state. Several of our most influential consultants are known to be in favour of temperance reform and a strong council for the "promotion of legislation against national intemperance" could easily be formed.

Only the other day the manager of one of the largest public-houses in my district told me that women were his best customers and that they were not the wives of the lowest class of men but of skilled mechanics earning from £2 to £3 a week. All of us in general practice in London must constantly see small babies in perambulators blocking up the doorways of the public-houses as late as 11 and 12 o'clock at night and their brothers and sisters playing hide and seek round the different bars whilst their mothers are inside drinking. The sending of children to public-houses for drink is an evil, but the evil of allowing mothers to take their children with them and keep them in the physical and moral atmosphere of a public-house up to 12 o'clock at night is one attended with more far-reaching consequences. Educated public opinion has compelled the State to interfere in many ways between parent and child in the interest of the latter, so surely it could do something to put a stop to this most pernicious form of cruelty.

I am, Sirs, yours faithfully,

London, W., Feb. 17th, 1901. M.D., B.S. Lond.

"THE SURGERY OF PREGNANCY AND LABOUR COMPLICATED WITH TUMOURS."

To the Editors of THE LANCET.

SIRS,—All obstetricians must have read with great interest Mr. Bland-Sutton's excellent lecture on ovarian tumours complicating pregnancy and labour. It seems to me that all of them will not accept the very decisive conclusions at which he arrives. That the proper practice when an ovarian tumour is detected during pregnancy is to remove it by ovariotomy is consistent with modern opinion, and no one, nowadays, I think, would recommend any other treatment. That cœliotomy is the only admissible procedure when an ovarian tumour is impacted in front of the fœtal head in actual labour and that puncture of the tumour is always bad practice is, I venture to think, a sweeping conclusion which facts do not justify. If in every such case the services of a skilled gynæcological surgeon, expert in all the details of modern abdominal surgery could be obtained I do not doubt that cœliotomy would be the most hopeful procedure. But consider how exceptionally such expert attendance, with all the necessary appliances, can be had. I can imagine few conditions more trying for the practitioner, or more hopeless for the patient, than such an abdominal section performed on the spur of the moment by a man who has not previously had the opportunityof practising this sort of work.

Nor do I see that Mr. Bland-Sutton has at all proved that puncturing the tumour impacted in front of the presenting part is either an unscientific or a hopeless procedure. The tumour in such a case is necessarily very small. If it had been large it would have risen into the abdominal cavity with the enlarging uterus. A simple aspiration, therefore, with proper antiseptic precautions would, under such circumstances, I submit, be a comparatively safe procedure, which might avert such a formidable operation as was found to be necessary in one of Mr. Sutton's cases in which the impaction of the fœtal head in the pelvic brim necessitated a Cæsarean section as well as an ovariotomy. In McKerron's paper 43 cases are tabulated in which this practice was adopted, in which eight of the

mothers died, a mortality large beyond doubt, but much less than that following either re-position or allowing the head to squeeze past the undiminished tumour. It is to be noted, moreover, that in most of these cases re-position had previously been attempted, so that the tumour had necessarily been subjected to mechanical injury, and also that most of them occurred many years ago before the days of strict antisepsis. It is difficult to see why a simple aseptic puncture should be branded as "an unsurgical procedure," since it may not only obviate the necessity of a Cæsarean section, but of the almost more formidable danger of an ovariotomy by unskilled hands during the actual progress of labour. If the contents of the tumour were found to be of such a character as to prevent its collapsing, then, of course, ovariotomy must at once be proceeded with.

In some of these cases, since the tumours are necessarily small and generally with long pedicles (Mr. Bland-Sutton says: "As is always the case in such circumstances it had a long and slender pedicle") vaginal ovariotomy might possibly be successfully practised. McKerron gives three cases in which this alternative was adopted, in all of which the mothers recovered.

While I do not question that in such hands as Mr. Bland-Sutton's cœliotomy is the practice which should be adopted, he has not convinced me that I was wrong in writing of these cases in the last edition of my book on midwifery: "It is to be noted, however, that accurate diagnosis as to the character of the tumour is not generally possible and it seems to me that, with careful antisepsis, a preliminary puncture is the simplest and probably the safest procedure."

I am, Sirs, yours faithfully,

Grosvenor-street, W., Feb. 15th, 1901. W. S. PLAYFAIR.

To the Editors of THE LANCET.

SIRS,—If you will print the inclosed remarks made by Dr. Herman before the Obstetrical Society in 1898 your readers will be able to read for themselves his advocacy of vaginal tapping. I am, Sirs, yours faithfully,

Cavendish-square, W., Feb. 18th, 1901. J. BLAND-SUTTON.

[INCLOSURE.]

Adjourned Discussion on Dr. McKerron's Paper on "The Obstruction of Labour by Ovarian Tumours in the Pelvis."

Dr. Herman said that Dr. McKerron's paper was the fullest account of the complication of labour with ovarian tumours that had yet been given. He (Dr. Herman) agreed in the main with Dr. McKerron's advice, but there was one method of treatment, the credit of which he believed Dr. McKerron had given to Fritsch, which he thought deserved fuller consideration and commendation than Dr. McKerron had given to it—viz., the making an incision into the cyst through the vagina and stitching the opening in the cyst to the margins of the vaginal incision. In this way the emptying of the cyst contents outside the peritoneum was secured. If the cyst were a dermoid, as many of the cysts which obstructed labour were, simple tapping was attended with much danger of the cyst contents escaping into the peritoneal cavity and setting up peritonitis. (Of the 43 cases in Dr. McKerron's paper treated by tapping or incision 24 died.) This danger was avoided by Fritsch's procedure. He (Dr. Herman) did not advise this for tumours that could be pushed up, nor for those which came under the care of experienced operators in circumstances suitable for the performance of ovariotomy. But many of the cases occurred in the practice of accoucheurs having little or no experience in ovariotomy. The time at which the reposition of an ovarian tumour became impossible was in the second stage of labour, when the tumour was driven down by the advancing presenting part of the child. At this time prompt treatment was needed; there was not time to place the patient under the care of an experienced surgeon. In such circumstances he thought incision and suture was the best course which an accoucheur inexperienced in operating could follow. If such a case came under the care of an experienced operator he inclined to agree with Professor Spencer in thinking the abdominal mode of operating better than the vaginal. If the tumour was driven down into the pelvis there was usually tension of its pedicle; and tension of the pedicle called for extreme care in tying it, produced risk of the knots slipping and the compression of the vessels being imperfect, with hæmorrhage as the result, and such after-hæmorrhage it would be almost impossible to stop by vaginal treatment.

"MR. VICTOR HORSLEY'S REPORT."

To the Editors of THE LANCET.

SIRS,—I have read Dr. Bruce's letter in your last issue with feelings of astonishment and regret. Without communicating with me previously he tells you and through you my constituents that my last report to them was incorrect and "my dicta in the highest degree misleading." After this grave general charge against my accuracy he goes on to state that "it is as nearly as possible the opposite of the truth to say that the representatives of the friendly societies would never consent to the question of the wage-limit being discussed at the Conciliation Board. On the contrary this was one of the questions which we (*sic*) expressly deferred for discussion until such a board would be formed." Dr. Bruce thus raises a plain issue. Although he does not make the direct statement the reader of his letter can only assume that the committee of the General Medical Council, of which Dr. Bruce is a member, had at one time or another agreed with the representatives of the friendly societies that they should defer the discussion of the wage-limit question to the meeting of the Conciliation Board. As I knew that no arrangement of this kind existed in the official documents on this subject open to me I telegraphed to Dr. Bruce and asked him to give me reference to the record of this transaction which he advanced in your last issue and on which he founded his charge against the accuracy of my report. I was not in the least degree surprised to receive the following telegram from him: "No record published agreed to first sitting." We are, therefore, to take it that some secret meeting took place and that we are indebted to Dr. Bruce's memory alone for what passed at that meeting. I must now prove, first, that Dr. Bruce's memory has played him false; second, that it is not my facts which are incorrect, but his; and third, that it is not my statements which are misleading, but his own. As reported in the minutes of the General Medical Council, 1899, p. 530, the Committee of the General Medical Council on Medical Aid Associations, of which Dr. Bruce is a member, held a formal conference with the representatives of the friendly societies on May 4th, 1898. A verbatim shorthand report of this conference was issued to the members of the Council on June 5th, 1899. At this conference the question of the wage-limit was brought up. The hostility of the representatives of the friendly societies to it was both unanimous and extreme, with the result that the question was finally and absolutely put into the background. From beginning to end of the conference in question there was not a single word said about this matter being deferred for discussion at the Conciliation Board. On the contrary it was expressly declared from the chair before the formation of a board was raised that the question of wage-limit was disposed of. Whatever Dr. Bruce may remember as having occurred at some previous secret conference of which according to his own statement no record is open to myself or others of his colleagues, that is of necessity entirely obliterated by what passed at the subsequent conference on May 4th, 1898. As we are in possession of a verbatim printed report of the proceedings of that meeting there is no room for any misunderstanding or lapses of memory as to what was the attitude of the representatives of the friendly societies on the question of wage-limit. Dr. Bruce makes a kindly reference to my anxiety for the interests of my constituents, the registered practitioners of England and Wales. I should be betraying those interests if I failed to report accurately and faithfully as known to me the facts bearing upon questions towards which I am placed in a judicial and fiduciary position. I have had to bear what I suppose is an average number of misrepresentations of my public acts since my election to the General Medical Council, but this charge of inaccuracy now formulated by Dr. Bruce, the Direct Representative of Scotland, is not only the most painful but the most untrue of them all.

I am, Sirs, yours faithfully,

VICTOR HORSLEY.

P.S.—Since writing the above Dr. Bruce has sent me the following by letter in response to several telegrams from me asking him whether May 4th, 1898, or what was the precise date on which his imaginary arrangement with the friendly societies' representatives was arrived at. "It is terrible to be pelted with telegrams with no records to refer to. 'May 4th, 1898,' has receded into the utterly hazy distance with me. Why not try Glover? He must have some sort of journal. I never kept anything of the kind." To comment on Dr. Bruce and his methods of conducting the public business of the profession would be waste of your readers' time.

THE OUTBREAK OF DIPHTHERIA AT OLD HEATH.

To the Editors of THE LANCET.

SIRS,—Your article in THE LANCET of Feb. 9th, p. 426, upon the outbreak of diphtheria at Old Heath, Colchester, describing the attitude taken up by Dr. George Brown, the

medical officer of health of Colchester, opens up more than one question of some importance. Even those of us whose experience agrees with that of Mr. E. A. Hunt in the treatment of diphtheria by means of the injection of antitoxin cannot admit that any practitioner should be coerced into using it. At the same time, as Dr. Brown has stated that he possesses a remedy for the disease which is of greater value than antitoxin and that the results of his method of treatment "are incomparably superior and more satisfactory than those given by the serum treatment," he must surely be in a position to prove his statement and only good could arise by permitting others to know of the details of his method. Indeed, in view of the fact that the patients of other practitioners are admitted to the fever hospital, the latter are certainly entitled to have demonstrated to them that the treatment in the institution will be satisfactory to them; otherwise it is hardly to be expected that they will advise the removal of those under their care, and the community for the well-being of which the medical officer of health is responsible will necessarily suffer.

I am, Sirs, yours faithfully,

HERBERT JONES,
Medical Officer of Health, Herefordshire Combined Districts.

Hereford, Feb. 16th, 1901.

"ARSENICAL BEER POISONING."

To the Editors of THE LANCET.

SIRS,—Permit me to point out that in your report of my contribution to the discussion on this subject at the meeting of the Royal Medical and Chirurgical Society on Feb. 12th my opening remarks are not quite correctly reported in that they perhaps seem to cast an element of reproach on my Manchester *confrères* for not detecting the cause of the epidemic earlier, whereas nothing could have been further from my intention than to imply any such reflection. Those who were present at the meeting will bear me out that after speaking in terms of high praise of Dr. Reynolds's discovery of the cause of the epidemic I somewhat playfully remarked that in a certain work on forensic medicine, the author of which I stated should be nameless, there occurred the statement that "in cases of peripheral neuritis of doubtful origin it is advisable to carefully examine the urine for arsenic." I, in common I am sure with many others, have nothing but admiration for the skill with which the mystery of the epidemic has been elucidated by Dr. Reynolds, Dr. Dixon Mann, Professor Delépine, and others.

I am, Sirs, yours faithfully,

Weymouth-street, W., Feb. 19th, 1901. ARTHUR P. LUFF.

THE COVENTRY DISPENSARY.

To the Editors of THE LANCET.

SIRS,—I am sure that your readers will agree that the profession of medicine is much indebted to the Birmingham and Midland Counties Branch of the British Medical Association for their attitude in refusing to give professional recognition to the medical officers of the Coventry Dispensary until they either bring their institution into line with professional opinion or resign the appointments they hold. Out of some 110 members present at the meeting there were but six dissentients, and it is gratifying to find that in such a meeting so many men were banded together in the common interests of reform.

If other cities were to take a decided stand against such institutions there would be less heard of professional abuse, and medical attendance upon any and all-comers irrespective of their means and position for so paltry a sum as that often offered would cease to exist. At the same time the fact would be brought home to medical men that in visiting members of dispensaries and benefit clubs financially they (the medical men) would be the losers, for it is absolutely impossible that a few shillings a year would repay the medical man for serving a lay committee. He must sooner or later recognise that he is "farmed" by such committee of laymen or that he is willing to give his services for philanthropic motives.

My suggestion is that immediate steps should be taken in other localities, through the British Medical Association and the press, to condemn any medical practitioners holding appointments in institutions not conducted upon lines in accordance with professional opinion, supposing, of course, due and sufficient warning had been given to them. After such condemnation, a reasonable time being allowed for alteration of their conduct, any practitioners transgressing should be indicted before the General Medical Council as being the servants of laymen who exploited them for pecuniary gain, and, if I mistake not, their positions would be analogous to that of Dr. Irvine and the Birmingham Consultative Institute.—I am, Sirs, yours faithfully,

Coventry, Feb. 19th, 1901. EDWARD PHILLIPS.

SCARLET FEVER AND HOSPITAL ISOLATION.

To the Editors of THE LANCET.

SIRS,—Will you allow me to correct the report in THE LANCET of Feb. 16th, p. 477, of my remarks at the meeting of the Society of Medical Officers of Health on Feb. 8th? I said a good deal more than is reported, but with this I shall not deal. I did not say that isolation hospitals were everywhere overcrowded—this we know is not the case. What I did say was that they were very commonly too small for the requirements of the districts to which they belonged, and frequently overcrowded, which is a very different thing. Again, I did not say that our own hospital was grossly overcrowded, but that it had at times been greatly overcrowded in the attempt with inelastic accommodation to meet the requirements of epidemic conditions. It is certainly not overcrowded at the present time.

I am, Sirs, yours faithfully,

Nottingham, Feb. 16th, 1901. PHILIP BOOBBYER.

"MEDICAL CERTIFICATES AND THE LONDON SCHOOL BOARD."

To the Editors of THE LANCET.

SIRS,—It is surely obvious that the certificate system of the School Board wants alteration and I would suggest that some such arrangement as the following should be agreed upon. In the case of a child or of a teacher, if the patient or the patient's legal guardians can pay for a certificate let them do so. If they are too poor, and the medical man in attendance likes to give one out of charity let him do so, but if not, when a patient under the board cannot get a certificate the fact might be reported to the board. The medical officer might then write to the practitioner in attendance and inform him that it is his duty to see the patient and he should ask the practitioner to fix a time when they could meet over the case. If the practitioner chose to attend he should get a fee of, say, 1*s.*, after the scale for notification of infectious disease as regards a patient connected with a public institution. If he did not choose to attend he would get no fee and the medical officer of the board would be in a perfectly correct position. The medical officer draws a large salary and it seems to me that it is his plain duty to sign medical certificates for the board when required. The shilling should be paid by the board, for I do not fancy that many cases would arise where the above arrangement would have to be carried out.

I am, Sirs, yours faithfully,

INTERESTED.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Reforms and Improvements in the Indian Medical Service.—Further Increase of the Plague Epidemic.—Miscellaneous News.

IN order to relieve officers of the Indian Medical Service proceeding on furlough the Government of India have sanctioned the engagement of 20 private medical practitioners. In addition to this temporary measure I understand that it has been practically settled to increase the permanent strength of the service, and in addition also to create an asylum service, which will be open to officers who have had special experience of the insane. The pay for this branch also will be sufficiently attractive to draw in men from outside. I understand also that the jail service will be improved so that those officers who wish to devote their energies in this direction for a long period will be duly

rewarded. The long-looked-for re-opening of leave is daily expected, as in addition to the assistance sanctioned from outside 20 officers have returned from China. It is said that the constant work of the past few years has caused officers to break down at their posts and that the amount of invaliding is becoming serious. The private medical practitioners will be engaged for one year. The pay offered is Rs.600 a month for those holding a diploma in public health and Rs.500 a month for others not so qualified.

The plague deaths throughout India have again increased in number this week—viz., from 3277 to 3396. The increase is entirely in Western Bengal and Bombay city. The figures for Bengal are 2261 against 2181 last week. Patna returns 1231 deaths; Saran, 543; Monghyr, 284; Gya, 181; and Calcutta, 54. In Mysore there is a decline from 367 to 272, and in the Punjab from 55 to 23. In Bombay city, however, there has been a great rise. Last week 308 deaths were recorded, whereas the deaths to-day are put at 427. There are six European cases in hospital, all mild. Of the total deaths from plague last week there were only seven children. Since these figures were published the mortality has risen still further, the deaths for Jan. 30th alone having exceeded 100. The general mortality of the city is very high, 1419 deaths having been reported during the past week—a rate of 89 per 1000 per annum. During the past week plague has threatened to break out in two other quarters—viz., at Karachi and at Benares. In the district of the latter city several cases apparently occurred before the disease was recognised. Two villages are infected. Karachi city is once more threatened. An indigenous case is reported and large numbers of dead rats have been found in the market quarter.

The hospital ship *Carthage* has just arrived from Taku after a splendid voyage, bringing three medical officers in charge of 82 native invalided soldiers and about 100 followers. The alterations in the hospital ship *Gwalior* having been completed she will leave Calcutta for Hong-Kong on March 6th.

A severe outbreak of beri-beri has continued in the 2nd Madras Infantry for some time, causing sickness in about 25 per cent. of the regiment. The mortality has been low and most of the men have been able to return to duty.

Feb. 2nd.

THE ORGANISATION OF THE PROFESSION.

(FROM OUR SPECIAL COMMISSIONER.)

History and Formation of the Northumberland and Newcastle Medical Association.—The Amalgamation with the Newcastle Medical Ethical Society.

A FEW months ago the dissatisfaction of the Tyneside colliery surgeons reached an acute phase and consequently a desire to organise was manifested by various practitioners of the county of Northumberland. Close by, on the other side of the Tyne, at Gateshead, the parent association for this part of England, the union of the medical men of that town had given the example of useful and successful organisation. There was also at Newcastle a medical ethical society, but the idea then germinating was in favour of the more widespread organisation of a county rather than that of a mere local society. For this there was also an example close at hand in the County of Durham Medical Union. On the other hand, the latter society was naturally particularly anxious to see their nearest neighbours organise on similar lines to themselves. Indeed, this is how the movement is likely to spread. First the practitioners of a town form a union, then they find that their efforts are likely to miscarry because the practitioners in the outlying districts and surrounding country have not adopted the same principles and policy as themselves, consequently efforts are or will be made to bring the whole county into union. But hardly is this achieved than the county, as a unit, feels itself at a disadvantage if the neighbouring counties are not likewise organised, and thus the movement, to be thorough and absolutely effective, must spread from county to county till the medical men in all parts of the kingdom are united together for the maintenance of the same principles, the enforcement of the same means of action, and the defence of the same interests.

In Northumberland matters were brought to a head by difficulties which arose between the Backworth miners and the colliery surgeons of that district. The County of Durham Medical Union thought that the psychological moment had arrived when something might be done to crystallise the somewhat vague aspirations of the Northumberland medical practitioners. They consequently arranged to hold a meeting at the County Hotel, Newcastle-upon-Tyne, on August 23rd, 1900, and inserted advertisements in the local press inviting medical men to attend. The response was not very encouraging, for only a few practitioners were present. This, it should be noted, is what very generally happens. The first step is always the most difficult, and no experienced organiser would allow himself to be discouraged because the earlier efforts meet with but slight support. The meeting, though small, did good work. They determined to form a society and appointed Mr. Rutherford Morison as the President *pro tem.* They also selected a secretary, decided that a draft of rules should be prepared, and circulars were sent to all the practitioners inviting them to another meeting at which the union should be definitely constituted. This convocation differed from most of the other similar efforts that have been made, for it not only urged the advantages of organisation, but proposed immediate action and took the form of a *plébiscite*. With the circular there was a card which was to be returned to the secretary with answers to the following questions:—

1. Are you in favour of an increase of the rate of professional remuneration from 6*d.* to 9*d.* per fortnight for every adult workman?
2. Will you support a combined effort on the part of the medical profession to obtain this object?

The second meeting was held in the library of the Royal Infirmary on Sept. 6th and this time there was a good attendance. It was then definitely decided to form a medical union, and a committee was appointed carefully to examine and revise the proposed rules and to study the question of the remuneration for contract work according to the information that was now coming in from all parts of the country. Then a third and final meeting was held on Sept. 20th when the rules were adopted and the society was definitely constituted. The adoption of rules often causes much discussion and loss of time. In this case, however, the precedent established in the county of Durham served as a guide and it required hardly more than an hour to explain and vote upon the rules. Thus it will be seen that as experience extends the work of organisation becomes simplified. The dispute with the Backworth miners and the programme for future action was not so readily settled; but it was very generally felt that it was absolutely necessary to fix definitely a minimum rate of remuneration for colliery contracts; that not only must all members pledge themselves to observe this rule, but that it was necessary to create a fund to compensate those who might be victimised in this effort to improve the position of the profession. For the general purposes of the medical union each member was called upon to pay an annual subscription of half a guinea; but the indemnity fund, as it is called, is maintained by supplementary and voluntary subscriptions collected as the emergency arises, according to the necessities of the case and the means of the subscribers.

The next step was to effect an amalgamation with the Newcastle Medical Ethical Society, which had been in existence for more than a year and which had done excellent pioneer and educational work. This society was, however, limited to the town of Newcastle, and both organisations felt that it would be to their mutual advantage to amalgamate, and this was effected on Nov. 6th. The rules were slightly modified so as to comprise the principles of the two organisations and the amalgamation thus brought about is entitled the Northumberland and Newcastle Medical Association. Its object as the rules now stand is:—

To protect the interests of members of this association generally, but more particularly from unfair competition and from any attempts that may be made to induce or compel medical practitioners to accept insufficient remuneration for professional services. To establish and maintain minimum rates of payment for medical contract work in relation to all classes of workmen, members of friendly societies, sick and other clubs, lodges, insurance and other companies, and societies. To coöperate with and assist (when requested) the members of all approved local medical associations in carrying into effect any of the resolutions passed by such associations as may be approved by a majority of the members of this association in general meeting assembled.

On Dec. 20th another general meeting was held and a

standing sub-committee was then appointed to which all questions in relation to medical ethics might be referred. While this question of building up a constitution was progressing the more practical work of enrolling members was also actively pushed forward. In this the association, and indeed the profession generally, are much indebted to Mr. Rutherford Morison, who not only lent the influence of his name as president of the association, but has devoted a great amount of time and personal effort, not merely in presiding over the meetings, but in writing, telegraphing, and in travelling long distances so as to interview and persuade various practitioners who were hesitating to join and work with their colleagues in the profession. As one of the leading operating surgeons in the north of England Mr. Rutherford Morison has no personal interest to serve, and therefore his opinion acquires the weight rightly attached to all disinterested and altruistic endeavours. It is estimated that there are about 350 medical men in actual practice in the county of Northumberland and the town of Newcastle. In answer to circulars sent to all these practitioners and in response to the letters which had to be written to some of them and to the personal persuasion that in some instances had to be brought to bear 142 practitioners have joined the association and most of them have signed the following form:—

I desire to become a member of the Northumberland and Newcastle Medical Association and I undertake, if elected, to observe and conform to the rules, regulations, and decisions of the association. I agree also

(*a*) To accept no rate of remuneration for professional services lower than that approved by the association.

(*b*) Not to assist by consultation or otherwise (except in emergency) any practitioner in the counties of Newcastle-upon-Tyne or Northumberland who is declared by the above association to be opposed to the objects of the association.

At the time of the amalgamation the Newcastle Medical Ethical Society had 92 members, and the majority became members of the Northumberland and Newcastle Medical Association. But such union is not without its difficulties, for the interests and the position of the town practitioner differ widely from those of the rural districts, who, for the most part are colliery surgeons. It was at the commencement of 1899 that Dr. Alfred Cox, as secretary of the Gateshead Medical Association, urged that a similar organisation should be formed on the Newcastle side of the river Tyne. Dr. J. S. McCracken, agreeing, called an informal meeting of the Newcastle west-end practitioners in his own house. This was on Jan. 24th, 1899. 30 invitations had been sent out and no less than 23 practitioners attended. A committee was at once elected to organise a large meeting to which all the practitioners of Newcastle would be invited. This meeting was held at the Royal Infirmary on Feb. 15th following and was remarkable for its large attendance. It is estimated that there are about 140 practitioners in Newcastle and that quite 100 were present. Mr. J. Ackworth Angus was in the chair and the meeting unanimously and enthusiastically decided to form an association, to which they gave the title of "Ethical Society," and appointed a committee to frame a set of rules. These rules dealt with the future more than with the past—that is to say, their practical effect was to prevent the increase rather than to secure the abolition of old-established abuses. From the very beginning the association made a firm stand against the National Deposit Friendly Society. Of all such organisations this is probably the best, but it was new and if it gained a footing in the town then there would be yet another medical aid society to contend against. Also, there was a great objection to a lay society of this description dictating its terms even though these terms were fairly liberal. The National Deposit Friendly Society offered the Newcastle medical practitioners a 2*s*. 6*d*. fee for every other day and 1*s*. for the intermediary days. Thus if a patient required three visits in the course of six days there would be three fees of 2*s*. 6*d*. each, but if it was necessary to visit the patient every day then there would be three fees of 2*s*. 6*d*. each and three of 1*s*. each. This arrangement, it will be seen, is a great improvement on the system of weekly subscription paid whether well or ill. The medical attendant gets a much better fee, the society guarantees that the fee will be paid, and he is paid in due proportion to the work he does. Nevertheless, the Newcastle Medical Ethical Society decided to have nothing to do with the National Deposit Friendly Society. They would not allow the society to advertise any of their names and the only approach to a concession made was that of giving patients a detailed bill, which, of course, any patient has a right to claim.

While the Newcastle Medical Ethical Society was thus warning against the comparatively liberal terms of the National Deposit Friendly Society some of its members were taking the miserable allowance of 3*s*. 6*d*. per head per annum from members of the local medical aid association. There are also many friendly societies that do not pay more. But, worse still, it was now stated that at least one society intended to reduce the fee from 3*s*. 6*d*. to 3*s*. per annum and that both juvenile and female lodges were to be created. Consequently, and to meet this, the members of the Newcastle Medical Ethical Society decided that they would resign if any such alterations were made, and so that their position should not be occupied by others they resolved: "That no member accept a friendly society lodge at a less rate than was paid to the previous doctor"; and also, "that no juvenile lodge or juvenile members be accepted under 4*s*. per member per annum; also that no female lodge or member be accepted by any member of this society." It will be seen, therefore, that if little or nothing was done to remedy existing grievances the action taken was fairly energetic so as to prevent the extension of such abuses. The efforts made by the National Deposit Friendly Society and the Medical Aid Association to implant themselves in Newcastle were frustrated, as also the attempts of the friendly societies to lower the rate of subscription and to create female and juvenile lodges. One female lodge existed before this attempt at medical organisation; it still exists to-day; but its medical officer will resign when he receives a formal letter from the Northumberland and Newcastle Medical Association calling on him to do so. Up to the present the latter and more recent organisation has had its time absorbed dealing with the difficulties of the colliery surgeons, but at the next general meeting the interests of the town practitioners will be taken in hand. The Newcastle Medical Ethical Society, it has been seen, was constituted in February, 1899 and by amalgamating with the Northumberland Medical Association in November, 1900, ceased to exist as a separate body, and the joint organisations now took the title of the Northumberland and Newcastle Medical Association.

(To be continued.)

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Overcrowding and Housing.

A CONFERENCE on the housing problem was held in Manchester on Feb. 9th. The chairman in a vigorous speech gave it as his opinion that "insanitary property should be condemned and compulsorily closed." A city councillor urged the local authorities "to vigorously use the powers they already possess under the Housing of the Working Classes Act, 1890." The president of the Trades Council said that "something of a definite character should be done." The conference was rich in such phrases which sound well and commit nobody. In April last a similar conference was held in a coöperative hall in this city, the only outcome of which was the passing of a resolution approving of the formation of a "Manchester, Salford, and District Housing Reform Council," and the bodies convening the meeting were asked to "appoint a council with power to add to their number." But amid all the vaporous rhetoric too often leading to nothing practical some facts were stated by Mrs. Clay, a lady well known for her work among the poor in the Hulme district, which show the pressing need for action in addition to talk. Speaking from an experience of nearly 20 years, she says that "the people are obliged to herd together without regard to health or decency." In one house with kitchen, scullery, and two bedrooms there are three families—six adults and eight children. In another house one room is the dwelling-place of a sandstone hawker, his wife, and three children. One of the children died and lay there for a week, the rest of the family living, eating, and sleeping in the room as usual. In another house with five rooms and a scullery there were 19 persons, and 16 in one of the same size close by. Not a stone's throw from these were two houses, each with one small bedroom, in which were two families, one of six and the other of seven children; the eldest of each family was a girl of 15 and 16 respectively. The family income of each was 18*s*. and the rent was 4*s*. As Mrs. Clay says, "habits of morality, decency, cleanliness

were, under such conditions, an utter impossibility." The difficulties in solving this problem are very great. Private enterprise is slow to come forward. The city council receives more abuse than thanks when it closes insanitary dwellings or clears them away. The builders of cottage property who sail close to the wind as regards the "building by-laws," and have reduced jerry-building to a fine art, are loudest in their denunciations of the corporation if they erect "barrack dwellings" or any other dwellings for the working classes, and say the corporation are becoming "speculative builders." But the corporation buildings in Ancoats appear to have brought down the death-rate in places by over 40 per cent. Our freedom, which is sometimes licence, would perhaps rebel against the proceedings said to be taken against dirty people and dirty houses in Berlin. There the former may be removed to a kind of workhouse in which they are detained while their houses are thoroughly cleansed and they themselves instructed in cleanly habits. A certain stratum of our population will always be filthy unless compelled to be clean, and is thus a constant danger to those around. Various schemes for spreading the people wider apart are at present in the "talked-of" stage, and may perhaps get no further.

Hospital Sunday.

The amount collected at the various churches and chapels on Feb. 10th.—Hospital Sunday—has not yet been publicly announced. It is stated that the various hospitals of Manchester and Salford had last year an aggregate deficit of £12,310. Still their work increases and some of them, rather than curtail it, are driven deeper into debt. In addition to the increased calls on the people in connexion with war and famine, which have no doubt diverted money that might have gone towards the support of the hospitals, another factor in the case has been the higher cost of coals and provisions, which has made hospital expenses heavier. The need, therefore, for large collections is manifest, but the experience of past years is not encouraging. In 1874 a sum of £6248 was collected, while last year it was only £3893. If all attending the various places of worship gave a trifle a larger sum than this should be obtained. But what is done by the great multitude who do not go to church?

Hospital for Skin Disease.

At the annual meeting of the Manchester and Salford Hospital for Skin Diseases held on Feb. 8th it was announced that a room was being built where the "light" treatment for skin diseases can be carried out. Towards this object the chairman, Mr. W. C. Jones, promised to defray the cost of the building and the necessary instruments to the extent of £500. Dr. H. G. Brooke visited Copenhagen last summer and was very favourably impressed by the excellent results of this treatment in the hands of Professor Finsen.

More Bacteria Beds.

The Rivers Committee of the Manchester City Council have resolved to extend their experiments with the bacteriological method of treating the sewage of the city. Hitherto they have had at Davyhulme two beds of half an acre each. They are now going to construct ten half-acre beds, which may be taken to mean that the two experimental beds have done their work satisfactorily. By gradually extending the bacterial beds the committee will be able to "test the efficiency of the system ere they commit the work absolutely to it." It is calculated that to deal with the whole of the sewage 46 acres of beds will be required. In the meantime this method is carried on alongside the chemical precipitation method, which has been in use for some years.

Typhus Fever in Ancoats.

At the meeting of the Manchester City Council on Feb. 6th Councillor Dr. C. H. Braddon moved the reception of a report from the medical officer of health respecting the recent outbreak of typhus fever in Ancoats. He gave an interesting sketch of a severe outbreak of the disease in the winter of 1862–3 when he had charge of the Workhouse Hospital in Bridge-street, together with the FeverHospital near Strangeways. Since that time he had not seen a case of typhus fever and "he believed that few medical men of the present generation had seen a case of real typhus." During that epidemic the late Sir William Roberts had a severe attack of the disease and nearly lost his life. Dr. Braddon said that care had been taken to disinfect every house in which the disease had been found, and beside the cases in hospital between 20 and 30 individuals were isolated at Clayton, where they were kept in quarantine. "The epidemic seemed likely to afford another instance of the vast importance of the sanitary powers which were exercised by local authorities in these days." In one house a man and two children were found "down with typhus," the wife having been previously taken to the hospital. Both parents died. The chairman of the sanitary committee said that the medical officer found the house locked and got in through the window, and that "the action of the medical officer of health in connexion with the outbreak was worthy of the highest praise."

Memorial to the late Professor Tom Jones.

The amount promised towards the memorial to the late Professor Tom Jones is already over £600. There has been no systematic canvassing, as it is desired that all donations should be the result of the personal wish of the givers to share in this tribute to the memory of a valued and lamented friend. The form of the memorial cannot be determined till the amount of the fund is known, but it may probably be decided that an exhibition or prize will be the most fitting mode of commemorating the work to which he devoted his life.

Feb. 19th.

WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Precautions against Plague.

AT a meeting of the West of England and South Wales branch of the Incorporated Society of Medical Officers of Health held at Newport on Feb. 14th the area of the branch was defined to include the counties of Hereford, Gloucester, Somerset, Monmouth, Devon, Cornwall, the northern portion of Wiltshire, and the six South Wales counties. The next meeting of the branch will be held at Plymouth on April 11th. Dr. Edward Walford of Cardiff introduced a discussion upon the desirability of uniformity of action by port sanitary authorities with respect to methods of dealing with cholera, yellow fever, and plague under the Local Government Board order of Nov. 9th, 1896. In the course of this discussion it was made apparent that the only means of ascertaining which foreign ports were infected was by a careful study of the columns of the daily papers and that each port medical officer of health made out day by day his own list of infected ports and was guided by this list in deciding which vessels should come under the Board's regulations. Dr. D. S. Davies of Bristol pointed out that the plague regulations of 1896 were practically the cholera regulations of 1892, and that whereas cholera is a human disease the infection of plague may be transmitted by rats or fleas, and that although a ship may have left an infected port a considerable time beyond the incubation period of plague in the human being, yet there may still be danger from rat infection when the cargo is discharged. At Bristol every vessel from an infected port is kept 10 feet from the wharf, planks to the vessel are all taken up at night, and the ropes connecting the ship to the wharf are guarded with thin iron collars. At the close of the discussion it was resolved to request the council of the society to represent at an early date to the Local Government Board the urgent necessity for a revision of the existing plague regulations in view of the special charac eristics of plague, the method of its spread and introduction by infected animals, and the possible spread of the disease from one home port to another. Dr. J. Howard-Jones of Newport and Dr. W. H. Symons of Bath, at the close of the meeting gave very instructive details of the card system of tabulating statistics and general information which they have each had in operation for some time.

Isolation Hospital Accommodation in Carmarthenshire.

The county of Carmarthenshire is very ill provided with the means of isolating cases of infectious disease. Apparently there is no fever hospital in the entire county, which has an area of nearly 600,000 acres and a population of 150,000 people. The house committee of the Carmarthenshire Infirmary have drawn the attention of the Carmarthen Town Council to the importance of establishing a suitable hospital for the borough and at the last meeting of the council the medical officer of health and the borough surveyor were asked to report upon the whole question. As there is a population in the county

town of only a little over 10,000 persons it seems a pity that a scheme for the whole county, or at any rate for those districts immediately surrounding Carmarthen, should not be formulated.

Cardiff Police Surgeons.

For nearly 20 years Dr. Thomas Wallace has held the post of police surgeon to the Cardiff Corporation and, as already stated in this column on Jan. 26th, the watch committee recently decided to appoint three surgeons, allotting to each one a separate district. On Feb. 18th Dr. James Joseph Buist was elected to the central division, Mr. Marmaduke Pittard to the Grangetown division, and Mr. J. Llewellyn Treharne to the Roath division. Mr. Treharne, who is the surgeon to the prison at Cardiff, was elected chief surgeon and will be required to examine recruits, lunatics, &c. Dr. Wallace was a candidate for the central division. The duties of the police surgeons include attendance upon the constables and firemen at a fee of 4*s.* 6*d.* per annum for each man, a sum which is considered by many medical men in Cardiff to be quite inadequate to the services rendered.

Deaths under Chloroform.

Two deaths occurred in South Wales recently during the administration of chloroform. On Feb. 12th a married woman at Swansea, who was about to be operated upon at her own house for varicose veins, died under the anæsthetic, and on Feb. 15th a girl, 15 years of age, died under similar circumstances at the Cardiff Infirmary, where she had been attending as an out-patient. She had come on that day from her home to have her tonsils excised. In the latter case, although there were attempts at vomiting at the beginning of the administration of the anæsthetic, there was found on post-mortem examination to be no food in the stomach, and the other organs were in a normal condition.

Queen Victoria Convalescent Home, Bristol.

The convalescent home at Bristol, which was opened in November, 1899, by Queen Victoria and which was intended primarily to relieve the wards of the Royal Infirmary and of the General Hospital, has never, owing to lack of funds, been fully occupied. The treasurer of the home, Mr. P. Vaughan, has therefore offered to contribute the sum of £10,000 conditional upon an additional £20,000 being raised by the end of March next, and it is anticipated that this amount will enable the governors to make the fullest use of the institution. The citizens of Bristol are so noted for their philanthropy that there ought not to be any doubt as to the fulfilment of Mr. Vaughan's munificent offer.

Bath Eye Infirmary.

The annual meeting of the subscribers of the Bath Eye Infirmary was held on Feb. 11th. The medical report showed that the in-patients numbered 282, as compared with 268 in 1899, and that there were 2047 out-patients as against 2117 in the preceding year. The average period of residence of each in-patient was 12 days, and the daily cost for maintenance was 8¼*d.* The financial statement showed a favourable balance. The best thanks of the committee were awarded to Mr. W. M. Beaumont, the honorary medical officer.

Taunton and Somerset Hospital.

The annual meeting of the governors of the Taunton and Somerset Hospital was held on Feb. 14th, under the presidency of Mr. H. J. Badcock, J.P. The medical report stated that 846 in-patients had been admitted against 824 in the previous year. The daily average number of in-patients was 84·6 and the average duration of their stay was 32·7 days. The out-patients numbered 4191, as compared with 3968 in 1899. The President reminded the subscribers that the King was a life governor of the institution by virtue of a considerable contribution which His Majesty, when Prince of Wales, gave towards the Victoria Jubilee Nursing Institute in connexion with the hospital.

Conference upon Housing Reform.

One of the most gratifying features of the present agitation in favour of improved housing accommodation for the working classes is the activity which is being displayed in the direction of improvement by the leaders of the working classes themselves. On Feb. 16th a conference consisting of 191 representatives of trades unions and similar organisations was held at Bristol to consider what practical steps could be taken to secure housing reform in the west of England and south Wales. The members of the conference were drawn from an area extending from Swansea to Swindon and from Cheltenham to Exeter. Mr. W. Thompson, a member of the Richmond (Surrey) Town Council, gave an account of the municipal cottage dwellings which have been erected in Richmond. The Bristol corporation are now building 34 cottage houses, but it is not anticipated that the rentals received from them will, as at Richmond, be sufficient to pay the interest and repayments upon the capital outlay. All the speakers at the conference who were at all conversant with the subject urged the desirability of increasing the period for the repayment of loans contracted under Part III. of the Housing of the Working Classes Act, 1890, to at least 60 years.

Feb. 18th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Preparations for a Small-pox Epidemic in Edinburgh.

EDINBURGH as yet presents a clean bill of health as far as small-pox is concerned. The public health authorities, however, have issued a circular to the medical men in the town recommending a general revaccination. They undertake to supply lymph to medical men free of charge, and to make an allowance of 2*s.* for every person successfully vaccinated. Cases of small-pox continue to occur in various towns near Glasgow. A few fresh cases have appeared in Dundee. The medical officer of health of Aberdeen reports to the town council that in the past month four cases of small-pox occurred within the city. The first two cases had been infected in Glasgow, and these led to the infection of two other cases. One was the case of a porter in the service of the sanitary department who, being only temporarily employed, had not been revaccinated, but who in the absence of the greater number of the staff on New Years' Day at the time of admission of the first case had inadvertently been permitted to assist in the removal of the infected clothing. The other case was that of an unvaccinated child in the hospital who lay in the scarlet fever ward nearest the small-pox pavilion, the ward and the pavilion being separated by from 40 to 50 yards of open space. This case appeared to have originated by aerial infection. In acknowledging the receipt of the report on this case the Local Government Board stated "that it seems to the Board to point to the necessity of entire structural and administrative severance of the treatment of small-pox from that of any other disease." The hospital authorities are advised that even substantial barricades, cutting off all communication or intercourse between pavilions in the same enclosure used for other diseases and pavilions used for small-pox in bulk, with complete administrative adjuncts and staff attached, do not prevent the invasion of small-pox.

Glasgow University.

The February meeting of the University Court was largely occupied by a discussion on the form in which the University accounts have been kept and presented. At a previous meeting Dr. D. C. McVail had adversely criticised the manner of keeping the accounts and had insisted that this was not in accordance with the terms of the legal ordinance. As a consequence the whole matter was remitted to the Finance Committee, which at the current meeting reported that "the accounts are in order and in proper form." The court adopted this decision though Dr. McVail maintained his position and entered his dissent. He took the same position in reference to a proposal to erect a room for the accommodation of students in the cloisters. The Finance Committee reported against this suggestion on the ground of the expense and the court agreed to their recommendation, Dr. McVail again dissenting.—The celebration of the ninth jubilee of the University which is to be held in June next is causing much activity in academic circles, and elaborate arrangements are being made to make the various ceremonies worthy of the event. A large number of representatives from home and foreign universities and scientific corporations have been invited, and the occasion is likely to be one of much interest. The fact that the International Exhibition is also to be held during the summer will make the city specially attractive for visitors.—The free lectures have been continued during the season and have as before secured large audiences.

University of St. Andrews.

The University Court has made the following appointments: Dr. Robert Thornton to be assistant in the department of medical jurisprudence and public health in the place

of Dr. Robert Mowat who has resigned; Mr. Sydney A. Kay, B.Sc., to be lecturer on chemistry; and Mr. R. C. Punett, B.A., to be lecturer on natural history. At the spring graduation ceremony the University is to follow the precedent recently established by the University of Edinburgh, the Senate having intimated its intention to confer the honorary degree of LL.D. upon two members of the gentler sex.

Handsome Gifts to Hospitals.

Mr. G. J. Kidston of the Clyde Shipping Company has given a donation of £5000 to the Glasgow Royal Infirmary, £5000 to the Western Infirmary, and £2500 to the Victoria Infirmary. These handsome sums are specially opportune at a time when, in common with other charities, the infirmaries are feeling the financial strain induced by the claims arising out of the South African war.

Small-pox in Glasgow.

The official bulletin issued on Feb. 18th leaves 387 persons under treatment in hospital. This is a reduction of 49 on the previous week's statement. New cases, however, continue to be admitted, but the dismissals far more than compensate for these. The new cases, too, show a diminishing rate, though the total is still considerable. During the fortnight ending Feb. 16th the admissions numbered 202, as compared with 350 during the previous fortnight. In his last report Dr. A. K. Chalmers announces that a careful record of the condition of the vaccination mark in all patients is being kept, and that the results will be dealt with in a subsequent report. The observations, it is satisfactory to know, are being made and recorded with critical minuteness, so that instead of a rough classification of "vaccinated" and "unvaccinated" details will be given of the size and character of the scar, the age of the patient, the severity of the attack, and the interval between its occurrence and the date of vaccination. An analysis of the small-pox records of the city during the last decade has recently been made by Dr. Robert S. Thomson. Dealing with the area of the vaccination scar in relation to the degree of protection afforded by the operation, it is shown that of all cases of small-pox occurring which presented a scar area of less than a quarter of a square inch 84 per cent. were discrete in type, but of those presenting over half a square inch of scar area 97 per cent. were of this character. In the first-class 14·6 per cent. of the patients died, while of the second only 1·6 per cent. were fatal cases. As to the value of revaccination, the experience of the small-pox hospital during the 10 years under review is very striking. In that time 595 persons not suffering from the disease were, by reason of their duties or for educational purposes, brought into contact with infection in the wards of the hospital, but not one who had been successfully revaccinated contracted the disease. The same truth is illustrated by the age distribution of the disease in the cases occurring during the past fortnight, which show that it is mainly on persons from 25 to 35 years of age that the incidence of the disease falls. 14 only of the 202 cases were in children under 10 years, and of these 11 were unvaccinated, six being babes varying in age from two weeks to seven months. All six were unvaccinated and five died, as did also an unvaccinated girl of two years. The age of the other unvaccinated children ranged from four to seven years. Of the three children who presented evidence of primary vaccination all were between six and eight years of age and the eruption in each case was sparse in quantity, although in all the vaccination mark was unsatisfactory, either by reason of the small size of the scar area or from absence of characteristic pitting of the surface. Of the deaths which occurred during the fortnight 17 were in unvaccinated persons; in two there was no evidence of vaccination though it was alleged to have been performed in infancy; and in four the marks were ill-defined The deaths occurring among vaccinated persons were as follows: under 30 years of age, two; under 35 years, two; under 40 years, six; under 55 years, two; and under 70 years, one. It is not stated whether in these cases revaccination had been performed.

Founders' Day at the University of Aberdeen.

In former times it was the custom of King's College to celebrate its founders' day, and sometimes the celebration was conjoined with the graduation ceremony. It is proposed by the Senatus of Aberdeen University to revive this laudable practice, but to give it a wider application. While the Colleges are two the University is one. It seems specially fitting therefore that Bishop Elphinstone and the Earl Marischal should be commemorated together. It is further the desire of the Senatus that the occasion be used as a great opportunity for bringing together graduates and alumni of the University from different parts of the country, as well as those from foreign lands who happen to be at home on furlough. The Senatus, accordingly, has resolved to celebrate the Founders' Day this year in the beginning of April, at the time of the graduation ceremony. The arrangements, which are being carried out by a committee of Senatus, contemplate the following: (1) a dinner (not exceeding, in expense, 7*s.* 6*d.* per head), open to all graduates and alumni, to be held on the evening immediately preceding the graduation ceremony—viz., Monday, April 8th; (2) a commemoration service in the University Chapel, on Graduation Day, at 10 A.M.; (3) the graduation ceremony in the Mitchell Hall, Marischal College, at 12 o'clock noon; (4) an evening reception in the same hall and adjoining rooms by invitation of the Senatus. The committee will feel obliged if those intending to be present will intimate the same, as early as possible, to Mr. D. R. Thom, secretary to the Senatus.

Feb. 19th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Consultant Surgeons' Opinions on the War.

SIR WILLIAM THOMSON recently delivered a lecture at the Royal Dublin Society entitled "Dublin to Pretoria with the Irish Hospital." The lecture was very largely attended and evoked much interest. Sir William Thomson has kindly consented to repeat it at the Round Room, Rotunda, on Tuesday, Feb. 26th. Dr. Kendal Franks also recounted his experiences of the war at the annual meeting of the St. Patrick's Nurses' Home on Feb. 8th, when the chair was filled by his Grace the Archbishop, her Excellency the Countess Cadogan being present. As consulting surgeon to the forces in South Africa Dr. Franks furnished many interesting particulars about the war and strongly criticised the strictures of Mr. Burdett-Coutts on the hospital arrangements. He said that Lord Roberts on noticing them asked that a commission should be appointed at once to inquire into the matter. That commission included a set of men as entirely unprejudiced and impartial as it would be possible to obtain. The final paragraph of their report stated that there had been no breakdown in the hospital arrangements and that in no campaign had the sick and wounded been so well looked after. He thought that Mr. Burdett-Coutts's statements acquired more importance than they would otherwise have done from the fact that he bore a name which was synonymous with philanthropy, while, in fact, he "never moved a finger to relieve the sufferings he described." Dr. Franks went on to praise in strong terms the devotion and self-sacrifice of the medical men and nurses, whose conduct was, as he said, "simply splendid." His speech will well repay perusal and his allusions to the fortitude of the soldiers, reported in all the papers here, will be noted with interest and gratitude in a city and country where Dr. Franks made himself long ago well known and appreciated.

A Central Pathological Laboratory for Ireland.

In reference to the influential meeting and recommendation for a central pathological laboratory in connexion with the Lunatic Asylums of Ireland reported in THE LANCET of Feb. 9th it is satisfactory to note that the Dublin University Biological Association has proved active. In reply to a resolution, "That in the opinion of the Dublin University Biological Association it is desirable to establish a central laboratory for the Irish asylums devoted to the study of pathology in relation to nerves and mental disease," Sir D. Harrel, K.C.B., K.C.V.O., the under secretary to the Lord Lieutenant, by direction of His Excellency, wrote in acknowledgment of their letter and resolution.

Irish Memorial to the Queen.

A very large and representative meeting of the citizens of Dublin took place at the Mansion House on Feb. 17th, when a motion was proposed by the Lord Chief Justice and seconded by the Governor of the Bank of Ireland sympathising with the King on his irreparable loss by the death of the Queen. The motion was supported in eloquent speeches by Sir Christopher Nixon, the President of the

Royal College of Physicians of Ireland, and by Mr. T. Myles, President of the Royal College of Surgeons in Ireland.

Personation at Examinations.

A curious question has recently been referred to the Court for Crown Cases Reserved by Mr. Justice Kenny. A man was indicted at the Dublin Commission on Feb. 9th and charged with having fraudulently personated Robert F. Cooper at the preliminary examination of the Royal College of Physicians and Surgeons held on March 13th and 14th last. The jury found the accused guilty on the facts, but Mr. Bustie, K.C., raised the curious point that the prisoner has committed no offence known to the law. The case was then adjourned until the next Commission in April, and in the meantime the traverser was allowed to stand out on bail.

The Lurgan Workhouse Hospital.

As a result of an inquiry held by their inspector into certain charges preferred against nurses of the Lurgan Workhouse Hospital the Local Government Board have written to the guardians that in the particular case referred to (a child suffering from scarlet fever) Dr. J. S. Darling, the medical officer, was most attentive to the patient. They attribute any imperfection in the nursing and attendance to the fact that Dr. Darling's recommendations as to the strengthening of the medical and nursing staff were not adopted by the guardians. They say that neither of the nurses against whom complaints were made can, in the circumstances, be held responsible for any neglect or inattention. The Local Government Board say that the guardians do not appear to attach sufficient weight to the fact that the Lurgan Union Infirmary and fever hospitals are almost the only available hospitals for the ordinary surgical and medical cases of the important and increasing towns of Lurgan and Portadown, and therefore the requirements of an ordinary Poor-law infirmary and fever hospital are very far from being sufficient for the union of Lurgan. The guardians are accordingly requested to ask the medical officer to furnish a full report of what is requisite, in his opinion, for the adequate equipment of their infirmary and fever hospital, having regard to the important medical and surgical cases that are treated therein. Dr. Darling is to furnish his report to a committee and afterwards it is to be considered by a full meeting of the guardians.

Co. Down District Lunatic Asylum.

From a memorandum of the Government Inspector of Lunacy, Sir G. P. O'Farrell, I find he expresses approval of the treatment of the patients and of the general administration of the above institution. The medical officers are all warmly praised. The condition of the asylum as a whole must be considered very satisfactory, and as a proof that every care and economy were exercised in dealing with the funds of the institution it may be pointed out that notwithstanding the many improvements in the buildings and surroundings of the patients the actual capitation cost of maintenance is considerably less than it was 30 years ago.

Bazaar in the Students' Union, Queen's College, Belfast.

An entertainment took place in the Students' Union, Queen's College, Belfast, on Feb. 13th and 14th. It was organised and managed by the students, their aim being to get rid of a debt incurred in the working of the union. There were a bazaar and various side-shows and variety entertainments, and as a result the Students' Union is completely out of debt. It is hoped that with careful management further liabilities will not again occur. The union should be self-supporting.

Ulster Medical Society.

The fourth annual meeting of this society was held in the Museum, Belfast, on Feb. 14th, Professor W. H. Thompson, the President, being in the chair.—Dr. A. Fullerton showed a boy, aged six years, who, either as the result of injury received during his birth or from a subsequent epiphysitis had a Congenital Dislocation of the Right Hip. A radiogram of the affected parts was also shown.—Dr. Robert Campbell showed a child from whom two years previously he had Excised a very Large Occipital Cephalocele. A photograph of the original condition of the infant was also exhibited. Dr. Campbell also presented a radiogram of a case of Coxa Vara.—Dr. T. S. Kirk showed a Ruptured Kidney excised successfully from a boy in whom the accident occurred as the result of a fall from a ladder. He also gave a demonstration of a New Method of Wiring Oblique Fractures. By means of a rod of whalebone a piece of wire was slipped round the ends of the broken bone and tied in a clove-hitch.—Professor J. W. Byers showed two Ovarian Tumours successfully removed; one was a large unilocular cyst (which contained 12 pints of fluid) which simulated hydramnios, and the other was a very large universally adherent multilocular ovarian adenoma. The tumour had become so rotated that the part presenting when the peritoneal cavity was opened was the right broad ligament and tube covered with fresh lymph.—Dr. W. D. Donnan showed a Fœtus of an early date.—Professor J. A. Lindsay showed a specimen of Cancer of the Root of the Lungs. Professor J. A. Lindsay read a paper upon Rare Cases of Pulmonary Disease, including (1) three illustrative cases of malignant disease of the lungs (one with purulent infiltration, a second which simulated phthisis, and a third with very obscure physical signs); (2) a case of pyo-pneumothorax; (3) a case of bronchopleural fistula; (4) a case of plastic bronchitis; (5) a case of double pneumonia with delay of crisis to the twentieth day; and (6) a case of phthisis where signs and symptoms disappeared for seven years and then recurred.—In the subsequent discussion the following took part: Professor W. Whitla, Dr. P. Redfern, Dr. J. S. Morrow, Mr. R. Hall, Dr. R. W. Leslie, Dr. W. Calwell, Dr. D. M'Donnell, Professor Sinclair, and Professor Byers.

Curious Prosecution under the Public Health Act.

Last week the sanitary authority at Cork applied for an order at the police-court for the removal of the body of a child to the morgue and for its burial within three hours. The circumstances of the case were remarkable. The child had died a week previously and the body lay coffined in the room occupied by the mother who was ill. The father of the child is a soldier serving out in South Africa, and, despite the protestations of her friends, the unfortunate mother declined to allow their little one to be buried, and signified her intention to keep the coffin in the room till the father returned in order that he might have the satisfaction of seeing his dead child. The magistrates granted the order sought and the interment was duly carried out.

Feb. 19th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Small-pox in Paris.

ALTHOUGH the recent epidemic of small-pox in Paris, which was caused in the main by the influx of strangers for the Exhibition, is not such a general object of conversation as formerly, yet it must not be considered as being at an end. During the last week of January there were registered 12 deaths from small-pox, while 84 fresh cases were notified by the medical officer belonging to the health department of the Prefecture. These medical men are far from strict in notifying cases, for although such notifications may be useful they are afraid of displeasing fidgety patients. In the last week but one of January there were only six deaths notified. It is the duty of everyone to be revaccinated if it has not been already done, but now that the scare has passed people are getting very careless, and to escape this little operation they vie with one another in finding out reasons to show its uselessness. Among domestic servants, for instance, the objection is simply unreasoning pigheadedness; among masters and mistresses it either takes the form of smiling scepticism, or they say, "I was revaccinated so many years ago; I have had small-pox." At a meeting of the Academy of Medicine the venerable M. Hervieux opened an important debate on the question and showed very clearly that the matter of revaccination should be vigorously pushed, that the immunity conferred by a former revaccination lasts but for an uncertain period, and that even an attack of small-pox, contrary to the generally received opinion, is not an absolute protection. Certainly it is very uncommon to find persons who have had small-pox twice, but a certain number are known besides the classical instances such as that of the Milan hospital attendant who had four attacks. During an epidemic, in M. Hervieux's view, even those who have had small-pox should be vaccinated. While upon this point M. Hervieux thought it well to protest strongly against the popular and not altogether

disinterested opinion that the lymph supplied gratuitously by the Academy of Medicine and collected under special surveillance of a committee appointed for the purpose, was inert. M. Empis associated himself with this protest and expressed regret that the obloquy thrown upon the lymph of the Academy should have been echoed even in some medical journals. Speaking for himself he had performed 200 revaccinations with this lymph and had only failed in the case of certain adults doubtless because they were already immune from a previous vaccination. M. Kelsch declared that the value of a vaccine could not be estimated from one series of vaccinations, as success depended upon so many different factors. An identical vaccine taken at Val de Grâce had given in the hands of one operator 7 per cent. of successes and in the hands of another operator 50 per cent. Finally, on the motion of M. Colin the Academy decided to distribute a new appeal among the population of Paris to impress them with the urgent necessity of submitting to revaccination.

Tokelau.

M. Jeanselme has sent from Indo-China a very interesting report upon "tokelau," a disease of the skin peculiar to the East, which is widely spread and which is characterised in addition to itching and the formation of desquamating patches of a dirty-yellow colour, by the appearance of curious patterns of a geometrical regularity. These patterns take the shape of intersecting circles which cover the patient with all kinds of bizarre designs. Tokelau only grows on the naked skin and does not affect the hairy skin. According to M. Jeanselme the disease is due, not as was formerly supposed to a trychophytosis of the tinea imbricata type, but to an aspergillosis. There is an abundant mycelial network to be found in the scales of tokelau, producing sporiferous branches of a yellow colour which give rise to the pale-coloured patterns so characteristic of this disease.

"Stomatite Erucique."

At the recent meeting of the Society of Biology M. Artault gave an account of a curious form of stomatitis which he proposed to call "stomatite erucique," the origin of which had been hitherto unknown. It is, however, now known to be caused by eating fruits which have been in contact with the nests of certain caterpillars possessing an urticating property. The inflammation attacks the mucous membrane of the mouth, the lips, the gums, the cheeks, and the palate. The cause is the irritating hairs and secretions which the caterpillars leave in their nests. The disease, as a rule, attacks children who eat fruits which are taken into the mouth whole, such as cherries and gooseberries, and it is hardly ever seen except during the months of May and June, especially in dry years. A mouth-wash composed of tincture of "myrtille"[1] generally cures the complaint very easily.

Glycosuria and Dyspeptic Diabetes.

A very notable event was the reading of a paper before the Academy of Medicine by M. Albert Robin upon dyspeptic diabetes. The beautiful researches in applied clinical chemistry at which M. Robin has worked for so many years have upset all preconceived ideas in the pathogeny of gastric chemistry, in which department up to now the ideas of Germain Sée and of Bouchard have reigned supreme. The researches of M. Robin have made known to us a special form of glycosuria depending upon a reflex excitation of the liver by the arrival in the intestines of a very acid gastric product of digestion. This renders the biliary secretion much more active and increases the formation of sugar. What is very important is that this form of diabetes is absolutely curable, for as it depends upon a fault of digestion it suffices to get rid of this fault to cure glycosuria. Simple glycosuria is found in 5 per cent. of cases of hypersthenic dyspepsia. It takes an irregular form and is always slight, the quantity of sugar varying from 50 centigrammes to six grammes per litre; it is found in the urine of digestion but is absent from that of fasting, and sometimes it is found in company with the albuminuria of digestion. In these patients nutrition is marked by an exaggeration of exchanges, by a deficient assimilation of nitrogen, and by an over-excitement of the nervous system. The stomach is often distended, the liver hypertrophied, and there is also a condition of hyperchlorhydria. The patients suffer from vertigo, phosphaturia, and various skin affections, such as hyperidrosis. There are, in addition, affections of sight and hearing. Glycosuria may be either consecutive or previous to dyspepsia. This distinction is important, for dyspeptic diabetes can be cured by treating the dyspepsia, whereas ordinary diabetes resists all treatment. Diabetes is not a disease characterised by a slowness of nutrition, but rather by a too quick performance of nutrition and a hyperaction of the liver. Medicines which excite nutrition aggravate diabetes, while medicines which diminish nutrition improve the diabetes. Glycosuria always points to over-activity of the liver. It bears a definite relation to hypersthenic dyspepsia. Over-excitation of the liver, at first occasional, becomes permanent and so a real diabetes of gastric origin is set up. Dyspeptic glycosuria can be cured by treatment of the dyspepsia, the administration of alkalies after meals being generally sufficient. In more severe cases a strict milk diet is advisable, although this diet is harmful in cases of true diabetes. When dyspeptic diabetes is established the sugar in the diet must first be reduced and then the treatment of the dyspepsia undertaken.

Three New Hospitals.

The buildings and interior fittings of three new hospitals—respectively in the Rue Etex, the Rue Michel Bizot, and the Place Danube—are finished. The opening will take place about April 1st. The three hospitals are for sick children and will take the place of the old Trousseau Hospital in the Faubourg Saint-Antoine. The one in the Rue Etex is the Bretonneau Hospital and will contain 60 medical beds, 74 surgical beds, 84 beds for infectious cases, and 16 beds for cases in which the diagnosis is uncertain. The members of the staff are Dr. Seveste, Dr. Josias, and Dr. Felizet. The building in the Rue Michel Bizot is the new Trousseau Hospital. The beds are allotted as in the Bretonneau Hospital, with the exception that those for doubtful cases will number 19 instead of 16. The staff are Dr. Netter, Dr. Louis Guinon, and Dr. Kirmisson. The third building, in the Place Danube, is the new Herold Hospital, the staff of which are Dr. Barbier, Dr. Jeanselme, and Dr. Albarran. Here there are 56 medical beds, 64 surgical beds, 84 beds for infectious cases, and 16 beds for doubtful cases. All three buildings are erected and fitted according to the very latest demands of modern hygiene. Although not strictly speaking a new hospital I may mention that the Hertford Hospital has just been formally reopened. Founded in 1871 by the late Sir Richard Wallace it was for many years under the management of a committee appointed by him. In 1891 he offered it to the British Government and at the same time promised to endow it. His death took place before the transfer could be carried out. Lady Wallace, however, carried out her husband's wishes and provided the necessary endowment. The transfer was formally effected last year and a committee was appointed for its management. This committee considered it necessary that the building should be repaired and altered in order to bring it up to modern sanitary requirements, and it was accordingly closed in August, 1900. The opening took place on Feb. 18th, the Hon. Michael Herbert (chairman of the committee) and Mr. H. Austin Lee (of the British Embassy) receiving the guests on behalf of the Ambassador, Sir E. Monson, who was unfortunately prevented by illness from being present.

Feb. 19th.

[1] Myrtille is the vaccinium myrtillus or blaeberry, not the common myrtle which is "myrte."

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

The Blind in Switzerland

STATISTICS on the blind are few and far between in this country and therefore the report which Dr. Laurenz Paly of Entlebuch publishes on the subject is of value. The number in 1895 amounted to 2107 persons, of whom 1783 had undergone a medical examination; in 1870 the number was 2032, or a percentage of 0·072 of the population, compared with a percentage of 0·076 in 1895. The comparative number of males and females were 52·6 to 47·4 in 1895. Dr. Paly divides the blind into the four following classes (I put the percentage in parentheses): (1) Visus = 0, absolute amaurosis (57·7 per cent.); (2) visus = $\frac{1}{6}$, distinguishing light and darkness (24·2 per cent.); (3) able to count fingers at 0·3 metre or about one English foot (10·4 per cent.); and (4) able to count fingers at one metre (5·1 per cent.). In 2·4 per cent. the examination failed to give the necessary details. In a percentage of 6·8 of the cases

blindness was congenital, in 93·2 it was acquired. Of these, 66·9 per cent. could be referred to primary disease of the eye, 12·7 per cent. to traumatic influences, and 13·5 per cent. to general diseases.

The Therapeutics of Urotropine.

Dr. F. Suter of Basle reports on his experiences with urotropine, which was originally recommended by Nicolaier for vesical catarrh. It is an antiseptic compound produced by the action of formaldehyde on ammonia; it is easily soluble in water and ought to be taken on an empty stomach, as the acid reaction of the stomach decomposes it rapidly, when part is absorbed and part excreted in the urine. It slowly decomposes in the bladder only in urine of acid reaction, not in neutral or alkaline. It decomposes perhaps more rapidly in the kidneys, as it acts very promptly in cases of alkaline decomposition of the contents of the bladder. Five or 10 milligrammes of formaldehyde have the same action on three ounces of urine as half a gramme of urotropine, and yet experiments and clinical use prove its antiseptic action even in these small doses. The action on different bacteria varies but a little; bacilli coli communis and streptococci seem most resistant. Dr. Suter made experiments with the following medicines administered at night whilst the urine passed first in the morning was examined: benzoic acid 10 grains, boric acid 15 grains, salol 15 grains and 45 grains, and urotropine 15 grains. The development of decomposition was retarded by several days only by the strong dose of salol and by urotropine. Its efficacy being thus proved its high cost is to be regretted, for this limits its exhibition. It is to be recommended in cases of surgical interference (even catheterism); in bacteriuria, especially after enteric fever, where it occurs in from 20 to 30 per cent. of all cases; and in cystitis, as an aid to local treatment, which often is necessary. It is of little value in pyonephritis, gonorrhœal cystitis, or tuberculosis of the kidney; it is no panacea for all cases of cystitis, but acts best in ammonia decomposition. It should also be used in disease of the prostate gland with residuary urine and cases of stricture with partial retention, where it is a decided improvement on salol. Doses of from 15 to 25 grains per diem can be given for weeks in succession. Such are Dr. Suter's conclusions.

Attendance at Swiss Universities.

The number of medical students is decidedly on the increase without any obvious reason in the way of demand. The number of medical students for the winter term 1900–1901 amounts to 1375, thus distributed among the separate universities: Basle 145, Bern 388, Geneva 357, Lausanne 183, and Zürich 302. The number of women studying medicine in Switzerland has greatly increased, especially of foreign women. Of these the Russian female students are the most numerous, comprising 47 per cent. of the whole. Only 21 are of Swiss nationality.

Zürich, Feb. 13th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

The Death of the Queen.

WHEN the news arrived in Canada that the Queen was no more it came to the medical colleges in the midst of lectures which were immediately stopped. On the afternoon of Feb 2nd a students' parade took place in Montreal from McGill College to the Queen's statue, headed by four students bearing on their shoulders a large cushion of natural carnations in the form of the Star of the Order of the Garter which was deposited at the feet of the statue. The entire medical faculty accompanied them.

Blindness decreasing in Ontario.

The annual reports upon the Ontario Institutions for the education of the Deat and Dumb at Belleville and of the Blind at Brantford have just been published. They cover the year ending Sept. 30th, 1900. At the Institution for the Deaf and Dumb the number of pupils in attendance was 152 males and 130 females, a total of 282, which is about the average in recent years. Since the establishment of this institution 30 years ago 1187 children have been treated. At the Institution for the Blind there were 113 pupils in attendance, 61 males and 52 females, which number was less than for the preceding year. Referring to the causes which led to the decrease Principal Dymond attributed it to the eye infirmary attached to almost every hospital in the province, thus affording a means of easy and inexpensive relief. He thinks that the eyesight of one-fourth of the young people under his charge might have been saved had prompt precautions been taken in infancy and treatment by a skilled oculist been then secured at one of these infirmaries. Greater watchfulness on the part of the immigration officials is also a contributing feature to the decrease.

New Scholarship at Queen's College, Kingston.

The medical faculty of Queen's College have decided to found a new scholarship in medicine in commemoration of Dr. Fife Fowler, dean of the faculty, who recently retired from the professorship of medicine and who for more than 46 years has been in active work in the service of the college. This scholarship will be known as the Dean Fowler Scholarship, and the sum of $10 000 will be immediately raised amongst the graduates of Queen's College throughout the United States and Canada. The medical faculty have already amongst themselves contributed a good sum. In addition to this the faculty are further raising amongst themselves $10,000, which will be expended in enlarging and extending the medical buildings of Queen's College. To this sum no outsider will be asked to contribute.

The late Dr. C. W. Purdy.

Canada and Queen's have recently lost a distinguished son by the death of Dr. Charles W. Purdy, a well-known authority on uranalysis and urinary diagnosis. He was born at Collins Bay, Frontenac County, Ontario, on June 18th, 1846. His literary course was taken out at Victoria College, then situated at Coburg, and his medical degree was received from Queen's in 1866. He practised in the county of Hastings for a year when he moved to Chicago. His alma mater conferred upon him a Fellowship and the degree of LL.D.

The Death-rate of Montreal for 1900.

There were 7351 deaths in Montreal in the year 1900. This was the largest number which has been recorded since 1885, when 7825 deaths occurred; but since that year the city has taken a big leap in population. In 1885 the death-rate per 1000 was 4691 and in 1900 it was 25·47. In other recent years the rate was as follows:—1894, 27·27; 1895, 24·81; 1896, 21·92; 1897, 22·48; 1898, 20·66; and 1899, 24·51.

The Victorian Order of Nurses.

The executive council of the board of governors of the Victorian Order of Nurses recently met in the city of Ottawa, Her Excellency the Countess of Minto and the Countess of Antrim being present. Miss McLeod, the superintendent, presented her monthly report. In Montreal four of the six nurses had been on duty during the month of December and 43 patients had been attended by them. They paid 570 visits and received $98 in fees. At present there are 38 nurses in the Victorian Order in Canada. They have to serve six months on trial before being finally accepted and they receive $15 per month for that time.

The Medical Alliance of America.

Something over a year ago an organisation with the above title secured a charter from the Dominion Government, and at once proceeded to exploit the profession of medicine in Montreal and elsewhere. When the alliance was seeking powers from the Canadian Parliament its methods and its purposes received pretty severe criticism in the pages of the *Montreal Medical Journal*, but for some reason or other this was not followed up by any of the other medical journals in Canada, so that when the agents of the alliance some few weeks ago commenced operations in the city of Toronto their name was quite new to the medical profession there. The objects of this alliance are to insure people against medical bills, to insure practitioners against bad accounts, and to insure financial profit to the company. Medical men and the laity are solicited to become members of the alliance at the rate of 15 cents a month, or a man with a family can become a member at the rate of 10 cents per month per member of family. At the end of 10 years the member of the alliance is handed back all the money he has paid into it, and during all that time he has had his medical attendance for nothing. The advantage to the physician of becoming a member of this alliance, from the standpoint of the company, is that the company will pay his bills and that he will have no more bad debts to collect.

The alliance is receiving the cold shoulder from the medical profession in Toronto.

Royal Victoria Hospital, Montreal.

The governors of the Royal Victoria Hospital held their annual meeting in the last week of January. The superintendent's report showed that during the year 1900 there had been 2619 patients admitted to the hospital. Of these 1469 were free patients, 741 were public ward patients at 50 cents per day, and 409 were private patients. The death-rate for the year had been 4·95 per cent., or if those dying within 48 hours after admission be deducted, 3·83 per cent. The total cost per day per patient was $1.47 as against $1.55 in 1899. The income for the year was $129,570.34, while the ordinary expenditure amounted to $99,208.62, leaving a balance of $30,361 72 which will be applied towards the cost of the new out-patient department.

Hospital for Sick Children, Toronto.

The report of this institution for the year ending Sept. 30th, 1900, shows that the hospital has cared for over 40,000 sick children of the province during the past 25 years and that the debt of $19,000 has almost entirely disappeared. The daily average of patients in the previous year was 101; during the past year it has been 111. During the past year 5776 patients have been treated. Of these 767 were in-patients, an increase of 97 over 1899, and 5009 were out-patients, an increase of 734 over the previous year. On Toronto island, overlooking Lake Ontario, is what might be called the summer residence of this institution. It is known as the Lakeside Home for Little Children and is a well-equipped sanatorium with accommodation for 150 children and 20 nurses.

Toronto, Feb. 9th.

Obituary.

MAX VON PETTENKOFER.

(FROM OUR BERLIN CORRESPONDENT.)

PROFESSOR VON PETTENKOFER, the founder of scientific hygiene, and one of the veterans of medical science in Germany, died in Munich on Feb. 10th. The circumstances of his decease were very tragic, for he committed suicide while in a state of mental depression induced by dread of losing his reason. He had reached an advanced age, being born in 1818 at Lichtenheim in Bavaria. He completed the curricula both of a chemical and also of a medical student at Munich, receiving the diploma of a chemist and the degree of M.D. from that university. He was in course of time appointed assistant chemist to the Royal Mint at Munich and while holding this position made a series of researches both in theoretical and practical chemistry. As early as 1850 he turned his attention to hygienic questions, a subject which attracted him on account of the amount of illness existing in Munich, which was formerly one of the most unhealthy towns, not only of Germany, but of the whole continent. Enteric fever was prevalent there nearly the whole year round and cholera, when appearing in Munich, was of the most malignant character. He made enteric fever his special study and discovered that there was a definite connexion between this disease and the subsoil water. According to his theory enteric fever became prevalent when the subsoil water was low. This theory he maintained for a long time, till the new bacteriological era in hygiene, inaugurated by the researches of Professor Koch and his disciples, began; although he was fully aware of the great importance of bacteriology in hygienic questions he could never be convinced that pathogenic bacteria were the only causes of epidemic diseases and that the object of hygiene was to get rid of them. In the beginning of the bacteriological era the hygienists of Germany were really divided into two different parties, the Pettenkofer school and the Koch school; in course of time a compromise took place between the "contagionists" and the "localists" as it was recognised that the two theories were not contradictory. It may be remembered that Professor von Pettenkofer in order to prove the innocuousness of bacteria went so far as to swallow a culture of cholera bacilli. His health did not suffer and it is now known under what circumstances this experiment may be safely performed and that it is quite inconclusive as evidence that these bacteria are harmless. At the time, however, it was believed to be a valuable argument against Professor Koch's theory. Professor von Pettenkofer took care that his researches should bear fruit in a practical sense by leading to hygienic improvements in Munich. By his advice sewers were constructed and the water-supply was regulated in so satisfactory a manner that Munich is at present one of the healthiest towns in Germany. The malignant form of enteric fever formerly so characteristic of Munich has disappeared and the sporadic cases which occur are neither more numerous nor more severe than elsewhere. In addition to his work on enteric fever Professor von Pettenkofer made numerous researches on ventilation and heating, on the chemical and physical qualities of the soil, on food, and on respiration. His researches on the phenomena of respiration were of fundamental importance. He worked at them in conjunction with Professor Voit by the aid of a special apparatus which was a gift from the late King of Bavaria and which enabled experiments to be made on the human subject. He was the first who introduced exact scientific methods into hygienic questions and who treated hygiene from an experimental point of view. It was through him that hygiene has been raised in public opinion to an equality with the older branches of medicine and that the State authorities have given it practical recognition by appointing professors of hygiene in every university of Germany. Although some of his views have been superseded by more recent researches he will ever be regarded as the leader of the modern developments of hygiene. The announcement of his melancholy death has therefore caused great sorrow, and the newspapers are unanimous in expressing the opinion that in him Germany has lost one of the greatest of her sons.

BARON ALFRED RUGG, L.R.C.P. LOND., M.R.C.S. ENG.

BY the death of Mr. Baron Alfred Rugg on Feb. 11th Wood-green has sustained a serious loss. Of handsome and distinguished presence Mr. Rugg was a well-known figure in the district and enjoyed the esteem and confidence both of his professional colleagues and of the public.

His medical education was received at University College. In 1868 he took the diploma of M.R.C.S. Eng. and in 1869 that of L.R.C.P. Lond., after which he acted as medical officer at Bournemouth General Dispensary and at Earlswood Asylum. He joined the late Mr. Basil Ringrose as a partner in 1875, and since that date his life was spent in Wood-green, a place which has developed from a picturesque village into a populous suburb of North London. Mr. Rugg was surgeon to the Oddfellows and Foresters and to the Great Northern Railway; he was on the staff of the Wood-green Cottage Hospital and acted as medical referee to several insurance societies. He died at the age of 53 years from pleurisy and pneumonia after only a few days' illness and was buried at Paddington Cemetery.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Ritter von Hochberger, who was the *doyen* of Carlsbad physicians, having attained the age of 92 years. He was, however, able only two years ago to take an active part in a medical congress.—Dr Johann Natterer, a Vienna medical practitioner, whose scientific work in the domain of experimental physics—e.g., the liquefaction of gases—was of a quite uncommon order for a man engaged in active medical practice. He was 80 years of age.—Dr. Victor Pashutin, Professor of Pathology in the St. Petersburg Military Medical Academy. His researches on the physiology of the nervous system and on medical chemistry, together with his text-book on general pathology, marked him as a worthy representative of Russian medical science. He was 55 years of age.

HEALTH OF TORQUAY.—Mr. P. Q. Karkeek, the medical officer of health of Torquay, in his annual report for 1900 states that the birth-rate was 15·5 per 1000 and the death-rate was 13·6 per 1000. There were 29 deaths from cancer. During the year 40 cases had been admitted to the sanatorium for infectious diseases. Mr. Karkeek reports that places where ice-creams were manufactured had been inspected and improvements made, and he adds that, speaking generally, the manufacture of penny ices is not carried on under satisfactory conditions.

Medical News.

UNIVERSITY OF LONDON.—At the Intermediate Examination in Medicine held in January the following candidates were successful:—

ENTIRE EXAMINATION.

First Division.—Olive Muriel Elgood, London School of Medicine for Women; Archibald M. Henry Gray, University College; Leonard Gregory Parsons, University of Birmingham; and John Bart Rous, St. Mary's Hospital.

Second Division.—Edwin Lancelot Ash, St. Mary's Hospital; Gerald Eade Bellamy, Charing-cross Hospital; William Brown Clark, King's College; Helen Mary Collen, London School of Medicine for Women; Ernest Harold Drinkwater, University College, Liverpool; John Ferguson, St. Bartholomew's Hospital; Peter Gifford Foulkes, Middlesex Hospital; Jessie Josephine Francis, London School of Medicine for Women; A. Augustus Russell Green, University of Birmingham; Harold Axel Haig and Geoffrey Seccombe Hett, University College; Bernard Higham, St. Thomas's Hospital; William Algernon Louis Holland, University of Birmingham; Richard Holtby, St. Bartholomew's Hospital; Catherine Mary Ironside, London School of Medicine and Royal Free Hospital; Cecil Lionel Lakin, Charing-cross Hospital; Jessie Lamb, London School of Medicine and Royal Free Hospital; Charles Hugh Latham, St. Thomas's Hospital; Norman Macfadyen, St. Bartholomew's Hospital; James Alexander Milne, London Hospital; Clifford Arthur Moore, University College, Bristol; James Cecil Mottram, University College; Percy Alfred Peall, Guy's Hospital; Kate Anne Platt, London School of Medicine and Royal Free Hospital; Ireton George Pritchard, King's College; Charles Michael Roberts, St. Thomas's Hospital; Frank Herbert Rotherham, Cooke's School of Anatomy and Charing-cross and London Hospitals; Charles Russ, St. Mary's Hospital; Francis William Schofield, Owens College and Manchester Royal Infirmary; Henry Gates Sievwright, University College, Cardiff; Herbert Douglas Smart, Guy's Hospital; Annie Broomhall Thin, London School of Medicine, King's College, and Birkbeck Institution; Asa Claude Ali van Buren, St. Bartholomew's Hospital, King's College, and Cooke's School of Anatomy; Hugh Watts, Guy's Hospital; and Ada Miles Whitlock, London School of Medicine and Royal Free Hospital.

EXCLUDING PHYSIOLOGY.

Second Division.—Alice Marian Benham, London School of Medicine for Women; Christian Constance Bernard, London School of Medicine and Royal Free Hospital; Margaret Lucy A. Boileau, London School of Medicine for Women; Percy Charles Bushnell, St. Thomas's Hospital; William Henchman Cole and Charles Henry Dawe, Guy's Hospital; Mabel Emily Gates, London School of Medicine and Royal Free Hospital; George Francis Innes Harkness, University College; William Charles Frederick Harland, St. Bartholomew's Hospital; Bernard Hart, University College; Horace Bryden Hill, St. Bartholomew's Hospital; William Stanley Hughes, University College, Cardiff; Henry Arthur Kellond-Knight, St. Bartholomew's Hospital; Kate Knowles, London School of Medicine for Women; Anthony Richard Neligan, St. Bartholomew's Hospital; John Jekyll Rainforth, London Hospital; Charles Chapman Rushton, Owens and University Colleges; Isabel Gertrude Sexton, London School of Medicine and Royal Free Hospital; John Kendall Syms, University College; and Margaret Cordelia Vivian, London School of Medicine and Royal Free Hospital.

PHYSIOLOGY ONLY.

First Division.—Ernest William Charles Bradfield, St. Mary's Hospital; Desborough Brodie, St. George's Hospital; Anne Fenton Cleaver, London School of Medicine and Royal Free Hospital; Philip Claude Tresilian Davy, University College; John Jones, London Hospital; Beatrice Mary Kidd, London School of Medicine for Women; Edward Bertram Smith, St. Bartholomew's Hospital; Emily Gertrude Stuart, London School of Medicine and Royal Free Hospital; Robert James Waugh and Edward Colston Williams, St. Bartholomew's Hospital; and Henrietta Leila D. Williams, London School of Medicine for Women.

Second Division.—George Cuthbert Adeney, St. Thomas's Hospital; Walter Ball, Westminster Hospital; Jeannette Rachel De Pass and Ruby Ellen Glanville, London School of Medicine for Women; Herbert Myer Goldstein, Guy's Hospital; Ida Margaret Guillaume, London School of Medicine and King's College; Herbert Stanley Jones, Guy's Hospital; William Wilson Nock, Mason University College; Charles Derwent Pye-Smith, Guy's Hospital; John Noel Sergeant, St. Thomas's Hospital; Herbert Bartlett Simpson and Malcolm William Stewart Smith, University College; James Batson Stephens, St. Mary's Hospital; Ernest William Strange, Guy's Hospital; Robert A. Slater Sunderland, St. Bartholomew's Hospital; Louisa Graham Thacker, London School of Medicine and Royal Free Hospital; Edith Eleanor Tucker, London School of Medicine for Women; Frederick Robert Elliston Wright, St. Thomas's Hospital; and Walter Perceval Yetts, St. Bartholomew's Hospital.

N.B.—The foregoing list, published for the convenience of candidates, is provisional only, and is not final until the reports of the examiners shall have been confirmed by the Senate.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen passed the first examination of the board at the January meeting of the examiners in the subjects indicated:—

Chemistry.—Edward Bailey Aylward, Parwatiprarad Vishvanath Bratt, and Rowland Alessandro Bowling, St. Bartholomew's Hospital; Bertram Frend Bartlett, University College, London; Arthur Ellis Blythman, University College, Sheffield; John Bryan and Francis Garland Collins, London Hospital; Laurence Henry Burner, Guy's Hospital; William Cook, Mason University College, Birmingham; Clifford Pendrill Charles and Percival Alfred Dingle, St. Bartholomew's Hospital; Frederick Spencer Davies, St. Thomas's Hospital; Alfred Dinnis and Harold William Farebrother, Charing Cross Hospital; Richard Vernon Favell, William Reginald Favell, and William Edward Lindsey Fowler, St. Bartholomew's Hospital; Ira Rose Fearn, Guy's Hospital; George Edward Ferguson and Frederick William Hobbs, St. Mary's Hospital; William James Fletcher, Owens College, Manchester; Hector Lionel Howell, Charing Cross Hospital; Alfred John Hopkinson Iles, St. Thomas's Hospital; Robert Rutson James, St. George's Hospital; James Charles Robert Lind, University College, London; Cecil Henry Gustav Luxmoore, St. Mary's Hospital; Malcolm Leckie, Rowland Phillip Lewis, and John Orrett Musson, Guy's Hospital; Walter Gerald Loughborough and James Eustace Radclyffe McDonagh, St. Bartholomew's Hospital; Douglas Catterall Leyland Orton; Owens College, Manchester, and the Municipal Technical School, Oldham; Benjamin James Phillips, Surgeons' Hall, Edinburgh, and University College of South Wales, Cardiff; Walter Reeve and Edwin Walter Routley, Guy's Hospital; Arthur George Lawrence Reade, Charing Cross Hospital; Hubert George Rickman, St. Mary's Hospital; Stuart MacKenzie Saunders, Science, Art, and Technical School, Plymouth; George Henry Sedgwick and Edward Sutcliffe, Yorkshire College, Leeds; Harold Sigismund Sington and George Theodore Stephens, St. Thomas's Hospital; Harry Ernest Thomas, London Hospital; Samuel Hilton Tinsley, St. Mary's Hospital; Joseph Frederick Trewby, Birkbeck Institute; Frederick Weber and Cyril Oswald Oxford Williams, St. Bartholomew's Hospital; Alfred Gurth Whitaker, Charing Cross Hospital; and William Wynne Williams, King's College, London.

Practical Pharmacy.—John Howard Addinsell, University College, Liverpool, and King's College, London; Edward Guy Anthonisz and Edward Leslie Bartlett, St. Mary's Hospital; Algernon James Beadel, Guy's Hospital; Frank Elliott Bolton, University College, London; John Bryan, London Hospital; Arthur Henley Bloxsome and George Elliott Cathcart, St. Bartholomew's Hospital; Frederick John Cutler, private study; Harold Clapham and Arthur George Cole, St. Mary's Hospital; Robert Harry Lucas Cordner and Edward William Dewey, St. George's Hospital; George De La Cour, University College, London; Reginald Inglis Douglas, St. Bartholomew's Hospital; John Freeman Douse, Guy's Hospital; Bertram Joseph Eccles, Mason University College, Birmingham; Charles Horace Fagan, St. George's Hospital; William James Gifford Gayton and Jonathan Grogono, London Hospital; Robert Gray Gillies, private study; Edward James Gaffney and George Sullivan Clifford Hayes, Guy's Hospital; Frederick Harold Hand, St. George's and St. Mary's Hospitals; William John Hogg, Queen's College, Belfast; Geoffrey Wallace Grainger Hughes, King's College, London; Samuel Clifford Hayman, Herbert James, and William John Jones, University College, Bristol; William Percival Ker, Guy's Hospital; James Malcolm King, Surgeons' Hall, Edinburgh, and University College, London; Francis Courtenay Lambert and Nelson Low, St. Mary's Hospital; Thomas George Miles and Percy Frank Minett, Guy's Hospital; Eric Stewart Marshall and Charles Vere Nicoll, St. Bartholomew's Hospital; Leonard Newsom Morris, University College, Bristol; George Smyth Oades, University College, Bristol, and Charing Cross Hospital; Arthur Carr Osburn, Guy's Hospital; Vining Gedney Joseph Paul and David Phillips, St. Mary's Hospital; Arthur Francis Reardon, St. Thomas's Hospital; Vivian Ernest Ridewood, London Hospital; Ernest Edward Semmence, Surgeons' Hall, Edinburgh, and St. Thomas's Hospital; Arthur Walrond Soper, Guy's Hospital; Harold Foster Strickland, Charing Cross Hospital; Tom Timothy, University College of South Wales, Cardiff; Oswald Henry Vevers, London Hospital; Charles Visger, University College, London; Ernest Walker and Charles Murray Woods, Charing Cross Hospital; John Walker, St. Thomas's Hospital; Theophilus Ralph Waltenberg, Owens College, Manchester; George Hope Warren, King's College, London; Walter John Weston, St. George's Hospital; and Frederick Ernest Wilson, Guy's Hospital and University College, London.

Materia Medica.—John Evans, Cambridge University and St. George's Hospital; Laurence Galsworthy, St. Bartholomew's Hospital; Edward Green, King's College, London; Edwin Walter Routley, Guy's Hospital; and Francis John Russell, London Hospital.

Elementary Biology.—Hugh William Acton, Middlesex Hospital; James Elrick Adler, London Hospital; Arthur Keith Armstrong, St. Bartholomew's Hospital; Edward Leicester Atkinson, St. Thomas's Hospital; Stanley Bott, Wyggeston School, Leicester; Cuthbert Garrard Browne, Westminster Hospital; John Bryan, London Hospital; John Bramley Ball, Laurence Henry Burner, Walter Henry Skardon Burney, Alfred Hollier Clough, and Vincent Ackroyd Palliser Costobadie, Guy's Hospital; Emil Christofferson, University College, Bristol; Vivian Colmer, London Hospital; Charles Arthur Frederick Cresswell, University College, London; Arthur Hubert Davis, St. George's Hospital; George Edward Fritche, Middlesex Hospital; Wilfrid Enos George, London Hospital; Stanley Rider Gibbs, St. Thomas's Hospital; Thomas Reginald Harvey, Guy's Hospital; William John Lennox, Merchant Venturers' Technical College, Bristol; William Sherwood Livock and Arthur Harkness Macdonald, London Hospital; John Eustace Radclyffe McDonagh, St. Bartholomew's Hospital; Arthur Llewelyn Morgan, Frederick Morres, and Henley Hamlyn Moyle, Guy's Hospital; Oswald Sinclair Norton, City of London College; Armstrong Smith, Middlesex Hospital; John Edwin Scales and Lionel Duncan Stamp, Guy's Hospital; John Ronald Rigden Trist, St. Bartholomew's Hospital; Oswald Henry Vevers, London Hospital; Alfred Gurth Whitaker, Charing Cross Hospital; Ernest White, Guy's Hospital; and Everard Lister Wright, St. Bartholomew's Hospital.

THE ST. PANCRAS LUNACY SCANDAL.—It will be remembered that an inquiry was opened by the Local Government Board on July 10th, 1900, concerning certain irregularities which had taken place with regard to the certification and transfer of lunatics. The inquiry was

adjourned on July 12th, but the Local Government Board issued a circular letter which was practically a kind of interim judgment, in which they said that they considered the practice which they knew to exist of relieving officers receiving payments from parish medical officers and proprietors of licensed houses for the reception of lunatics in connexion with the reception of lunatics was indefensible. The Local Government Board have now sent a communication to the St. Pancras Guardians saying that the Local Government Board have decided to allow the incriminated officers to continue in office, but they request that the officers in question may be informed of the Board's grave displeasure at their conduct. Should there be any ground of complaint against them in future with regard to any other matter their present offence will be taken into account. These observations do not apply to Dr. Walter Smith or to Mr. Murphy. The whole case seems to the Board to show the need for increased care in the administration of the Lunacy Acts in certain particulars, and communications are in progress with the Secretary of State and he Lunacy Commissioners upon the subject.

ROYAL ORTHOPÆDIC HOSPITAL.—The annual court of the Royal Orthopædic Hospital, 297, Oxford-street, was held on Feb. 18th in the board-room of the hospital, about 20 governors attending, with Mr. H. H. Marks in the chair. The report of the committee of management was adopted and a resolution was passed confirming a previous resolution giving the committee full power to sell the present site and buy another. Efforts are being made to find a new site in accordance with the recommendation of the Council of the Prince of Wales's Hospital Fund for London. The meeting lasted for two hours and was remarkable for extreme freedom of speech. Considering the heated nature of some of the remarks indulged in by those interested in the welfare of the hospital it is difficult to understand how the deputy chairman, Mr. Ernest Flowers, M.P., could affirm that the work had gone on very smoothly, successfully, and harmoniously.—Mr. H. A. Reeves, one of the surgeons of the hospital, speaking for the surgical staff, roundly declared that if he were chairman he would not sign the report and stigmatised as illegal the resolution giving the committee full power to sell the present site of the hospital valued at £45,000 and to buy another. The paragraph in the report referring to the Prince of Wales's Hospital Fund was, in Mr. Reeves's opinion, simply throwing dust in the eyes of the ignorant public.—Discussing the committee's plans to remove the hospital into the heart of London, Mr G. Barham declared it was one of the maddest schemes in the world, the very maddest he had ever heard.—Dr. D. Walsh said that as it was decided to rebuild the hospital he would like to know if the position of architect to the hospital was to be an honorary post in the future or not.—The Chairman said he did not see how the question arose, but Dr. Walsh insisted on a clear answer to his question. Mr. Flowers said that it was an indecent thing that the point should be called in question by the governors and he resented it most strongly.—Dr. Walsh, however, wanted an assurance in regard to the future architectural charges, whereupon Mr. Flowers said that the architect would never receive a sixpence. He was followed by Mr. Reeves, who said that the question of recompense had cropped up and as the labourer was worthy of his hire it had been considered that if the architect would leave it to the committee he should have an honorarium. The architect at this point entered the room and after the circumstance had been explained to him declared that his post was an honorary one. The proceedings went along fairly quietly for the next few minutes till Mr. Reeves again caused commotion by saying that the committee had made no real effort for the hospital for 25 years. Something, he said, must be done and he proposed raising money for the hospital on the "mutual principle." The explanation of what this meant was difficult to follow, but it somehow led Mr. Reeves to declare that Mr. Marks (the chairman) had said that he would lend £5000 to the hospital, upon which the Chairman remarked that Mr. Reeves's statement was incorrect and his memory defective. It was some time before the meeting got to business again, Mr. Marks saying that he refused to change his chairman's seat into a witness-box for his own cross-examination. Here one of the governors of the hospital said that as the committee had made no effort he thought Mr. Reeves's plan should be considered. The honorary treasurer, Mr. R. B. Martin, M.P., thereupon went into the scheme in detail with Mr. Reeves, but finally the whole matter was ruled out of order by the Chairman. Everything went on again quietly till Mr. Flowers in again discussing the question of removing to another site referred to what he called the painful and contemptible attack on their architect. This naturally brought up Dr. Walsh who vigorously protested against this language and improved the occasion by pointing out that Moorfields Hospital had removed to another site after selling their valuable freehold property with the result that they had plunged themselves into financial ruin.

A PRESCRIBING DRUGGIST.—An inquest was held at Worle, Somerset, on Feb. 11th, upon the body of a man, aged 42 years. The deceased had complained of a sore-throat and consulted a druggist who gave him some medicine. The same night he was seized with a choking sensation in his throat and expired before a medical man arrived. A post-mortem examination showed that death was due to suffocation caused by an abscess discharging into the air-passages.

CARDIFF INFIRMARY.—The management committee of the Cardiff Infirmary has decided that under no circumstances, either of urgency or otherwise, shall surgical instruments belonging to the infirmary be taken away from the institution. This decision has been arrived at in consequence of some members of the staff having borrowed certain instruments and retained them for an unreasonable and unnecessary length of time.

ON the closing of his private military hospital at the Gables, Surbiton, Sir Alfred Cooper has given the bedsteads, bedding, and other requisite articles to St. Thomas's Hospital, as an acknowledgment of the assistance rendered to the sick and wounded soldiers by the medical and surgical staff of that institution.

OVERCROWDING IN KENSINGTON.—This borough council has decided to authorise the medical officer of health to employ *pro tem.* six sanitary inspectors, to inspect the most densely inhabited streets in the borough, and procure the fullest and best information on the question of overcrowding.

BRITISH MEDICAL ASSOCIATION: THE CHELTENHAM MEETING.—A meeting convened by the Mayor was held at Cheltenham a few days ago to take preliminary steps in preparation for the meeting of the British Medical Association in Cheltenham next summer. The Mayor read letters of apology and support from several gentlemen, including Mr. J. T. Agg-Gardner, M.P., who promised a subscription of 10 guineas and asked for approval of the steps which he had already taken in opening a fund for extending hospitality and entertainment to the expected guests.—Dr. Ferguson mentioned that the suggestion that the meeting should be held in Cheltenham had been made from headquarters without solicitation on the part of the district branch. It was 64 years since the association had visited Cheltenham. The members in the Gloucestershire district numbered about 100 and they had already subscribed £500.—Dr. Cardew said, so far as the general programme had been settled, it was as follows—viz., Tuesday, service in St. Matthew's Church, attended by the corporation in state and the members in their robes, followed by the address of the President-elect (Dr. Ferguson) in the Princess Hall, Ladies College; Wednesday, professional discussions; Thursday, further professional work, followed by a public dinner and soirée; Friday, concluding meetings, visit to Gloucester, and other trips; and Saturday, excursions.—Mr. Levy Wood asked whether steps would be taken to bring the Cheltenham waters before the medical profession, and Mr. F. J. Bennett, as a member of the Baths Committee, replied that steps were being taken to have them made up in a palatable aerated form.—The Mayor mentioned that there need be no fear of the town not rising to the occasion. As the time approached it would probably be found difficult to get in the engagements. Colonel Rogers had promised a reception at Battledown Court, a delightful spot for such a gathering, and on Wednesday the day would be given up to civic hospitality. On some other day the Freemasons of Cheltenham and Gloucester would like to offer some hospitality to members of their great brotherhood in the profession.—Dr. E. T. Wilson, in proposing a vote of thanks to the Mayor, expressed the hope that the visit would break down the prejudice which some medical men had against Cheltenham and prove to them that it was not so relaxing as they had supposed.—The meeting then closed.

UNIVERSITY OF CAMBRIDGE.—At the congregation on Feb. 14th the following degrees were conferred:—M.D.: E. S. Verdon, Jesus, and A. J. Collis, Selwyn Hostel. M.B.: F. A. Bainbridge, Trinity. M.B. and B.C.: F. C. Shrubsall, Clare, and A. Emerson, Gonville and Caius.

MR. RALPH STONEY, Colonial Surgeon, has been transferred from the British East Africa Protectorate to the Uganda Protectorate. Having passed the required examination in the Hindustani language he has received the Government grant of £50.

PRESENTATIONS TO MEDICAL MEN.—On Wednesday evening, Feb. 6th, at Wrenbury, Nantwich, a deputation of the members of Court "Wrenbury," No. 769, A.O.F., waited upon Mr. W. Thomson, their late medical officer, and presented him in the name of the Court with a silver salver bearing the following inscription: "Presented to Wm. Thomson, Esq., L.R.C.P. Edin., by the members of Court 'Wrenbury,' 769, A.O.F., in recognition of his services as medical officer during a period of 50 years. Dec. 31st, 1900." Tenure of office during such a lengthened number of years must surely be almost unique in the history of friendly societies, and shows the sympathy existing between the members and their late surgeon.—Mr. Robert Reynolds, M.R.C.S. Eng., of Steeple Bumpstead, Essex, has been the recipient of a testimonial on retiring from his practice—namely, a cheque and an illuminated album. The latter is richly bound and bears the following inscription:—"This album, with 472 names of subscribers appended, together with the sum of fifty-five guineas, was presented to Robert Reynolds, Esq., M.R.C.S., &c., at a public dinner held in the parish of Steeple Bumpstead, Essex, on the 14th day of February, 1901, as a token and expression of the esteem and goodwill for him after 42 years' residence and practice in this parish and neighbourhood by his many friends resident in the following parishes: Steeple Bumpstead, Helions Bumpstead, Birdbrook, Hempstead, Ridgewell, Stambourne, Sturmer, and Cornish Hall End."—At Gunnislake, Cornwall, on Feb. 7th the members of the class of the Callington branch of the St. John Ambulance Association presented Mr. Albert Bowhay, L.R.C.P. Lond., M.R.C.S. Eng., L.S.A., D.P.H. Camb., with a dressing-case as a mark of appreciation for his services as lecturer.—The members of the St. Austell (Cornwall) branch of the St. John Ambulance Association on Feb. 11th presented Mr. C. W. Seccombe, L.R.C.P. Lond., M.R.C.S. Eng., with "Osler's Practice of Medicine" as a mark of appreciation for his services as honorary lecturer.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Opening of the Session.

THE King opened in person and with full State ceremonial his first Parliament on Thursday, Feb. 14th. His Majesty, accompanied by Queen Alexandra, drove in state through the streets from Buckingham Palace to the Royal entrance of the House of Lords where he was met by the Chief Ministers of State and various functionaries of the Court. A procession was then formed which marched through the Royal gallery to the throne at the far end of the House of Lords. His Majesty, in presence of Lords and Commons, took the declaration required by the Bill of Rights with regard to the doctrine of transubstantiation and the saying of masses, and having signed the document recited with his own voice the terms of the Royal message to Parliament. Many Members of the House of Lords can only make themselves imperfectly heard owing to the bad acoustic properties of the chamber, but His Majesty, speaking with strong and clear voice and careful emphasis, was clearly heard even at the back of the most distant gallery.

The King's Speech.

There were few points of special interest to the medical profession in the Speech from the Throne. Reference was made to the climatic difficulties met with and overcome by the expedition under Sir James Willcocks in Ashanti and to the suffering and mortality caused by the prolonged drought in India, and nine subjects of prospective legislation were mentioned. Three of these subjects were mentioned without qualification, but the others had attached to them the always-significant observation that they will be dealt with in the course of the session "if the time at your disposal shall prove to be adequate." Among the subjects qualified in this way were the Amendment and Consolidation of the Factory and Workshops Acts, the Better Administration of the Law respecting Lunatics, the Amendment of the Public-Health Acts with regard to Water-supply, and the Prevention of Drunkenness in Licensed Houses and Public Places.

The Midwives Bill.

Early in each session private Members with Bills to introduce engage in a ballot for places for the discussion of these Bills on second reading. The Member who draws the paper marked "No. 1" gets the first choice of place for the measure in which he is interested, he who draws "No. 2" the second, and so on down the list. This ballot took place on Monday, Feb. 18th, and the promoters of the Midwives Bill drew no better figure than "38," this figure being drawn by Mr. Bond, the Member for East Nottingham. On the following day a large number of private Members' Bills were introduced, but the Midwives Bill was not among them.

HOUSE OF COMMONS.

FRIDAY, FEB. 15TH.

Introduction of a Medical Member.

Dr. EDWARD CHARLES THOMPSON, the successor of the late Mr. Macalese in the representation of North Monaghan, was introduced by Captain Donelan and Mr. Patrick O'Brien and took his seat.

Arsenic in Beer.

Mr. CHAPLIN in the course of the debate on the Address raised this question and discussed the action of the Local Government Board in regard to the Manchester epidemic. He argued that the case against arsenic in beer as the cause of this epidemic had been proved and that what was wanted was action rather than further inquiry. There were various methods, he said, by which the matter might be dealt with. The Government might prohibit the use of substitutes altogether, they might limit the prohibition to sugars which had been proved to be injurious, they might restrict the use of these sugars within such limits as would be safe, they might discourage their use by a higher duty on the beer in the production of which sugar was used, or they might charge the duty on the materials instead of on the product. He pronounced no opinion on these proposals. If the Government were not prepared for any of these methods they might by a short Act of Parliament require that when substitutes were used the fact should be declared to the customers. Mr. Chaplin then referred to the communication of Professor Tunnicliffe and Dr. Otto Rosenheim[1] to THE LANCET on the subject of the presence of selenium in brewing sugar and beer. This, he said, was a new terror and it would appear to be quite beyond the scope of the reference to Lord Kelvin's Commission.—Sir CUTHBERT QUILTER spoke in the same sense and made an urgent appeal to the Government to take immediate action.—Mr. WALTER LONG, President of the Local Government Board, defended the action of his department in relation to the Manchester epidemic, and with regard to the general question he insisted that there must be further inquiry. An epidemic of this kind, he said, opened up new fields of inquiry and of knowledge, and this made it his duty to see not only that everything was done that could be done under the law as it stood, not only that all possible information was given to those who were locally responsible for the protection of public health, but also that every inquiry was made that was likely to throw new light on the subject, in order, if necessary, to take any fresh legisiative action that might be taken on the solid basis of ascertained fact. He submitted to the House that, in the present state of their knowledge, there could not be given by those eminent scientific and medical men on whom the Local Government Board relied that clean bill of health which would surely be an absolute condition before it would be possible to exclude everything else and leave the manufacture of beer to one article alone. There was no desire in the appointment of a Royal Commission to delay a proper review of the question. He personally had done his best to get outside advice and opinion as to the course that should be followed, and so far he had not found one eminent scientific man of the opinion that they were wrong in the course they were adopting. With all the goodwill in the world he did not think it would be possible for any man in his position or for any Government to have taken a line other than that which had now been taken.

The South African Hospitals Commission.

Later in the evening three speeches were delivered with regard to the report of the South African Hospitals Commission and the general question of the care and treatment of the sick and wounded during the campaign in South Africa. Mr. BRODRICK, Secretary of State for War, sat in the House at the time, and no doubt he will take an opportunity of replying to the speeches.—Sir WALTER FOSTER repeated his statement that a great deal of the disease that had occurred was preventable. Typhoid fever, he said, must have been foreseen and proper precautions ought to have been taken against it. At the commencement of the war he suggested to the Government that they ought to send out some special corps or body of men to deal with the sanitation of camps and other places where soldiers were congregated, and the War Office having got the opinion of their Director-General decided that these matters might safely be left in the hands of the Army Medical Department. This decision, arrived at on Nov. 9th, 1899, had been absolutely contravened by the report of the Hospitals Commission, where the War Office were recommended to appoint properly qualified officers of the Royal Army Medical Corps to undertake sanitary duties. He therefore wished to know what steps it was proposed to take to carry out this recommendation. With regard to the report generally Sir W. Foster said there was a good deal of whitewashing attempted by the commissioners. The whitewash, however, was not sufficient to extend over the wide surface that had to be covered, and here and there it was so extremely thin that one could see the lurid facts betraying themselves under the coating with which the commissioners had tried to cover them. He believed that the Secretary of State was desirous of meeting the difficulties which had overtaken the Army Medical Service and of making the department better manned and more fit for its duties. This, however, should be done in a spirit of thorough reform. Splendid efforts had been made by private generosity, but he did not think we ought to rely in the future upon

[1] THE LANCET, Feb. 9th, 1901, p. 434.

private generosity in these matters. The taxpayers in this country were willing to find money in millions to make their army efficient and to protect the health of the men and we ought not to rely in the future on private effort coming to our aid. We ought not to rely, either, too much on civil surgeons to supplement the deficiency of the Royal Army Medical Corps, but we ought to equip our army just as thoroughly in the matter of medical service as we ought to do in the matter of artillery. He would, therefore, ask the right hon. gentleman in his reply to give the House some assurance that he would deal with this matter from top to bottom in a thorough spirit.—Mr. W. MURRAY GUTHRIE, the member for Bow and Bromley, who spent many months in South Africa and who gave evidence as to his experiences before the Commission, next addressed the House. He had no doubt, he said, that at first the Government were as ignorant as the country as to the true state of things at Bloemfontein. He remembered the surprise caused at Bloemfontein by the speeches of Sir William Mac Cormac and Mr. Treves in London. The former said that it would not be possible to have anything more complete or better arranged than the medical service in this war. Mr. Treves endorsed those words and went out of his way, if he might say so, to insult a body of women in South Africa, some of whom were perhaps very much in the way in Cape Town, but many of whom were doing service to their country. He did not think their patriotism was any less than that of Mr. Treves. When the celebrated letter of the hon. member for Westminster (Mr. Burdett-Coutts) was published he believed it came like a bombshell to the English people. Then came a debate in the House when the Government promised to appoint a Commission, and he was sorry that they did not consult some of the opposing faction with a view to allowing them to nominate one member to represent their views on the Commission. He was certain that the Government had the intention of getting at the truth of the matter, and he thought that they had made a mistake in not taking that course. If he had had time he would have liked to analyse a good deal of the evidence given before the Commission. He thought he would be able to show that, instead of credence being attached to the evidence given by civilians, more credence was attached to evidence given by the officers of the very branch of the service which was practically on its trial. There was the case of the men at Bloemfontein station. He had been an eye-witness of the events which the hon. Member for Westminster had recorded. In the report of the Commission not only was his story discredited but the story of the very man who was responsible for the mistake occurring was taken for gospel. The Commission also believed Colonel Hexham's story as against that told by the surgeon of the Irish Hospital. The Commissioners in their report stated that the detention of the invalids at the railway station had not occurred often. But one of the witnesses, Captain Lawrence, a railway staff officer, asked whether there were many occasions on which men were kept waiting for a long time at the railway station, replied that he was sorry to say it was of constant occurrence. He suggested that the new committee which would probably be appointed to inquire into the army medical service should not be a departmental committee but a committee of wider scope, having on it some representatives of those civilians who had taken part in hospital work, so that the country should not have to depend entirely for evidence on the Army Medical Service Corps.—Mr. BURDETT-COUTTS, the third speaker, asserted that the inquiry of the Commission had not been conducted in a way calculated to elicit the whole truth and that the defects of the Army Medical Department had been concealed and buried in the lame and impotent conclusions of the report.

MONDAY, FEB. 18TH.

Enteric Fever among the Troops in South Africa.

Mr. BRODRICK, in answer to a question addressed to him by Sir WALTER FOSTER, gave the following approximate figures with regard to enteric fever among the troops in South Africa during the last three months of 1900—viz., October, 568 cases, 98 deaths; November, 1213 cases, 207 deaths; December, 1665 cases, 286 deaths. The total number of cases from the beginning of the war to December, 1900, was 19,101 and of deaths 4233. The number of officers and men invalided for enteric fever who had arrived in England from the beginning of the war to December, 1900, was 10,975.

Lead Poisoning in the Potteries.

Mr. RITCHIE, answering a question on this subject by Sir CHARLES DILKE, said: I am aware that in the months of July, August, October, and December, 1900 (but not in April or in any other month), the reported cases of plumbism in the industry of china and earthenware making were more numerous than in the corresponding months of 1899, the totals being 71 and 50 respectively. But the net result for the year as a whole was a reduction from 249 in 1899 to 200 in 1900, and this has followed upon a previous large reduction between 1898 and 1899. I a few days ago formally proposed a set of new rules to the manufacturers, following in the main the draft issued in August last, but containing certain amendments which appeared to me necessary and reasonable. I might have proposed the rules in this form some time ago, but I have been in negotiation with the representatives of the manufacturers in hope of arriving at a settlement and avoiding arbitration, and I have found them ready to accept with a few slight modifications most of my proposals. On the proposed "standard of insolubility," however, a serious difference of opinion arose between the Government chemist and the manufacturers' expert advisers, and I have come to the conclusion that this difference should be settled by arbitration. There are also certain points on which I am anxious that the workpeople should have an opportunity of stating their views before they are finally settled, and these will be dealt with on the arbitration, at which the workpeople are entitled to be represented.

Proposed State Inebriate Reformatory.

Mr. RITCHIE, in reply to Mr. HOBHOUSE, said that he had received numerous representations from county authorities urging the establishment of a State Inebriate Reformatory. He himself was anxious to see such a reformatory established and he was now in communication with the Treasury on the subject.

TUESDAY, FEB. 19TH.

The Government and the Army Medical Service: Statement by Mr. Brodrick.

Mr. BRODRICK took an opportunity at this sitting during the debate on the Address to reply to the speeches made on Friday with regard to the medical provision in South Africa and the report of Lord Justice Romer's Commission. Great blame, he said, had been thrown on the Army Medical Department and he did not suggest that this department had not many things to answer for, but in considering the mistakes of the department they must bear in mind the part which the House of Commons had had in bringing about the present state of things. Mr. Brodrick recalled that when nearly 14 years ago the late Lord Randolph Churchill carried on his crusade against public expenditure the Army Medical Department was severely criticised. He remembered a strong speech of the Member for Wolverhampton (Sir Henry Fowler) in which he said that there were too many doctors and that the department wanted overhauling, for it cost too large an amount of public money, and the report of the Committee appointed at the time bore out this belief. This Committee, after two years' investigation at the War Office, decided that there were too many doctors and that they were too highly paid, with a too high proportion of retired pay, and that the whole subject required revision. By this the War Office had ever since been influenced. In the House of Commons successive Ministers had laid it down that we must provide for three army corps at home and two abroad, and upon this the arrangements of the Army Medical Department had been made. Could they wonder, then, that when we came to send the equivalent of six army corps to South Africa the medical arrangements should be somewhat strained? Difficulties arose that were not foreseen in sending supplies along lines of communication longer than had ever been necessary in a continental war. The War Department in the matter of medical officers had for the last 14 years been between the upper millstone of a Parliament determined to keep down expenditure and the lower millstone of the medical profession, who denied their best candidates except upon better terms. The War Office did all it could to get better men, but the heads of the profession declared that medical men must have military rank, without which they could not hold up their heads among their military colleagues. He remembered that it was even urged that beyond the titles of "major" and "colonel" the title of "general" should be open to them. Five years ago Lord Lansdowne was assured that unless the title of "general"—not "surgeon-general"—were given other proposals would be useless. But not to trouble the House at length he would sum up what the experience of the war had shown. Mr. Brodrick then said: It has shown, in the first place, that these military titles have not altogether had the best effect. In the second place, the Commission of able, independent men, who whatever we may say of their conclusions certainly held no brief for the Government, have shown in their report that there has been no general disposition on the part of the Army Medical Department to shirk its duties, and that there has been great devotion shown among the medical men. If in some cases there have been defects of organisation and skill, that organisation can be reformed, and want of skill has been due to the fact that officers have been so hardly worked that they have not had proper opportunities of studying their profession. It has been said by the hon. gentleman opposite (Sir W. Foster) that we have not realised the importance of a suggestion that came from himself—that sanitary committees should be sent out to direct sanitary arrangements for the various camps. I think the experience of the war has shown that a committee of that character, or something like it, would have done good service. And, while knowing as I do the devotion to duty of the great mass of medical officers of the Royal Army Medical Corps, I cannot deny that it has been brought out in the course of these inquiries that there was a certain amount of professional jealousy and indisposition to avail themselves of outside assistance in an emergency, and perhaps too much of that red-tape disposition which is supposed to pursue the army in all its courses, which I, at all events, desire to see removed to a great extent. And in this respect let me say that so far from regarding those who have interested themselves in these matters, both here and in South Africa, with any suspicion I thank them for their attempts; I believe that they have been largely productive of good to the public service; and I believe that we may found on the recommendations of the Commission, and on the extraneous assistance we have received, partly from members of this House, a new and satisfactory system, but one which can only be brought about by a drastic reform of the Army Medical Service. But in the emergency as it now exists we cannot pretend to make a complete reform in a few weeks; we are bound to look at this question very carefully, and we are determined to call to our assistance the heads of the medical profession. It may be that by making our terms of enlistment more elastic, it may be that by making them more attractive in other ways, we can obtain a better class of men. All I would say is this, that if the House will give us a little confidence in this matter I will undertake that no effort shall be wanting, that there is no experience we can get but shall be turned to account, and that no past prejudices shall be allowed to intervene or prevent our giving the army in the future an effective medical service.

Dr. FARQUHARSON at a later period of the sitting congratulated Mr. Brodrick on the tone of his speech.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

ALLAN, FRANCIS J., M.D., D.P.H., F.R.S.E., has been appointed Medical Officer of Health for the City of Westminster.

BERRY, A. E., M.D. Lond., L.R.C.P., M.R.C.S., has been appointed Medical Officer of Health, Burton-upon-Irwell Rural District, vice H. Knowles, deceased.

BLACKETT, EDWARD JOS., M.R.C.S., L.R.C.P., has been appointed Surgeon to the Hospital of St. John and St. Elizabeth, 20, Grove-end-road, St. John's Wood, London, N.W.

BOND, W. A., M.D., D.P.H. Camb., M.R.C.P. Lond., has been re-appointed Medical Officer of Health by the Holborn Borough Council.

BREARS, C. F., M.D., C.M. McGill Univ., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed District Medical Officer by the Sunderland Board of Guardians.

BUIST, J. J., M.B. Lond., has been appointed a Police Surgeon for the A, Central Division, Borough of Cardiff.

BULLEID, ARTHUR, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Health by the Midsomer Norton (Somerset) Urban District Council, vice A. Hastings Whicher, resigned.

COOMBS, WELLESLEY, F.R.C.S. Edin., has been appointed Honorary Anæsthetist to the Worcester General Infirmary.

FOTHERBY, H. A., L.R.C.P. Lond., M.R.C.S., D.P.H. Cantab., has been appointed Clinical Assistant to the Infirmary, Parish of St. Matthew, Bethnal-green, London.

FRYER, WM. F., L.R.C.P., L.R.C.S. Edin., has been appointed District Medical Officer for the whole Ipswich Union.

GOUGH, H. E., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Workhouse, Northwich Union, vice T. Moreton, resigned.

JONES, A. L., M.B., C.M. Edin., has been appointed Medical Officer of Health, Oystermouth Urban District, vice J. I. Bevan, deceased.

KELSON, W. H., M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the London Throat Hospital.

LALL, C. C., M.B., C.M. Edin., has been appointed Asssistant Resident Medical Officer to the Infirmary, Salford Union, vice C. H. Woodcock, resigned.

LANE, G. J., M.D. Dub., has been appointed District Medical Officer, Bicester Union, vice E. V. Hemingway, resigned.

LOVELESS, W. K., L.R.C.P., L.R.C.S. Edin., has been appointed a District Medical Officer by the Stockbridge Rural District Council.

MCGAVIN, L. H., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Hospital for Women, Soho square, London, W.C.

MACKLIN, THOMAS THORNTON, M.D. Glasg., L.F.P.S. Glasg., D.P.H. Cantab., J.P., has been appointed to the Medical Charge of Troops at St. Mary's, Scilly Islands.

MOORE, THOMAS, M.R.C.S., has been appointed Medical Officer of Health, Hazel Grove and Bramhall Urban District.

NICHOLLS, A. R., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health for the Langport Rural District, vice J. Morgan, resigned.

OLIVEY, J. M. A., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Third and Fifth Districts, Poole Union, vice H. W. Scratchley.

PHILLPOT, G. F., L.R.C.P. Edin., M.R.C.S., has been appointed District Medical Officer, Bromsgrove Union, vice J. L. Hobbs, deceased.

PITTARD, M., M.R.C.S., has been appointed a Palice Surgeon for the B, Grangetown, Division, Borough of Cardiff.

TREHARNE, J. L., M.R.C.S., has been appointed a Police Surgeon for the C, Roath, Division, Borough of Cardiff.

URQUHART, A., M.B., Ch.B. Aberd., D.P.H., has been appointed District Medical Officer, Staines Union, vice G. R. Symons, deceased.

WILLAN, L. J., M.R.C.S., has been appointed District Medical Officer, Dorking Union, vice J. D. Rawlings, resigned.

Errata.—In our issues of Feb. 9th and 16th in the "Appointments" column, "Allen, F. J.," should read Allan, F. J., M.D. Edin., D.P.H. Camb., F.R.S.E.; and "Annis, E. G.," should read appointed Medical Officer of Health for the Borough of Greenwich.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BELGRAVE HOSPITAL FOR CHILDREN, Gloucester-street, S.W.—House Surgeon for six months. Gratuity £5, with board and lodging.

BOROUGH HOSPITAL, BIRKENHEAD.—Senior and also Junior Resident House Surgeon. Salary £100 and £80 respectively per annum, with board and washing.

BOROUGH HOSPITAL, Bootle, Liverpool.—Senior Resident. Salary £100 per annum, with board, &c.

CENTRAL LONDON SICK ASYLUM DISTRICT.—First and Assistant Medical Officers and Dispensers. Salary for the First Assistant Medical Officer £100 per annum, and of the Second £75 per annum, each with board and residence.

CHORLTON-UPON-MEDLOCK DISPENSARY.—Resident House Surgeon, unmarried. Salary £130 a year, with furnished rooms and attendance.

CITY OF SHEFFIELD.—Assistant Resident Medical Officer for Infectious Diseases Hospitals. Salary £150 per annum, with board, lodging, and attendance.

COUNTY OF LANARK DISTRICTS OF THE LOWER AND MIDDLE WARDS.—Resident Physician for Lightburn Joint Hospital for Infectious Diseases, Shettleston, near Glasgow. Salary £130 per annum, with board, &c.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Surgeon. Board, residence, &c., and honorarium of £25 after completion of six months' approved service. Also Casualty Medical Officer for six months, renewable. Salary at the rate of £100 per annum.

EYE AND EAR INFIRMARY, Liverpool.—House Surgeon. Salary £80, with residence and maintenance.

FARRINGDON GENERAL DISPENSARY AND LYING-IN CHARITY, Holborn, E.C.—Honorary Physician Accoucheur.

GENERAL INFIRMARY, Gloucester, and GLOUCESTERSHIRE EYE INSTITUTION.—House Surgeoncy. Salary £100 per annum, with board, residence, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—Two House Physicians, unmarried, for six months and nine months respectively. Salary £20, with board and residence in the hospital.

HULL ROYAL INFIRMARY.—Junior Assistant House Surgeon. Salary £40, with board and lodging.

ISLANDS OF SANDAY AND NORTH RONALDSHAY.—Resident Medical Officer. Salary £80 per annum, with dwelling-house, offices, garden, and ten acres of ground, subject to annual rent of £22.

KING'S COLLEGE HOSPITAL, Lincoln's Inn-fields, W.C.—Clinical Pathologist.

LIVERPOOL INFIRMARY FOR CHILDREN, Myrtle-street.—House Surgeon. Salary £85 per annum, with board and lodging. Also Assistant House Surgeon for six months. Salary £25, with board and lodging.

LIVERPOOL STANLEY HOSPITAL.—Senior House Surgeon. Salary £80 per annum, with board, residence, and washing.

LONDON HOSPITAL MEDICAL COLLEGE.—Assistant Demonstrator of Anatomy. Salary £90 a year.

NORTHERN NIGERIA, WEST AFRICA.—Medical Officers, unmarried, aged 25 to 35 preferred. Salary £400 per annum and local allowance of 5*s.* per day during residence.

NORTH RIDING ASYLUM, Clifton, York.—Assistant Medical Officer, not more than 30 years of age. Salary commencing at £125, rising to £175, and £10 in lieu of liquor, with board, lodging, washing, and attendance.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Salary £140 per annum, all found except board.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Physician. Salary £100, with board, lodging, and washing. Also Assistant House Surgeon. Salary £100 per annum, with board, lodging, and washing.

ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN, Dyke-road, Brighton.—House Surgeon. Salary £80, with board, lodging, and washing.

ROYAL BOSCOMBE AND WEST HANTS HOSPITAL, Bournemouth.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

ROYAL HOSPITAL FOR SICK CHILDREN, Glasgow.—House Physician. Salary £50, with board and washing.

ROYAL INFIRMARY, Sheffield.—Junior Assistant House Surgeon. Salary £70 per annum, with board, lodging, and washing.

ROYAL SEA BATHING HOSPITAL, Margate.—Assistant Resident Surgeon. Salary £60 per annum, with board and residence.

SHEFFIELD ROYAL INFIRMARY.—House Surgeon. Salary £120 per annum, with board, lodging, and washing, with an advance of £10 for the second and third years.

SOUTHPORT INFIRMARY.—Resident Senior House Surgeon. Salary £80 per annum, all found.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary at the rate of £24 per annum, with board, washing, and residence.

STOKE-UPON-TRENT UNION.—Medical Officer. Salary £200 per annum, with board, washing, and furnished apartments at the hospital.

ST. BARTHOLOMEW'S HOSPITAL.—Ophthalmic Surgeon.

ST. MARY'S HOSPITAL, Paddington, W.—Casualty Physician. Salary £75.

SUFFOLK GENERAL HOSPITAL.—House Surgeon. Salary £100 a year, with board, lodging, and washing.

TOWNSHIP OF TOXTETH PARK, Liverpool.—Assistant Medical Officer of the Workhouse and Infirmary. Salary £100 per annum, with board, washing, and apartments.

URBAN DISTRICT COUNCIL OF BARNES.—Medical Officer of Health and Superintendent of Isolation Hospital. Salary £150 per annum.

WARNEFORD HOSPITAL, Leamington.—House Surgeon. Salary £100 per annum, with board, washing, and apartments.

WARNEFORD ASYLUM, Oxford.—Assistant Medical Officer, unmarried. Salary £100 a year, with board, lodging, and washing.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House Surgeon. Salary £50 per annum, with board, lodgings, washing, and attendance.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician and House Surgeon for six months. Board and lodging provided.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House Physician for six months. Honorarium at the rate of £75 per annum and board, lodging, and washing.

Births, Marriages, and Deaths.

BIRTHS.

BOOBBYER.—On Feb. 19th, at 56, Burns-street, Nottingham, the wife of Philip Boobbyer,, M.B., of a son.

EVELYN.—On Feb. 11th, at Micklegate, York, the wife of William A. Evelyn, M.D., of a son.

FARNFIELD.—On Feb. 14th, at Mere, Wilts, the wife of William Walter Farnfield, M.R.C.S., L.R.C.P. Lond., of a daughter.

LOWE.—On Feb. 15th, at Horninglow-street, Burton-on-Trent, the wife of Walter G. Lowe, M.D., of a daughter.

LUFF.—On Feb. 17th, at 31, Weymouth-street, W., the wife of Arthur P. Luff, M.D., F.R.C.P., of a son.

MURRELL.—On Feb. 14th, at Blenheim Lodge, London-road, Reading, the wife of G. F. Murrell, M.B. Lond., of a daughter.

MARRIAGES.

LACKIE—EVANS.—At Felinfoel parish church, on Feb. 14th, by the Rev. J. W. Roberts, M.A., assisted by the Rev. David Davies, M.A., vicar of Llangennech, James Lamond Lackie, M.D., F.R.C.P.E., to Elizabeth Hilda, youngest daughter of David Evans, D.L., of Llangennech Park, Carmarthenshire. At home, 1, Randolph-crescent, Edinburgh, March 13th and 14th.

WINDLE—NAZER.—On Feb. 14th, at the Church of S. Catherine of Siena, Birmingham, Bertram C. A. Windle, M.D. D.Sc., F.R.S., Professor of Anatomy in the University of Birmingham, to Edith Mary, daughter of O. Nazer of Ashford.

DEATHS.

COOK.—On Feb. 16th, after three days' illness, Mabel Cook, the esteemed and valued matron of the British Lying-in Hospital, Endell-street, London, W.C., aged 31 years.

WEBSTER.—On Feb. 16th, suddenly, at his residence, Duppas-hill, Croydon, Geo. Leonard Webster, M.R.C.S., aged 40 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

A QUACK AT PONTEFRACT: WISE WORDS FROM A CORONER.

AN inquest was recently held at Pontefract to inquire into the circumstances attending the death of a young woman named Elizabeth Prince, aged 19 years, who had up to a few days previous to her death enjoyed good health and followed her usual employment at certain liquorice works. When the girl was taken ill a herbalist named Tempest was called in, who treated her for "head complaint." The mother told the coroner that she thought Tempest was a fully qualified man or she would not have had him but would have called the medical officer of the club. A neighbour had told her that Tempest had said that he could give a death certificate if required. She asked for a death certificate when her daughter died, and Tempest said that he would send it, but witness heard no more until the police called. Tempest was at her house twice on the day that the deceased died, and though he was there at 2.30, and she died at four o'clock, he did not say that she was worse or that she was likely to die.—The registrar of births and deaths said that, acting upon instructions previously received from the coroner, he had refused to accept Tempest's certificate of death and had acquainted the coroner with the facts of the case.—The medical man who made a post-mortem examination of the body said that everything was normal except the left lung. Death was due to inflammation of that lung. There was nothing at all to indicate that there had been any "head complaint."—In answer to the foreman witness said that life was so uncertain that he could not definitely say that the girl would have recovered if she had been attended by a qualified medical practitioner: she would certainly have had a better chance. He considered it dangerous to the public welfare that these so-called doctors should be in practice. In summing up the coroner (Mr. Maitland) said that whenever he came across a case in which these quacks were concerned he would inquire carefully into it and if necessary go to the furthest extreme. He had already had one inquiry where Tempest had given a certificate of death, but here he seemed to have been on the wrong tack altogether, treating the deceased for "head complaint," whereas it had been proved that her head was all right and that she had died from inflammation of the lung. Had a proper medical man been called in in the first instance it was probable that the girl would have been still alive. Tempest had clearly held himself out as duly qualified, for they had it in evidence that he had told a Mrs. Boothman that he was so and that if required he could give a death certificate. It certainly seemed to him that the matter had reached a stage when the General Medical Council might take the case up again as they had done once previously. He did not think that these quacks should be allowed to go up and down the country and he thought that their employment was only due to ignorance. The jury returned a verdict that the woman had died from inflammation of the left lung, the foreman adding that the jury wished to condemn those of the public who engaged such unqualified quacks.

THE REMOVAL OF DEEP SUTURES.

To the Editors of THE LANCET.

SIRS,—All surgeons and nearly all general practitioners are well aware that the removal of deep sutures causes a considerable amount of pain to the patient and calls for the exercise of an appreciable amount of force on the part of the operator. Especially is this the case after operations for the repair of a ruptured perineum, or after immediate suture of deep lacerations of that structure. All trouble of this kind can be avoided by the very simple plan of cutting the stitches on one day and withdrawing them the next. Anyone doing this for the first time will be surprised to find how easily and painlessly they come out, and the reason for this will be apparent on a moment's consideration.

I am, Sirs, yours faithfully,

Wylam-on-Tyne, Feb. 18th, 1901. W. H. BISHOP.

*** The method advocated by our correspondent is fairly well known, but its value is worthy of a wider recognition, as it does much to relieve patients who often appear to dread the removal of stitches more than they dreaded the operation itself.—ED. L.

THE DISCRETION OF A CORONER.

To the Editors of THE LANCET.

SIRS,—Will you kindly give me your opinion on the following facts. A child, 18 months old, whom I have never seen before, was brought to my surgery one evening about 8.30 P.M. in a moribund condition, deeply cyanotic, with abdominal breathing. I found on inquiry that the child had been ill a fortnight but had no medical attendance whatever. On examination there was complete dulness on the right side as far as the clavicle. I diagnosed an empyema and told the mother that the child had not long to live. It died at 11 P.M. the same evening. I refused a certificate. The facts were laid before the coroner and he refused to hold an inquest. Kindly say (1) if you consider I was not justified in refusing a certificate, which I did on the grounds that I had not attended the deceased in its last illness, and that I was not aware of the cause of the empyema, both of which facts I should have had to certify, and (2) has the coroner arbitrary power of this nature to override a medical opinion and take the case right out of a medical man's hands?

I am, Sirs, yours faithfully,

Feb. 17th, 1901. J. M.

*** A coroner decides, as the result of preliminary inquiry, whether it is necessary to hold an inquest into the cause of a death. If he is satisfied that a death is natural he need not hold the inquest. He is not bound to be clear about the pathology of the case. In the circumstances narrated by our correspondent we are surprised that no inquest was held.—ED. L.

"THE CASE OF MR. JOSEPH HENDERSON MARTIN."

To the Editors of THE LANCET.

SIRS,—Since my letter in THE LANCET of Feb. 9th, p. 443, I have received the additional subscriptions which I here acknowledge, and these have been forwarded to Mrs. Martin. Her gratitude for this timely help from known and unknown friends is unbounded. Only those who have found themselves absolutely destitute and with five young children dependent on them, and who have then received assistance from totally unexpected sources, can realise the feeling of thankfulness and encouragement which these generous gifts have brought to this poor lady in her affliction.

I am, Sirs, yours faithfully,

Chester-le-street, Feb. 19th, 1901. H. LYON SMITH.

	£	s.	d.
Amount previously acknowledged in THE LANCET	28	0	0

	£	s.	d.
THE LANCET Relief Fund (second gift)	10	0	0
Mr. Charles Coates (Bath)	5	5	0
Dr. R. Craik (Conisbro)	5	0	0

"MEMORIAL TO THE LATE DR. ARCHIBALD HAMILTON JACOB."

THE following contributions to this memorial fund have been received or promised. Cheques and postal orders should be made payable to the honorary treasurers (Sir Charles A. Cameron, C.B., 51, Pembroke-road, Dublin, and Mr. L. H. Ormsby, 92, Merrion-square, Dublin), and crossed "Ulster Bank." The honorary secretary is Mr. George F. Blake, J.P., Registrar of the Royal College of Surgeons in Ireland:—

	£	s.	d.
Subscriptions already announced in THE LANCET	136	10	0
Mr. Arthur E. Barker	5	5	0
Mr. G. H. Broadbent ...	5	5	0
Dr. William J. Smyly	5	5	0
Dr. Charles Fitzgerald	5	5	0
Mr. Henry Sewill (per Mr. A. A. Tindall) ...	5	5	0
A. B. C. (per Mr. A. A. Tindall)	5	5	0
Mr. Edward C. Healey	5	5	0
X. Y. Z. (per Mr. A. A. Tindall)	5	0	0
Mr. I. Usher	5	0	0
Dr. Wm. D. Hemphill	5	0	0
Sir William Findlater, D.L.	3	3	0
Dr. Henry H. Head ...	3	0	0
Dr. H. W. Oulton... ...	2	2	0
Surgeon-Colonel G. C. Chesnaye	2	2	0
Dr. John H. Glenn ...	2	2	0
Dr. Joseph Redmond ...	2	2	0
Dr. Robert Browne ...	2	2	0
Mr. H. R. Swanzy ...	2	2	0
Dr. Ninian Falkiner ...	2	2	0
Dr. Arthur V. Macan ...	2	2	0
Mr. James Robinson (solicitor)	2	2	0
Dr. Joseph O'Carroll ...	2	2	0
Professor John B. Story	2	2	0
Dr. J. Hawtrey Benson	2	2	0
Professor Alec. Fraser...	2	2	0
Mr. C. H. Wade (per Mr. A. A. Tindall) ...	2	2	0
Mr. H. Nelson Hardy...	2	2	0
Dr. Charles F. Moore...	2	2	0
Dr. K. M. Taggert ...	2	0	0
Dr. E. Macdowell Cosgrave	1	1	0
Dr. William Walter ...	1	1	0
Mr. W. F. O'Grady ...	1	1	0
Dr. George Armstrong	1	1	0
Inspector-General F. W. Davis, R.N. ...	1	1	0
Dr. Richard Litton MacIntire	1	1	0
Mr. R. F. Tobin	1	1	0
Sir Robert Jackson, C.B.	1	1	0
Mr. P. A. MacDermott	1	1	0
Dr. Henry Potter	1	1	0
Dr. Henry G. Thompson. J.P.	1	1	0
Mr. Geo. H. Moorhead	1	1	0
Mr. W. J. Corrigan ...	1	1	0
Mr. F. Pierce	1	1	0
Mr. Robert J. Harvey...	1	1	0
J. C. P.	1	1	0
Mr. Arthur H. Benson	1	1	0
Mr. L. Werner	1	1	0
Lieutenant-Colonel F. C. Barker	1	1	0
Dr. M. J. Malone	1	1	0
Mr. Thomas Reardon ...	1	1	0
Mr. Charles O'Connor...	1	1	0
Mr. William Perrin ...	1	1	0
Dr. Hugh Stoney... ...	1	1	0
Dr. Wm. Dobbin	1	1	0
Mr. O'Connell J. Delahoyde	1	0	0
Miss Hemphill	1	1	0
Miss Janet G. Horwood	0	10	6
Dr. David Walsh (per Mr. A. A. Tindall) ...	0	10	6

"A MISTAKE SOMEWHERE."

To the Editors of THE LANCET.

SIRS,—Your correspondent "H. W.," in THE LANCET of Feb. 16th, p. 524, under the heading "A Mistake Somewhere," assumes that there must have been an error in reporting Lord Lister to have stated that the inmates of a particular lying-in institution were better off than women attended by general practitioners "who hitherto had not been persuaded of the importance of antiseptic precautions." There is no error, alas! at any rate in regard to the fact conveyed by this statement. Attention has on more than one occasion been called to the fact that while in maternity hospitals the puerperal mortality has been reduced almost to vanishing point by the methodical use of perchloride of mercury that in general practice has remained practically what it was before the introduction of this beneficent application of antiseptic methods. Although the relatively high mortality of private patients

cannot fairly be laid exclusively at the door of the attendant physician it is hardly open to question that much of it is due to the systematic neglect of the simplest precautions, as many of us can testify from personal experience. The matter is one which deserves to be brought prominently before the profession, since it is one which seriously reflects on the manner in which midwifery cases among the poorer classes are attended. I am, Sirs, yours faithfully,

ALFRED S. GUBB, M.D. Paris, &c.

Gower-street, W.C., Feb. 9th, 1901.

A REALLY CLEVER DOCTOR.

THE following advertisement appeared in a recent issue of the *Morning Post*:—

CAN any Lady RECOMMEND a really Clever DOCTOR, for a Confinement, whose fees are not high, in Chelsea or the immediate neighbourhood?—Address, Doctor, 1594, "Morning Post" Office Strand W.C.

The lady who requires a "really clever doctor" to attend her in her confinement must be under the impression that "real cleverness" in a medical man is as easily detected by the lady who is attended by him as the "real goodness" of a "really good cook" is appreciated by her mistress. She has followed the form which she has been accustomed to use in advertising for her servants so closely, including the proviso as to fees as a substitute for "state wages required," that we wonder she did not add "personal character indispensable" or specify the views as to alcohol and religion which she would prefer in her medical attendant. The answers received should be interesting, but we hope the advertisement will not become a precedent for others.

"MEDICAL SUPERSTITIONS."

To the Editors of THE LANCET.

SIRS,—Your correspondent, "M.B. Lond.," in THE LANCET of Feb. 16th, 1901, p. 524, who is preparing a lecture on Medical Superstitions, should consult: (1) "Folk Medicine," by Black, published by the Folk Lore Society; (2) "Leechdom's Wortcunning and Starcraft," by the Rev. Oswald Cockayne, three vols., published under the direction of the Master of the Rolls; (3) Pettigrew, "Superstitions Connected with the Practise of Medicine"; (4) Lady Wilde, "Ancient Cures, Charms, and Usages in Ireland"; (5) Folkard, "Plant Lore Legends and Lyrics"; and (6) Leland, "Gypsy Sorcery."

I am, Sirs, yours faithfully,

Paris, Feb. 19th, 1901. OSCAR JENNINGS.

To the Editors of THE LANCET.

SIRS,—Your correspondent "M.B. Lond.," in THE LANCET of Feb. 16th, p. 524, will find a very interesting, copious, and full account of medical superstitions in different countries in bygone days in "The Origin and Growth of the Healing Art," by Edward Berdoe, 1893, published by Swan Sonnenschein and Co. J. Cordy Jeaffreson, whose death at the age of 70 years was announced in the papers a few days ago, wrote "A Book about Doctors," two vols., published by Hurst and Blackett, which deals briefly with superstition in connexion with the healing art. The *Hull Press* issued "The Doctor in Medicine, Folklore, &c.," by William Andrews, in 1896.

I am, Sirs, yours faithfully,

Wivenhoe, Feb. 16th, 1901. WILLIAM H. HEWLETT, M.D.

AN AWKWARD PREDICAMENT.

THE February number of the *Maryland Medical Journal* states that Dr. W. E. Grimm of Patterson Creek, Western Virginia, was arrested in Cumberland on Jan. 3rd and held under bail to await the action of the grand jury upon a charge of practising medicine in Maryland where he is not legally qualified as a practitioner. Dr. Grimm's offence consisted in crossing the boundary line for a distance of some 400 yards to attend the negro labourers quarantined with small-pox at Pinto, Allegany county.

Councillor.—We are of opinion that it is not advisable, or for the public advantage, that the appointments of medical officer of health and public analyst in large districts such as the metropolitan boroughs should be combined in the same person. The science and practice of sanitation are in themselves sufficient to occupy all the time of a medical officer who discharges his duties efficiently, in which case he would be prevented from giving that systematic attention to laboratory work which is essential to the performance of the duties of a public analyst. There are competent officers, we know, who combine both posts, but the combination is nevertheless inadvisable.

Worried.—It is not obligatory upon B to tell C. In our view he has discretion because the receipt of the confidence was not sought by him. He should be guided solely by consideration of what is best for C and D. If the message from the dead can do them no good, can be no solace to them, and may cause pain to either or both of them, our advice to B is that he should remain silent.

M.—Such wholesale dissemination of testimonials may lay our correspondent open to criticism. Copies should be marked "private," and great care should be taken to send them only to members.

C. M. C. (Berkswell).—We recommend that the patient should consult a medical man. If he considers a second opinion necessary he will advise her whom she should consult.

W. T.—Massage is taught at some hospitals as part of the routine training of the nurses, but we do not know which is the best place for the purpose.

Medical Student.—A medical student cannot act as a public vaccinator.

R. C. G.—We do not give medical advice.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

WEDNESDAY (27th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (28th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

FRIDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

SATURDAY (2nd).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.) St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (25th).—ODONTOLOGICAL SOCIETY OF GREAT BRITAIN (20, Hanover-square, W.).—6.30 P.M. Council Meeting. 8 P.M. Casual Communications:—Mr. W. Hern: Some Early Human Skulls.—Mr. H. Ll. Williams: Two Cases of Absorption of Roots. Paper:—Mr. W. L. H. Duckworth: Dental Fragments, probably of the Third Premolars, found in certain Jaws of Man and Animals (illustrated with lantern slides). Adjouned discussion on Mr. T. E. Constant's paper on the Etiology of Superior Protrusion.

MEDICAL SOCIETY OF LONDON.—8.30 P.M. Mr. A. Doran: Painless Calculous Pyonephrosis without Fear, Nephrectomy, Recovery.—Dr. A. Lewers: On Fibroids largely involving the Cervix Uteri, with notes of cases.

TUESDAY (26th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Papers:—Sir Dyce Duckworth and Dr. A. E. Garrod: A Contribution to the Study of Intestinal Sand with notes on a Case in which it was passed.—Mr. A. E. Barker: On Cases Bearing upon the Question of the Limitation of Enterectomy.

WEDNESDAY (27th).—HUNTERIAN SOCIETY (London Institution, Finsbury-circus).—8 P.M. Council Meeting. 8.30 P.M. Sir Mitchell Banks: The Neglect of the Actual Cautery in Surgery and its Value in the Treatment of Pruritus Ani. (Second Hunterian Lecture.)

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND (20, Hanover-square, W.).—4.30 P.M. Informal Exhibition of Cases. 5 P.M. Meeting. (The meeting which should have been held on Jan 23rd was, by a unanimous vote of the Council, adjourned as a mark of respect for the memory of her Most Gracious Majesty, Queen Victoria.)

FRIDAY (1st).—WEST LONDON MEDICO-CHIRURGICAL SOCIETY (West London Hospital, Hammersmith-road, W.).—Clinical Evening.

WEST KENT MEDICO-CHIRURGICAL SOCIETY (Royal Kent Dispensary, Greenwich-road, S.E.).—8 P.M. Special General Meeting to consider the proposed new rule and amendments thereto. 8.45 P.M. Exhibition of Living Cases, Specimens, &c., by Mr. C. Williams, Dr. Walls, Dr. J. Donelan, Dr. Toogood, Dr. Dockrell, and Dr. Henry.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (25th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Dr. T. G. Brodie: The Vascular and Muscular Mechanisms of the Lung, and the Action of Drugs upon this Organ. (Arris and Gale Lecture.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. Galloway: Consultation. (Skin.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. Beddard: Some Points in the Use of Opium.

TUESDAY (26th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. S. J. Sharley: Consultation. (Medical).

ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. Dr. A. Macfadyen: The Cell as the Unit of Life.

WEDNESDAY (27th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Dr. T. G. Brodie: The Vascular and Muscular Mechanisms of the Lung and the Action of Drugs upon this Organ. (Arris and Gale Lecture.)

LONDON THROAT HOSPITAL (204, Gt. Portland street, W.).—5 P.M. Dr. Stoker: Chronic Glandular Disease of the Nose and Nasopharynx. (Post graduate Course.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—2–3.30 P.M. Mr. H. Finch: Class. Clinical Microscopy. 4 P.M. Mr. P. J. Freyer: Consultation. (Surgical.)

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Kidd: Laryngeal Tuberculosis.

THURSDAY (28th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. J. F. J. Sykes: The Influence of the Dwelling upon Health. (Milroy Lecture.)

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Dr. W. Wingrave: The Nature of Discharges and Douches, with especial reference to Respiratory and Auditory Tracts.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Mr. Kellick: Nævi and their Treatment.

THE HOSPITAL FOR DISEASES OF THE SKIN (Stamford-street, Blackfriars).—3 P.M. Clinical Demonstration:—Dr. P. S. Abraham.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. Beddard: Angina Pectoris.

CHARING CROSS HOSPITAL.—4 P.M. Mr. Wallis: Surgical Cases. (Post-graduate Course.)

LONDON TEMPERANCE HOSPITAL.—2 P.M. Dr. S. Fenwick: Clinical and Pathological Demonstration.

FRIDAY (1st).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Dr. T. G. Brodie: The Vascular and Muscular Mechanisms of the Lung and the Action of Drugs upon this Organ. (Arris and Gale Lecture.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. M. Gunn: Consultation. (Eye.)

LONDON TEMPERANCE HOSPITAL.—2 P.M. Dr. P. Parkinson: Clinical and Pathological Demonstration.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, **AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.**

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1900, which was completed with the issue of Dec. 29th, and the Title-page to the Volume were given in THE LANCET of Jan. 5th.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1900, bound in cloth, gilt lettered, price 18*s*., carriage extra.

Cases for binding the half-year's numbers, cloth, gilt lettered, price 2*s*., by post 2*s*. 3*d*.

To be obtained on application to the Manager, accompanied by remittance.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES. 423, STRAND, LONDON, ENGLAND.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 21st, 1901.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Feb. 15	30·50	N.	...	68	37	27	Fzn.	31	Cloudy
,, 16	30·42	N.W.	0·01	56	44	30	32	35	Cloudy
,, 17	30·25	N.W.	0·03	65	43	30	41	43	Cloudy
,, 18	30·36	NNE	0·04	45	38	33	33	35	Cloudy
,, 19	30·24	S.W.	0·01	38	38	34	34	34	Snowing
,, 20	30·25	N.E.	0·02	55	37	33	33	35	Overcast
,, 21	30·29	N.	...	43	35	29	Fzn.	32	Foggy

During the week marked copies of the following newspapers have been received:—*Liverpool Mercury, Scotsman, Cardiff Mail, Clapham Observer, Derbyshire Times, Wells Standard, Fife Free Press, Sussex Daily News, Blackburn Weekly Standard, Bradford Argus, Liverpool Daily Post, Norwich News, Surrey Comet, Oldham Standard, Plymouth Mercury, Manchester Courier, Dundee Advertiser, Birmingham Post, Glasgow Herald, York Herald, Darlington Star, East Anglian Daily Times, Ipswich Times, Newcastle Journal, Bristol Mercury, Essex Herald, Citizen, Architect, Times of India, Pioneer Mail, Builder, Yorkshire Post, Leeds Mercury, Baptist, Isle of Ely and Wisbech Advertiser, Reading Mercury, City Press, Local Government Chronicle, Hertfordshire Mercury, Paris Messenger, Isle of Man Times, Coventry Herald, Cheltenham Mercury, Kenilworth Advertiser, Huddersfield Chronicle, Oswestry Advertiser, Literary World, Sunderland Morning Mail, Shields Morning Mail, Ayr Observer, Sydney Bulletin, Madras Standard, British and Colonial Printer, Christian Commonwealth, Local Government Journal, The Age, Westminster Gazette, South-West Suffolk Echo, Woodbridge Reporter, The Star, Oxford Chronicle, Huddington Observer, Carlisle Journal, Bexley Express, Ilkeston Advertiser, Spalding Guardian, Lancaster Standard, Wisbech Standard, East Kent Times, &c., &c.*

Communications, Letters, &c., have been received from—

A.—Miss F. Almond, Lond.; A. B., Brockenhurst; Messrs. Alford and McCulloch, Lond.; Messrs. Allen and Hanburys, Lond.; Mr. T. A. Andrews, Melbourne; Miss M. E. Anderson, Sheffield; Association for Pure Vaccine Lymph, Lond.; Alliance and Dublin Consumers Gas Co., Dublin.

B.—Mr. J. R. de C. Boscawen, Truro; Dr. A. Brocchi, Paris; Dr. J. Rose Bradford, Lond.; Mr. F. B. J. Baldwin, Rotherham; C. Birchall, Ltd., Liverpool; Dr. H. Bishop, Edinburgh; Mr. W. H. Bennett, Lond.; Dr. G. W. Bannatyne, Bath; Mr. J. Paul Bush, Clifton; Mr. A. Brereton, Lond.; Mons. A. Bonhommié, St. Raphael; Messrs. Buchner, Schacht and Co., Lond.; Dr. J. L. Bunch, Lond.; Bootle Borough Hospital, Secretary of; Dr. Byrom Bramwell, Edinburgh.

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D.—Mr. Alban Doran, Lond.; Mr. James Devine, Greenock; Deutscher Inserenten Verband, Cologne; Dharampore, India, H.H. the Maharáná; Messrs. De Grave, Short, and Co., Lond.; Messrs. W. Dawson and Sons, Lond.

E.—Mr. E. H. Ellison, Syston; E. W. M.

F.—Dr. Arthur Foster, Blackburn; Dr. H. Forestier, Paris; Mr. I. Fukuzawa, Tokyo, Japan.

G.—Mr. R. J. Godlee, Lond; Messrs. Greenberg and Co., Lond.; General Infirmary, Gloucester, Secretary of Mr. J. L. Gay. Putney; Greenberg's Advertising Agency, Lond.; Dr. J. Gledhill, Lond.

H.—Mr. J. Herbert, Whitby, Dr. W. Handcock, Bradford; Messrs. Hirschfeld Bros., Lond.; Mr. Garrett Horder, Cardiff. Mr. T. Bernard Hall, Birmingham; Mr. H. Hamilton Hall, Tunbridge Wells.

J.—Mr. E. T. Johnson, Wrexham; W. Judd, Ltd., Lond.

K.—Kitson Lighting and Heating Syndicate, Lond.; Messrs. R. A. Knight and Co., Lond.; Mr. Charles R. Keyser, Lond.

L.—Dr. Arthur P. Luff, Lond.; Lightburn Hospital, Secretary of; Messrs Lee and Nightingale, Liverpool; Lismaskea Coöperative Agricultural and Dairy Society, Secretary of; Messrs. Lacarriere, Lafaille, et Cie, Paris; Mr. T. Laffan, Cashel.

M.—Mr. W. Morgan, Pontypridd; Messrs. C. Mitchell and Co., Lond.; Miss Morfit, Lond; Medical Graduates' College, Lond.. *Medical News*, New York, Editor of; M., Lond.; Messrs. Merryweather and Sons, Lond.; Dr. A. M. Martin. Newcastle. Mr. E. D. Marriott, Nottingham; Mr. E. C. Masser, Moseley; Messrs. Mather and Crowther, Lond.; Mr. W. Marriott, Lond.; Mr. J. Marshall, Pontnewydd.

N.—Dr. O. R Niven, Liverpool; Dr. J. Norman, Measham; Dr. J. Niven, Manchester; Mr. J. E Newton. Lond.; Mr. F. C. Needes, Lond.; Mr. H. Needes, Lond.

O.—Messrs. Orridge and Co., Lond.; Messrs Offord and Sons, Lond.; Mr. T. G. Ouston, Newcastle-on-Tyne.

P.—Mr Y. J Pentland, Edinburgh; Dr. D. R. Paterson, Cardiff; Messrs. J. Patterson and Sons, Liverpool; Messrs. Peacock and Hadley, Lond.

R.—Dr. O. L. Rhys, Cardiff; Dr. E. C. Register, Charlotte, U.S.A. Royal College of Surgeons in Ireland, Dublin. Registrar of; Rebman, Ltd., Lond.; R E W. H., Retreat (The), Buntingford, Royal Orthopædic Society, Lond., Secretary of; Mr. B. Roth, Lond.

S.—Mr. W. E. Sargant, Lond.; Dr. Sydney Stephenson, Lond.; Messrs. Squire and Sons, Lond.; Messrs. Street and Co., Lond.; Stockport Infirmary, Secretary of, Mr A. C. Smith, Stapleton, N.Y.. Mr. A. W. Stokes, Lond.: Southport Infirmary, Secretary of; Mr. W. G. Spencer, Lond., Messrs. Smith, Elder and Co., Lond., Mr. J. Stott, Haslingden; Stoke-upon-Trent Union, Clerk of; Mr. J. Snowman, Lond.; Messrs G. Street and Co., Lond.; Suffolk General Hospital, Ipswich, Secretary of.

T.—Dr. W. Thyne, Barnet; Messrs. C. Tayler and Co., Lond.; Mr. Batchelor Taylor, Bedford; Mr. Conrad Thies, Lond.

U.—Mr. J. R. Upton, Lond.; Dr. Urquhart, Perth.

V.—Mr. B. Vencatarao, Saklaspur, India.

W.—Dr. A. A. Warden, Paris; Warneford Hospital, Leamington; Dr W. H. Willcox, Lond.; Dr. Jason Wood, Bradford; W. G.; W. F. W. W.; Messrs. R F. White and Son, Lond.

Z.—Dr. H. Zellner, Hanover.

Letters, each with enclosure, are also acknowledged from—

A.—Ashwood House, Kingswinford; A C A.; A. C. F.; A. W. G.; Mr. F. W. Alexander, Lond.

B.—Dr. F. E. Bissell, Byfield; Mr. H. J. T. Blanch. Swindon; Messrs. Brady and Martin, Newcastle-on-Tyne; Birkenhead and Wirral Children's Hospital, Secretary of; Dr. R. Bowles, Lond.; Dr. P. Boobbyer, Nottingham; Mr. T. H. Brocklehurst, Childe Okeford, Mr. T. Bryant, Lond.; Mr. H. S. Beadles, Lond.; Mrs. B.

C.—Miss A. R. Cooper, Paignton; Messrs. Cassell and Co., Lond.; Dr. A. R. Carmichael Cathcart; Messrs. T. Cook and Son, Lond.; C. A. M.; Dr. C. C. Cox, Wentworth. Australia; Mr. R. H. Cox, Shanghai.

D.—Mr. J. T. Davenport, Lond.; Dr. H. Damm, Copenhagen; Doctor, Southport; Mr. J. Dalebrook, Sevilla, Spain; Messrs. A. De St. Dalmas and Co., Leicester; Dorchester Asylum, Medical Superintendent of.

E.—Dr. W. Evans, Barnsley; Miss T. Evans, Lond., E. B.; E. I. D.

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The Milroy Lectures

ON

PUBLIC HEALTH AND HOUSING:

THE INFLUENCE OF THE DWELLING UPON HEALTH IN RELATION TO THE CHANGING STYLE OF HABITATION.

Delivered before the Royal College of Physicians of London,

BY JOHN F. J. SYKES, M.D., D.Sc. EDIN.,

MEDICAL OFFICER OF HEALTH, ST. PANCRAS; LECTURER ON PUBLIC HEALTH, GUY'S HOSPITAL.

LECTURE I.[1]

Delivered on Feb. 28th, 1901.

INTRODUCTORY.

MR. PRESIDENT AND GENTLEMEN,—The subject I propose to submit to your attention presented some difficulty in framing a short title. My object is to consider the influence of the dwelling upon health in relation to the rapidly changing style of habitation, and might perhaps briefly be described as "public health and housing." It is patent to all, especially in the metropolis, that the growth and pressure of population is altering the mode of living and the exclusiveness of the house of former days is giving way to a closer association of habitations. Amongst the affluent and middle classes mansions are now often shared by families; flats, with and without commissariat departments, are springing up on all sides; boarding-houses and residential clubs are increasing in number; and hotel life has become fashionable. Amongst the working and poorer classes existing houses are being more and more sub-divided into tenements, flats of a small kind are erected in increasing numbers, poor men's hotels or cubicle lodging-houses are introduced and family lodging-houses or boarding-houses for the poor are coming upon the scene. The new conditions to which dwelling-houses are now being subjected are becoming increasingly important; more especially does this apply to the dwellings of the working and poorer classes.

The overpowering predominance of the housing question upon the health and vigour of the people is reflected in the fact that in London alone, at the census of 1891, of a population of four and a quarter millions, no less than two and a third millions, over one-half of the community, lived in small dwellings of from one to four rooms. The public health is influenced, not only by the overcrowding and misusage of houses, but also by the construction and arrangement of dwellings, and both are equally important.

It is remarkable that the most serious public health problem now confronting us at the end of the Victorian reign, the most prosperous period of English history, was also the most serious public health problem met with towards the end of the Elizabethan reign 300 years earlier and the next most prosperous period of our history. In each period the cause and effect have been the same. Increased prosperity acts as a stimulus to the growth of towns to such a degree that the crowding of population into cubic space and of houses upon square space becomes a danger to the public health and well-being of the community. In the Acts of the Privy Council, printed and published a year ago, will be found [2] a series of letters addressed in 1590 to the Lord Mayor of London, the Master of the Rolls, and others, commanding them to enforce the Royal proclamation of 1580 and a subsequent statute against the excess of new buildings being erected, the sub-dividing of habitations into several dwellings, and the taking in of inmates "whereby groweth infections of deadly sickness," and "the pestering of many families in one small house," and the "City hath been largely increased to the decrease of other towns, boroughs, and villages within the realm." By statute in 1593 it was provided that no new buildings, except for the better classes, were to be erected within three miles of London and Westminster, and no existing buildings were to be sub-divided, and in 1602 by proclamation newly-built houses were ordered to be demolished. But Stow tells us that little was done and small effect followed. In fact, the disease had not been diagnosed and the proper remedies had not been applied.

It is now no longer resented that the growth of a city should proceed by the influx of population from the country towards the centre, and it is now recognised that the expansion of commercial and professional activity in the city is ever driving the resident population away from the centre towards the periphery,[3] tending to cause closer and closer compression of the people, enhancing the value of the land, increasing the difficulty of the bulk of the population to find room, raising the rental of houses, and reducing the provision of accommodation and accessories in dwellings, and all that this connotes, to the smallest proportions. This is the malady; the remedies prescribed have been numerous and many interests have to be reconciled. I propose to regard the malady and the remedies from the point of view of health and the bodily vigour necessary to carry on the life of our working population.

We are becoming more and more town-bred, and the stamina, energy, and health of the population must be maintained. From time to time it has been said that the housing question is a simple one and that the remedy merely requires that the necessary dwelling accommodation should be defined and enforced. Those familiar with the subject recognise that this is begging the whole question, as the dwelling accommodation necessary is the very thing that all deep thinkers and earnest investigators have been endeavouring to find, and the more they inquire into and work upon the subject the more complex they find are the requirements and the more numerous the points of view from which they have to be regarded—health, construction, economics, and so many other factors governing the question.

Statute already provides that every person in a workshop or factory is entitled to 250 cubic feet of air space and 400 cubic feet during overtime. Although there is no similar statutory definition of overcrowding applicable to dwellings by-laws provide for at least 300 cubic feet of space per head in common lodging-houses and 300 or 400 cubic feet in houses let in lodgings or tenement houses when registered. These by-laws also provide for one w.c. for every 12 persons (in London this is statutory for all houses), the use of a refuse receptacle, of water, and of drainage. Further, there are by-laws and regulations as to drainage, water-supply, and buildings.

Without accepting these provisions as ideal it is evident that legislation has provided some kind of minimum. It is the altered conditions of present-day life that require to be reconsidered and the standards correspondingly altered so as to rest upon a basis more in consonance with physiological requirements rather than the mere packing together of human beings.

Previously to and during the major part of the Victorian period each dwelling-house was constructed to suit the needs of a particular class of family—the one- or two storied cottage for the poorer classes, the six-, eight-, or 10-roomed house for the middle classes, and mansions for the wealthy. The increased prosperity and the increased flow of population into towns during the latter Victorian period led to such a concentration of population that under the increased pressure cottages and smaller houses became insanitary areas, are fast disappearing, and are being reconstructed in flats; terrace houses are being more and more subdivided and sublet in smaller dwellings; and the largest houses and mansions are being altered in construction or reconstructed for other usage.

In the new century London especially will continue to respond still more rapidly to the pressure and will undoubtedly become largely a city of houses in flats or floors of separate dwellings. It is well for public health to recognise this betimes and to ascertain the conditions that will make for deterioration of health in order that they may be avoided both in construction and usage. If the poorer classes are housed in such a manner as to deteriorate health other classes must also suffer, both directly and indirectly, so that the mode and effects of housing become matters of vital interest to all classes. The medical profession appreciate this probably more than any other body of the community.

My matter divides itself naturally into three portions

[1] Lectures II. and III. will be delivered on March 5th and 7th, 1901, respectively.

[2] Acts of the Privy Council (printed edition), vol. xix., pp. 188, 278, 324, 348. See extracts appended hereto.

[3] See Conference on the Housing of the Working Classes, 1900, Transactions of the Sanitary Institute. Discourse by the writer.

(1) the ascertained effects upon health of certain conditions of habitation; (2) construction and misconstruction; and (3) usage and misusage; and under these heads I propose to deal with the subject.

I.—THE ASCERTAINED EFFECTS UPON HEALTH OF CERTAIN CONDITIONS OF HABITATION.

The Effects of Density of Population.

Density of population is usually stated as density upon area, per square mile or per acre, or as density in cubic space per house or per room. The square measures are definite, but the cubic measures vary, within limits, according to the size of the houses or rooms. It may be assumed that beyond a certain point increasing density of population upon area, in the absence of hygienic measures, would result in increasing mortality, and that in proportion to the application of these measures the mortality would diminish. If the population were distributed equally upon the land measurement over large areas would be more reliable, but when it is mainly aggregated in large towns this measurement gives the mean of urban and rural conditions.

Density upon Square Space.

Density per square kilometre.—As illustrative of this demographic method of stating the effects of density upon nations the following figures may be quoted:—

TABLE I.—*Density of Population and Mortality in 1886.*[4]

Countries.	Inhabitants per square kilometre.	Births per 1000 inhabitants.	Deaths per 1000 inhabitants.
Norway	6	30·9	16·1
Sweden	11	29·8	16·6
Denmark	15	30·9	16·1
France	72	23·9	22·5
Germany	86	37·1	26·2
Italy	105	36·4	28·3
England and Wales (1886)	182	32·8	19·5
Lancashire (1886)	247	33·7	21·9

Density per square mile.—The late Dr. Farr[5] estimated that the mortality of districts was nearly as the sixth root of the density of the inhabitants—subsequently amended to slightly over the eighth root—and he framed this table to illustrate his later formula:—

TABLE II.—*Annual Rate of Mortality per 1000 for the 10 years 1861–70 in Seven Groups of Districts of England and Wales (exclusive of London) and the Mortality deduced from the Densities of Population in those Groups.*

Number of group.	Number of districts in each group.	Range of mortality.	Density. Persons to a square mile.	Observed mortality.	Calculated mortality.
England and Wales (exclusive of London) ...	593	15–39	315	22·00	20·41
I.	53	15–17	166	16·75	18·90
II.	345	18–20	186	19·16	19·16
III.	137	21–23	379	21·88	20·87
IV.	47	24–26	1718	24·90	25·02
V.	9	27–30	4499	28·08	28·08
VI.	(Manchester.)	32	12,357	32·49	37·70
VII.	(Liverpool.)	39	68,823	38·62	36·74

That death-rates are not determined simply by density of population over large areas was shown by Dr. Ogle[6] in a table relating to the decennium 1871–80, part of which is reproduced below, and in which it was also shown that any regular progressive effect of density upon mortality did not become uniform until the population approached accumulation, so as to be measurable by persons per acre rather than per square mile.

Pursuing the same subject, Dr. Tatham[7] in tables relating to the decennium 1881–90, part of which is also reproduced below, has shown that the relationship of density and mortality is too complex to admit of being expressed by a formula, such as Dr. Farr's, that when death-rates corrected for age and sex distribution are used the mortality appears to increase in more regular progression with increase of density, and that improved sanitation has lowered the ratio of mortality to density.

TABLE III.

1871–80			1881–90	
Persons per square mile.	Crude annual death-rate.	Acres to a person.	Persons per square mile.	Corrected annual death-rate.
194	18·53	3·30	139	12·70
200	15·60	3·20	149	13·45
211	17·58	3 04	187	14 48
217	19·48	2·94	214	15·41
253	14·48	2·53	307	16·47
258	16·63	2·48	435	17·35
458	20·56	1·40	662	18·55
677	21·54	0 95	1281	19·39
1301	22·55	0 49	1603	20·43
1819	23·54	0·35	2437	21 47
2166	24 41	0·30	3299	22·50
2819	25·54	0·23	5329	23·41
2944	26·26	0·22	4295	24·51
6144	30·23	0·10	5722	26·22
—	—	—	19584	33·00

It is obvious from the above table and the preceding that any formula would require an alteration and progressive increase in the root of the density to measure the mortality and keep pace with the progress of sanitation from decennium to decennium. Compare the following figures of density and mortality in the three preceding tables: 1718, 24 9; 1819, 23·5; and 1803, 26·4. The tables not only show in relation to density a progressive decrease of mortality both in the more and the less populated districts, but also that in the more populated districts or towns the decrease is relatively greater than in the country. Compare also the table in the Registrar-General's annual reports of the mortality in town and country districts through a long series of years. This may be attributed to improved domestic and municipal sanitation, but factory legislation has also contributed its quota, occupation being an important factor in the mortality of adults, and especially male adults.

In the Decennial Supplement to the Fifty-fifth Annual Report of the Registrar-General for the years 1881–90 Dr. Tatham compared the mortality of occupied males over 15 years of age in London, in industrial districts, and in agricultural districts, embracing more than half the occupied males in England and Wales in these three sections, and he showed in the following table that each age-group the highest death-rate occurs in the industrial and the lowest in the agricultural districts, London occupying an intermediate position:—

TABLE IV.

—	15	20	25	35	45	55	65 and upwards.
All occupied males	100	100	100	100	100	100	100
Occupied males (London)	108	100	112	125	123	120	108
Occupied males, industrial districts	120	109	119	128	135	137	118
Occupied males, agricultural districts	82	92	82	72	67	71	92

[4] The foreign density figures are taken from the article upon demography by M. Jacques Bertillon in the Encyclopédie d'Hygiène of Dr. Jules Rochard, vol. i., p. 129; the birth- and death-rates and also the English densities from the Annual Report of the Registrar-General.

[5] Supplements to the fifth (1843) and to the thirty-fifth (1873) Annual Reports of the Registrar-General.

[6] Supplement to Forty-fifth (1885) Annual Report of the Registrar-General.

[7] Supplement to Fifty-fifth (1895) Annual Report of the Registrar-General.

Of course, in spite of improved conditions of sanitation and occupation, there will always remain the difference between the air of the country and the town.

It may be concluded that the statistics extending over large areas and calculated per square mile do not form any standard of the health of individual districts or parts of districts subject to very variable amounts of provision for sanitary requirements, especially land drainage, sewerage, and water-supply, and consisting of populations also varying considerably in age, sex, and occupation. With regard to density over smaller areas, as the populations, whether of rural or of urban districts, are mainly aggregated in villages, towns, and cities, it follows that better results are obtained by comparing the statistics of these conglomerations. But even towns differ so greatly in the amount of open spaces and vacant land that the density ratio is not generally a reliable measure of comparison, even when the conditions of water-supply, sewerage, and refuse removal are similar. It is in constant record that urban mortality is highest in districts towards the centre of a city and lower towards the periphery, is most marked in children under five years, and in diseases affecting the respiratory organs. London furnishes ample statistics establishing this in the Registrar-General's returns. The results of medical observations have also placed on record the effects of towns in lowering vitality and energy, enfeebling health, impairing nutrition, and diminishing resistance to disease.

Density per acre.—When particular areas of towns are taken the figures become of greater utility and for the purpose of showing and comparing the effects of density combined with similar insanitary conditions the principal statistical facts with regard to the Boundary-street area, Bethnal Green,[8] and the Churchway area, Somers Town, St. Pancras, are compared in the following table with London as a whole:—

TABLE V.

—	Boundary-street area.			London.	Churchway area.			
	Period.	Boundary-street area.	St. Matthew, Bethnal Green.		Period.	Churchway area.	Somers Town.	St. Pancras.
Area in acres...	1889-90	15	755	77410	1888-90	1½	181	2672
Density per acre	,,	373	168	58	,,	446	183	88
Birth-rate per 1000 population	1887-90	44·6	37·8	30·3	,,	26·8	33·9	30·1
Death-rate under one year per 1000 births	,,	252	159	151	,,	393	172	153
Total death-rate per 1000 population...	1888-90	39·3	22·5	18·9	,,	37·4	23·1	19·1
*Zymotic death-rate ...	,,	9·8	3·8	2·6	,,	5·0	3·2	2·5
†Tubercular death-rate ...	,,	4·4	2·7	2·7	,,	6·7	3·6	2·8
‡Respiratory death-rate ...	,,	12·0	5·6	4·0	,,	11·7	5·5	4·1

* *Zymotic diseases.*—Small-pox, measles, scarlet fever, diphtheria, whooping-cough, typhus, enteric, and continued fevers, diarrhœa, and cholera.

† *Tubercular diseases.*—Phthisis, tubercular meningitis, tabes mesenterica, rickets, scrofula, and other forms of tuberculosis.

‡ *Respiratory diseases.*—Bronchitis, pneumonia, pleurisy, asthma, lung disease, laryngitis, and non-membranous croup.

An unhealthy or insanitary area embraces certain main objects of consideration—the site, the relationship of the houses to each other, the houses themselves, and the class of inmates. Mere density alone of square space is insufficient to produce all the results seen in the preceding table, as shown by the dense population housed on the areas of some prisons, reformatories, and other public institutions. The same applies to large blocks of artisans' dwellings, which will be considered later; in these the relationships of the houses to each other is immensely improved, and the inmates are a picked class.

These comparative figures show that with the increasing density on square space there is an increasing general and special mortality in insanitary areas. The general mortality increases at all ages but particularly under one year. The special mortality shows the greatest increase amongst infectious diseases, the next greatest amongst tuberculous diseases, and the next amongst respiratory diseases. If all infectious cases be promptly removed to hospital and disinfection and cleanliness be enforced the increases tend to take place in the reverse order, the respiratory diseases first, and the infectious diseases third, the tuberculous still remaining second, being largely influenced by pulmonary tuberculosis. This is exactly what *a priori* might be expected, increased density in the same average size of house, lower vitality of the occupants, enhanced predisposition to diseases produced or conveyed aerially. In reference to this aerial influence Dr. Ogle pointed out[9] that if a series of industries be arranged in the order of the purity of the air breathed, apart from dusty occupations, the order will also be that of the mortality from diseases of the respiratory organs together with phthisis.

TABLE VI.—*Comparative Mortality of Males over 15 Years of Age Working in Air of Different Degrees of Purity from Diseases of the Respiratory Organs and Phthisis, the Mortality of all Males over 15 Years being taken as 1000.*

Industries.	Diseases of respiratory organs.	Phthisis.	Total.
Fishermen	90	108	198
Agriculturists...	122	115	237
Grocers	116	167	283
Drapers	129	301	430
Tailors	186	285	471
Printers	116	461	627

These results show the effects of fresh and foul air.

Compared in another manner phthisis shows its dependence upon indoor conditions. In England previously to 1865 the phthisis death-rate was greater among females than among males, the difference gradually diminishing until the mortality among each sex was equal. Since 1866 the mortality has continued to diminish in both sexes, but in a larger proportion amongst females and males. The male rate being taken at 1000 the female rate in successive decennia and onwards has been 1076 (1851-60), 1006 (1861-70) 918 (1871-80), 871 (1881-90), 802 (1891), 813 (1892), 797 (1893), 779 (1894), 795 (1895), 767 (1896), 758 (1897), and 747 (1898). This greater proportionate diminution in the phthisis mortality amongst females, the more indoor of the two sexes, is significant of the improvement of dwellings and more so when it is realised that the greatest diminution has taken place between the ages of 15 and 45 years, the child-bearing and the child-rearing period, when the woman is most indoor. Dr. Arthur Ransome in his researches on tuberculosis[10] has also shown that in country towns where the men are chiefly occupied out of doors and the women indoors the death-rates from phthisis of females exceed those of males, and that in manufacturing towns where the men are mostly attracted to indoor employments the excess is upon the male sex.

Density in Cubic Space.

Upon square space, as we have seen, we may have increasing density due to the crowding of cities with towns, of towns with quarters, of quarters with street blocks, and of street blocks with houses. It would not be wise to conclude that density upon square space is a thing to be ignored or to be belittled to the extent of minimising the immense value of separating towns or boroughs from each other by parks and commons, quarters by squares and gardens, street-blocks by broad streets and avenues, and houses by sufficient rear-spaces. The proportionate amount of open square space to the covered superficial area of towns and quarters has not received any exact estimation. The width of streets

[8] Annual Report for 1890, Dr. G. P. Bate, medical officer of health of St. Matthew, Bethnal Green.

[9] Supplement to the Forty-fifth Annual Report of the Registrar-General, 1885.

[10] Weber Parkes Prize Essay, 1897.

and size of rear-spaces, both of great influence upon health as shown by large insanitary areas, will be considered later.

Density in cubic square deals with street blocks that may be crowded with houses, houses with dwellings, dwellings with rooms, and rooms with persons. The first three are questions of structure embracing the size and disposition of rooms, dwellings, houses, and street blocks. On the other hand, the crowding of persons into these is a question of *usage* upon which some statistics are available.

Persons per house.—The varying size of houses and the greater variation introduced by the modern "flat" method of construction has destroyed any value that comparative statistics as to the number of persons per house may have possessed. This applies particularly to London and some other large cities, and therefore we must fall back upon old and well-known statistics.

That disease depending solely upon personal infection prevails in proportion to the increased number of inmates in a house is demonstrated by the following table of typhus mortality in Berlin in 1880[11] in proportion to density of population in houses:—

TABLE VII.

Number of deaths from typhus.	Number of city districts.	Mean number of inmates of houses.
0	83	49·9
1	29	62·7
2	51	64·5
3	22	74·4
4	18	77·1
5	5	77·4
6-9	6	91·5
10-13	2	98·5

We know that pulmonary phthisis is most prevalent in large towns, in the most densely built parts of a town, and in the most densely populated areas of those parts. In dwelling-houses the effects of crowding received the clearest exposition in the army medical reports and inquiries relating to barracks. The mortality from phthisis in the British army was:[12] from 1830 to 1846, 7·86 per 1000 of strength; from 1859 to 1866, 3·1 per 1000; from 1867 to 1871, 2·6 per 1000; from 1872 to 1880, 2·3 per 1000; from 1879 to 1884, 2·08 per 1000; from 1886 to 1887, 1·47 per 1000; and in 1888, 1·23 per 1000.

It was in 1858, the period when the great fall in mortality took place, that the celebrated report of the Royal Commission on the Sanitary Condition of the Army was issued. The mortality from lung diseases was found to vary greatly in four branches of the army, namely:—

TABLE VIII.

——	1837-46, 10 years.	1864-70, 7 years.
Household cavalry	6·28	3·76
Cavalry of the line	5·65	1·41
Foot Guards	11·9	2·30
Infantry	7·75	2·12

The only decided difference between these various arms was the condition of overcrowding in barracks, and the only decided difference made between the earlier and the later periods was the increased cubic space per head. The same prevalence of lung diseases was found in most of the European armies and particularly in those portions stationed in large cities.

Persons per dwelling.—Dr. J. B. Russell has shown[13] that a diminution of the size of dwellings tends to correspond with an increase in the mortality, particularly when accompanied by an increase in the number of persons per room, and that the progress-increase of mortality coincides with the progressive increase of the percentage of population living in dwellings of one room, as shown by the following table:—

TABLE IX.—*Showing the Relation of the Death-rate to Dwelling Accommodation in the Eight Principal Towns of Scotland.*

Locality.	Death-rate 1871-1880.	Persons per acre, 1881.	Rooms per dwelling.	Persons per dwelling.	Percentage of population living in dwellings of—				
					One room.	Two rooms.	Three rooms.	Four rooms.	Five or more rooms.
Aberdeen	21·17	18	3·42	1·511	13·6	38·3	20·3	9·1	18·7
Leith ...	22·5	43	2·98	1·671	14·2	43·3	18·3	9·0	15·2
Perth ...	22·6	7	4·96	1·312	10·0	34·3	19·3	10·7	25·7
Edinburgh	23·2	55	4·19	1·320	16·8	31·6	15·4	8·9	27·3
Dundee ...	25·7	42	2·85	1·870	16·9	48·1	14·7	6·2	14·1
Greenock	27·4	46	2·64	1·907	15·4	47·3	19·7	5·7	12·0
Paisley ...	27·8	16	2·42	1·984	23·0	44·1	14·7	6·8	11·4
Glasgow ...	28·6	84	2·34	2·054	24·7	44·7	16·0	6·1	8·5

The towns fall into two well-marked sets of four, the four upper with death-rates below 24 per 1000 and dwellings of from three to five rooms, the four lower with death-rates above 25 per 1000 and dwellings of less than three rooms, and in this group the death-rate rises *pari passu* with the diminution in the size of the average dwelling.

Dr. Anderson, the medical officer of Dundee, found in 1884 in that city that the mortality in dwellings of one room was 21·4 per 1000, of two rooms 18·8, of three rooms 17·2, and of four rooms and upwards 12·3 per 1000, and as deaths in workhouses, hospitals, and other institutions were omitted the true death-rate of the smaller dwellings would be relatively higher still, as the general death-rate of Dundee was 20·7 per 1000. Dr. J. B. Russell again by detailed inquiry also worked out the mortality from various causes, and the mortality from all causes in three classes of dwellings, small, medium, and large, in Glasgow for the year 1885, and the results are set out in the following table:—

TABLE X.—*Death-rates from Various Causes in Various Sized Dwellings in Glasgow in 1885.*[14]

Causes of death.	Dwellings of 1 and 2 rooms.	Dwellings of 3 and 4 rooms.	Dwellings of 5 rooms and upwards.
Zymotic diseases (including diarrhœa)	4·78	2·46	1·14
Acute diseases of the lungs (including consumption) ...	9·85	6·89	3·28
Nervous diseases and diseases of nutrition of children... ...	4·80	2·35	0·91
Accidents and syphilis in children	0·32	0·11	—
Miscellaneous unclassified diseases...	7·99	7·64	5·90
Total (all causes)	27·74	19·45	11·23

Taking the death-rates in the large dwellings as the standard the death-rate from zymotic diseases was two-fold greater in the medium and four-fold in the small; from lung diseases two-fold greater in the medium and three-fold in the small; and from diseases of nutrition in children under five years of age (convulsions and other nerve affections, atrophy, wasting, and premature birth) over two and a half-fold greater in medium and over five-fold greater in small dwellings of one and two rooms.

[11] Handbuch der Hygiene, Dr. Theodor Weyl, vol. iv., p. 9; Dr. A. Oldendorff.

[12] Parkes's Practical Hygiene, eighth edition, p. 584.

[13] Vital Statistics of the City of Glasgow, Part I., 1885.

[14] On the "Ticketed Houses" of Glasgow, Proceedings of the Philosophical Association of Glasgow, 1888-89.

A comparison between the increasing density of persons in dwellings and consumption in the Duchy of Baden is stated to have given the following results :—[15]

TABLE XI.

Per 1000 inmates.	Consumption mortality.
Group 1, 815 dwellings.	2·29 per 1000.
,, 2, 745 ,,	2·66 ,,
,, 3, 645 ,,	3·10 ,,
,, 4, 547 ,,	3·20 ,,
,, 5, 470 ,,	3·23 ,,

Persons per room.—In dealing with persons per room we have a basis of which the limits are not so wide, and although an international basis cannot be defined it may be said that in England the limits lie between 600 and 1400 cubic feet, but mainly between 800 and 1200, and average perhaps somewhere near 1000 cubic feet per room, in dwellings of less than five rooms. If one regards as overcrowded the dwellings in which the number or inhabitants exceeds double the number of rooms the following are the results in different cities of Europe :—[16]

TABLE XII.

City and date.	Population.	Overcrowded population.	Percentage overcrowded.	Mortality of whole city.
London (1891)	4,211,743	830,182	20 per cent.	21·4
Paris (1891)	2,424,705	331,976	14 ,,	21·6
Berlin (1885)	1,315,387	363 960	28 ,,	24·6
Vienna (1890)	1,364,548	387,000	28 ,,	24·6
Budapest (1891) ...	468,759	348,609	74 ,,	28·0
St. Petersburg (1890)	956,226	442,508	46 ,,	23·4

It is probable that the greater attention paid to the sanitation of houses in London as compared with Paris may in some measure account for the mortality not exceeding that of Paris, where the overcrowding was less in 1891 than in London at the same census date.

Dr. Korosi has disputed the interpretation placed upon the high percentage of overcrowding in Budapest and has pointed out that in Budapest[17] only rooms (*chambres*) in a dwelling (*logement*) were included, whereas in Paris compartments (*pièces*) such as lobbies, &c., in a suite or flat (*appartement*) were included, so that the percentage of overcrowding in Budapest should be considerably reduced and that of Paris somewhat increased. Dr. Jacques Bertillon has further pointed out that it is probable that the census enumeration of overcrowding in London is understated on account of the indefiniteness of the question as to rooms and of omissions to reply.[18]

Bearing these points in mind there is a remarkable coincidence between the gradation of overcrowding and of mortality in the above table, and, omitting the first and the last, this is particularly noticeable in the four great cities of the continent in which a similarity in the structure of buildings prevails. This is an important point bearing upon one of the disadvantages attending the continental mode of construction now coming into vogue in London. The mortality in Leipsic in 1875 and 1876 in proportion to density of persons per room according to the census of Dec. 1st, 1875, was as follows :—

TABLE XIII.

Streets with a mean population of—	Of 100 died yearly. Under one year.	Of 100 died yearly. Over five years.	All ages.
			Per cent.
0–1 inmates in each room.	11	1·0	1·1
1–1·5 ,, ,, ,,	25	1·1	1·8
1·5–2 ,, ,, ,,	26	1·1	2·0
2–2·5 ,, ,, ,,	34	1·4	2·6
2·5–3 ,, ,, ,,	33	1·3	2·7
Over 3 ,, ,, ,,	42	1·8	3·4

The figures show that when the number of inmates per room increased from one to three, that is, more than treble, the death rate at all ages also trebled and the death-rate under one year quadrupled.[19] The later experience of Glasgow[20] of the effect of room-density upon tuberculous diseases is that in each district of the city where the phthisis death-rate exceeds the mean, there also the room-density is in excess, and concurrently with the rise in the minimum cubic space per adult inmate to 460 cubic feet in 1890 and the increase in the minimum size of rooms by the Building Regulations Act of 1892, and with other factors, the phthisis death-rate is decreasing, but the rate of decrease is greater in districts which have a concurrent decrease in room-density.

With reference to overcrowding of air-space in dwelling-rooms in the metropolis Mr. Shirley Murphy has shown[21] that : 1. In London sanitary districts the death-rate from phthisis increases *pari passu* with the increase in the proportion of population living more than two in a room, in tenements of less than five rooms. 2. In these same districts, whilst overcrowding is associated with a tendency of the population to die from disease generally, this tendency is not manifested in the case of every disease. The mortality from cancer does not appear to have any relation whatever to overcrowding, that of diarrhœa and the principal zymotic diseases (excluding diarrhœa) is not particularly apparent, the mortality from tabes mesenterica shows a slight correspondence with the degree of overcrowding, that from tuberculous meningitis shows a little more, but the mortality from phthisis closely corresponds with the degree of density of persons per room. 3. In these same districts the increase of mortality from all causes in proportion to the overcrowding manifests itself at the same ages as the increase of mortality from phthisis—namely, 25, 35, 45.

It is recognised that the most important in the spread of pulmonary tuberculosis is predisposition, and predisposition can be acquired as well as be innate, and, further, that by hygienic measures the acquired predisposition and the innate disposition, and even the communicable entity of the disease itself, can be so controlled as to be kept in abeyance and even to be permanently subdued. It is further recognised that the conditions under which it may be acquired are residence in impure air, particularly such as is not renewed often enough, crowding of persons together, absence of sunlight, and dampness. In susceptibility to phthisis the power of resistance appears to be even more important than the power of infection, or, in other words, the prevention of loss of vitality or energy is most important.

Persons per cubic space.—In cities the average dwelling space of the inhabitants has a closer relationship to their health than any other condition of health which is capable of statistical expression.[22] Hence I have dwelt at some length upon density of population. If we could obtain a classification of only a portion of the population according to the amount of measured cubic space occupied and the causes of mortality we should, perhaps, be able to draw more definite and exact conclusions still.

Typhus fever was formerly very prevalent under conditions of gross overcrowding, and not only typhus fever but other

[15] Worin sind die Hauptursachen für die starke Verbreitung der Tuberkulose, &c., Aerztliche Mittheilungen, Baden 8 (1890), Kugler.

[16] Essai de Statistique comparée du Surpeuplement des Habitations à Paris et dans les grandes Capitales Européennes, par le Dr. Jacques Bertillon, Paris, Imprimerie Chaix, 1895.

[17] Comptes Rendus du 8me Congrès d'Hygiène et Démographie, Budapest, 1894.

[18] Des Logements surpeuplès à Paris en 1896, Société Française des Habitations à Bon Marché, Paris, 1899.

[19] Mittheilungen des Stat. Bur. der Stadt Leipsic, 12 Bd. (1877).

[20] The Distribution of Tuberculous Diseases in Glasgow, by Dr. A. K. Chalmers, medical officer of health, 1897.

[21] Annual Report of Medical Officer of Health of the London County Council, 1893.

[22] The House in Relation to Public Health, Dr. J. B. Russell, Transactions of the Insur. and Act Soc. Glasgow, 1887.

infectious diseases tend to diminish in prevalence with increase of cubic dwelling-space.

The phthisis death-rate shows a close relationship to density of persons in cubic space, and phthisis appears to stand almost in the same relationship to respiratory pollution as typhoid fever does to filth pollution. The respiratory diseases apart from phthisis are also influenced by impurities of the air and afford some measure of their effects, just as diarrhœal diseases, apart from typhoid fever, are regarded as bearing a relationship to impurities of the soil.

II.—EFFECTS UPON HEALTH OF CERTAIN KINDS OF HOUSES AND DWELLINGS.

It has already been mentioned that the crowding of cities with townships and townships with quarters are faults of municipal planning. The crowding of quarters with street-blocks and of street-blocks with buildings brings us to the consideration of streets and houses, with particular reference to the dwellings they contain and the health of the inmates.

Street blocks of houses.—This is a convenient term for the blocks of land isolated from each other by the surrounding streets and which are divided into the plots upon which the buildings stand. The effects of insufficiently separating street blocks from each other—that is, of allowing streets to be made too narrow—displays itself as one of the causes of unhealthiness of insanitary areas, the statistics of which have been considered, and that narrowing of streets directly tends to increase the mortality of a population will be seen from some statistics when considering back-to-back houses. Street blocks contain various kinds of buildings for commercial and for residential purposes and some types of the houses and dwellings have been subjected to statistical inquiry—for instance, back-to-back houses, stable-dwellings, tenement houses, cellar dwellings, and "flat" houses.

Back-to-back houses.—The results of statistical inquiries into the effects of back-to-back houses as constructed in the North of England vary in some minor points but agree in the main. The first statistics published were those of certain districts of Salford from 1879 to 1883 by Dr. Tatham, and they showed that parallel with the increase in the proportion of back-to-back houses in the groups selected the death-rates from all causes, pulmonary diseases, phthisis, and the principal zymotic diseases, and diarrhœa taken separately also progressively increased. Dr. Niven later confirmed these conclusions by statistics relating to the old township of Manchester from 1891 to 1894, and found further that with regard to age that in infancy and in advanced years there was also an excess of mortality in the back-to-back houses. The careful statistics of Mr. Herbert Jones from 1887 to 1892, comparing "through" houses in Saltaire with back-to-back houses in Shipley, showed that in the latter the mortality per 1000 from all causes was over one-third greater than in the former, from lung diseases nearly one-half greater, from zymotic diseases over one-half greater, and from diarrhœa alone over two-thirds greater. Collaterally they also furnished the required proof that in proportion to the disease in the width of streets the mortality progressively increases amongst a like population living under similar conditions. Dr. Arnold Evans also obtained confirmatory results of the increase of mortality with the increase in the population of back-to-back houses in the wards of Bradford in 1890–1892. The statistical results obtained by these medical officers of health are all set out in the table below, to which is also added the results I have obtained from the statistics of stable-dwellings, a class of dwellings similar in construction.

These statistics show that the mortality from all causes increases with the increase in the number of back-to-back houses and that the mortality from lung diseases, phthisis, the principal zymotic diseases, and diarrhœa alone increases in a similar manner, and that as the width of the streets diminishes the increase in the mortality from all causes, and these special causes, becomes more and more marked.

Stable-dwellings.—There are certain insanitary conditions that attract attention in mews. The houses are usually constructed in two storeys, with stables at ground level and dwellings over, and, like back-to-back houses, have only one front, the other three sides being generally without windows or doors and without back- or side-yards. The dwellings are frequently, in the absence of plaster ceilings and the presence of ill-fitting floor-boards, or by means of inside staircases, more or less open to the stables below. Beneath the dwelling-rooms are horses with their litter and manure, drain gullies (although these are generally properly trapped), and often water-closets under the stairs, sometimes unventilated. These conditions would incline one to expect that the mortality would indicate marked excess in the same causes of death as has been shown by observers in the case of back-to-back houses. And the more so because the roadways of the larger mews, formerly maintained by the owners, have been gradually left to the maintenance of public authorities, a course leading to the prohibition of placing manure and domestic refuse outside the stable-house on what has become public way and tending towards its retention under the dwelling-rooms.

In 1891 an inspection was made of the mews and stables in St. Pancras, and from the notes then made I have been able by means of careful compilation and revision to obtain

TABLE XIV.

—		Population.	Mortality per 1000 population. All causes.	Lung diseases excluding phthisis.	Phthisis.	Principal zymotic diseases.	Diarrhœa only.
Tatham,* Salford, 1879-83, Greengate and Regent-road sub-districts.	I. No back-to-back houses	8,713	27·5	6 6	2·8	4·5	1 42
	II. 23 per cent. back-to-back houses	11,749	29·2	7·8	3·3	4 8	1·55
	III. 56 " " "	11,405	30 5	7·9	3·6	6·2	2·12
	I. No back-to-back houses	54,264	26·1	5·7	2·7	4·9	1·54
	II. 18 per cent. back-to-back houses	8,773	29·1	7·5	2·7	4·9	1·85
	III. 50 " " "	4,380	37·3	8·6	4 5	7 6	2·83
Niven,† Manchester Old Township, 1891-94.	Selected districts. All houses	75,233	30·3	8·2	2·7	4 0	1·6
	Selected districts, back-to-back houses	9726	37·0	9·7	3·0	6 0	2·6
Herbert Jones,‡ Shipley, 1887-92.	Through houses (Saltaire)	4218	15 6	3·6	2·7	1·08	0·22
	Whole district of Shipley	16,000	16·2	4·0	2·3	1 7	0·22
	Back-to-back in 75 ft. streets	2200	18·1	4·9	2 8	1·3	0·22
	" " 45 ft. "	1245	22·5	5·7	4·1	1·8	0·4
	" " 30 ft. "	710	28·1	7·4	4·6	2 9	0·84
	" " total	4155	21·1	5·1	3·4	1·7	0·40
Arnold Evans,§ Bradford, 1890-92.	Six wards under 60 per cent. back-to-back	202,975	19·8	—	1·71	—	0·36
	Nine " over 60 " "		23·7	—	1 93	—	0·83
Sykes,‖ St. Pancras, 1890-92.	Stable-dwellings	2,766	27·4	8·0	2·28	4·8	1·66

* Joint Report upon Back-to-back Houses by Dr. Barry and Mr. P. Gordon Smith, F.R.I.B.A., Local Government Board, 1888. † Transactions of the Sanitary Institute, vol. xvi., 1895. ‡ Public Health, vol. v., 1892-93. § Transactions of the Epidemiological Society, vol. xv., 1895-96. ‖ In course of publication.

comparable returns of these premises. The number of adults and of children under 10 years living in each dwelling over the stables was also ascertained, so that an enumeration of the population was made in the same year as the census was taken. In conjunction with the census returns this renders it possible to compare the population under 10 years and 10 years and over living (1) in stable-dwellings, (2) in the whole of St. Pancras, and (3) in the whole of London. The deaths (corrected for public institutions) for the three years 1890, 1891, and 1892 were also extracted, and these also are comparable with the returns of St. Pancras and of London for the same three years. The superintendent registrar of St. Pancras, Mr. J. Stevens, has kindly extracted and supplied me with the number of births, and these, again, are similarly comparable. With the aid of these statistical bases and the kind assistance of Mr. S. M. Kaka, D.P.H., medical officer of health of Karachi, I have been able to prepare a series of tables that have been condensed into conveniently comparable compass and are attached hereto.

In examining the tables of population and mortality the first point that attracts attention is that in the stable-dwellings 34·9 per cent. of the population is under 10 years of age, compared with 21·6 per cent. in all St. Pancras and 22·7 in all London. The next thing is that the birth-rate is half as high again over stables as in the whole of St. Pancras and London. It is possible that this proportion is slightly exaggerated owing to the fact that whereas the population and the deaths in stable-dwellings were extracted for each dwelling, the births have been extracted in bulk for each mews, and a few houses not strictly part of the mews may have been included. On the other hand, this suggests that the death-rate of infants under one year per 1000 births, that stands at 193 in stable-dwellings as compared with 160 in St. Pancras and 157 in London, may be actually higher than it appears—possibly 200 or more per 1000 births. The fact remains that there is a high infantile mortality. The main causes of infantile deaths in stable-dwellings are the following, set out in table form and compared with St. Pancras and London:—

TABLE XV.—*Causes of Deaths under 10 years of age: mean of three years, 1890–91–92.*

Causes.	Mean number.	Stable-dwellings.		St. Pancras	London.	
		Death-rate per 1000 births.	Number.	Death-rate per 1000.	Number.	Death-rate per 1000.
Suffocation	1·6	12·3	48·0	6·8	1657·6	4·9
Bronchitis and pneumonia	8·0	61·9	210·3	29·9	3930·3	29·8
Measles and whooping-cough	1·6	12·3	81·3	11·5	1602·6	12·1
Diarrhœa	3·3	25·5	115·3	16·4	1857·0	14·1
Total of above ...	—	112·0	—	64·6	—	60·9

The total infantile mortality in stable-dwellings from these causes is nearly double that of St. Pancras and of London. Incidentally, compared with London in 1890–92, suffocation as a mode of death appears to have been more favoured in St. Pancras and most favoured in stable-dwellings. Measles and whooping-cough mortalities scarcely differ. Diarrhœa shows somewhat under a double death-rate, and bronchitis and pneumonia somewhat over a double death-rate, compared with St. Pancras and London.

The death-rate of infants under one year per 1000 of total population at all ages was in stable-dwellings 9 04, in St. Pancras 4·80, and in London 4·92, again showing a heavy infantile mortality, and the inference that a large proportion of the population consists of children. This is corroborated by the actual number of persons under 10 years of age compared with the number at 10 years and over, the proportions being, in stable-dwellings 100 to 186, in St. Pancras 100 to 361, and in London 100 to 341. The death-rate under 10 years of age in London is 38 7 per 1000 of population under 10 years, and 1 per 1000 higher in St. Pancras, and 2·3 per 1000 higher in stable-dwellings. Over 10 years of age per 1000 of population the mortality in London is 15·5, 1·6 higher in St. Pancras, and 4·6 higher in stable-dwellings.

In order to compare stable-dwellings with back-to-back houses the following table (XVI.) of mortality has been drawn.

Back-to-back houses show an excess in mortality from all causes, from pulmonary diseases, from phthisis, from the principal zymotic diseases, and from diarrhœa, taken separately. Stable-dwellings show an excess of mortality from the same causes, but not in the same proportion. The death-rate at all ages in the stable-dwellings is 5·4 above that of St. Pancras, and 7·4, or nearly one-third more, above that of London. That this is not mainly due to the high infantile mortality is seen from the fact that whereas the mortality under 10 years of age is 2·3 above that of London, the mortality of 10 years and over is 4·6 above that of London per 1000 of population living between the two respective age periods. The death-rate at all ages from the "principal zymotic diseases" is the same in St. Pancras and London—namely, 2·69 per 1000; but stable-dwellings show a rate 2·12 higher—namely, 4·81 per 1000. The diarrhœa death-rate, which appears as 0·62 per 1000 in London and 0·53 in St. Pancras, is three times as high in stable-dwellings—namely, 1 66 per 1000 population. Tuberculous diseases are 0·23 higher in St. Pancras than in London, and 0·20 higher in stable-dwellings than in St. Pancras, phthisis 0 20 and 0·11 higher per 1000 of population. One might expect higher results in back-to-back type of houses. Respiratory diseases show a high death-rate, 8·17, over stables, compared with 5 25 in St. Pancras and 4·93 in London. The rate is 3·24 higher than in London, but bronchitis and pneumonia alone show a still higher rate, approaching twice that of London. In the Registrar-General's last decennial report the mortality of cabmen and carmen from diseases of the respiratory system is given as 128 and 170 respectively, when 100 is taken as the standard of all occupied males, and the comparative figures for all engaged in various branches of transport service by road, rail, river, and sea is 147; but that the high rate in stable-dwellings is not due solely to occupation is shown by the high mortality from bronchitis and pneumonia amongst the home-dwelling infants. This is not due to poverty, as cabmen and carmen are not indigent as a class; the families of even the poorer are fairly cared for in food and clothing, and the better off are well fed and well clothed. If the last three double rows of

TABLE XVI.

	—	Population.	All causes.	Pulmonary diseases excluding phthisis.	Phthisis.	Principal zymotic diseases.	Diarrhœa alone.	Under one year of age.
Tatham,* 1897–83. Manchester,	Greengates, 56 per cent. back-to-back ...	11,405	30·5	7·9	3·6	6 2	2·12	—
	Regent-road, 50 per cent. back-to-back ...	4380	37·3	8·6	4·5	7 6	2·83	—
Niven,† 1891–94. Manchester,	Old Township, back-to-back...	9726	37·0	9·7	3·0	6·0	2·6	299·7
	,, all houses	75,253	30·3	8·2	2·7	4·0	1·6	279·1
Herbert Jones,‡ 1887–92. Shipley,	Back-to-back	4155	21·1	5·1	3·4	1·7	0·40	—
	Saltaire, "through"	4218	15 6	3·6	2·7	1·1	0·22	—
Sykes, St. Pancras, 1890–92.	Stable-dwellings	2766	27·4	8·0	2·28	4·8	1·66	193·3
	St. Pancras...	234,379	22·0	4·8	2·17	2·7	0·53	160·0

* Joint Report of Dr. Barry and Mr. P. Gordon Smith, F.R.I.B.A., Local Government Board, 1888. † Transactions of the Sanitary Institute, vol. xvi., 1895, p. 254. ‡ Public Health, vol. v., 1892–93, p. 347.

figures are taken and the excess mortality in the groups of back-to-back houses and in stable-dwellings over the groups of the other houses with which they are respectively compared are set out in tabular form the proportionate differences become apparent:—

TABLE XVII.

Locality.	All causes.	Pulmonary diseases, excluding phthisis.	Phthisis.	Principal zymotic diseases.	Diarrhœa.	Under 1 year of age.
Manchester ...	6·7	1·5	0·3	2·0	1·0	20·6
Shipley	5·5	1·5	0·7	0·6	0·1	—
St. Pancras ...	5·4	3·2	0·1	2·1	1·1	33·3

It is seen at once that in stable-dwellings there is an excessive mortality from pulmonary diseases and in infantile mortality and a lesser excess from phthisis. The probability appears that the vicissitudes of temperature in the occupations of the adults and the construction of the homes of the infants in stable-dwellings are prominent factors in the causes of mortality. Some stables are draughty during cleaning time when the stable doors and loft doors are open. Some stable roofs have no ceilings below to equalise the temperature. Some also have skylights over the back dwelling-rooms, although seldom open, and there are air-bricks in the back walls of some stables. Yet they show a high zymotic death-rate per 1000 of population, the individual diseases appearing as follows:—

TABLE XVIII.

Locality.	Small-pox.	Scarlet fever.	Diphtheria.	Fevers.	Measles.	Whooping-cough.	Diarrhœa.	Total.
Stable-dwellings	—	0·22	1·19	—	0·72	0·94	1·66	4·81
St. Pancras	—	0·18	0·48	0·12	0·61	0·63	0·53	2·69
London	—	0·21	0·37	0·13	0·67	0·68	0·62	2·69

The death-rates are very high from diarrhœa and diphtheria

TABLE XIX.—POPULATIONS, BIRTH-RATES, AND DEATH-RATES AT SEVERAL AGES, MEAN OF THREE YEARS, 1890–91–92.

Localities.	Population.			Births.	Birth-rates.	Deaths under one year.	Infantile mortality per 1000 births.	Deaths.			Death-rates.		
	Under 10 years.	10 years and over.	Total.					Under 10 years.	10 years and over.	Total.	Under 10 per 1000 population.	10 and over per 1000 population.	At all ages for united population.
Stable-dwellings (enumerated 1891)	965	1,801	2,766	129·3	46·7	25	193·3	39·6	36 3	76·0	41·0	20·1	27·4
St. Pancras (census 1891) ...	50,771	183,608	234,379	7029·6	30·0	1124·3	160·0	2015·3	3153·3	5168·6	39·7	17·1	22·0
London (census 1891)	955,782	3,255,961	4,211,743	131,657	31·2	20,753	157·6	36,981	50,567	87.548	38·7	15·5	20·8

TABLE XX.—THE PRINCIPAL ZYMOTIC DISEASES: NUMBER OF DEATHS AND DEATH-RATE MEAN OF THREE YEARS. 1890–91–92.

Localities.	Small-pox.	Scarlet fever.	Diphtheria and membranous croup.	Typhus fever.	Enteric fever.	Continued fever.	Measles.	Whooping-cough.	Diarrhœa.	Total.	Death-rate.	Diarrhœa death-rate.
Stable-dwellings	—	0·6	3 3	—	—	—	2·0	2·6	4·6	13 3	4·81	1·66
St. Pancras	0·6	42·0	111·6	—	28·3	0·6	143 0	147·3	123·6	630 6	2·69	0·53
London	17·6	879·6	1554·3	10·0	533·6	31·6	2830·2	2876·3	2607·6	11341·3	2·69	0 62

TABLE XXI.—RESPIRATORY DISEASES: NUMBER OF DEATHS AND DEATH-RATE MEAN OF THREE YEARS. 1890–91–92.

Localities.	Laryngitis.	Croup.	Emphysema, asthma.	Bronchitis.	Pneumonia.	Pleurisy.	Other diseases of respiratory system.	Total.	Death-rate from diseases of respiratory system.	Death-rate from bronchitis and pneumonia.
Stable-dwellings	—	—	—	17·6	4 6	—	0·3	22·6	8 17	3·06
St. Pancras	19·3	8·3	23·0	855·6	250·3	27·3	50·3	1232·0	5 25	4·72
London	216·3	352·3	577·0	12114·3	6324·6	343·6	851·3	20779 6	4·93	4·38

TABLE XXII.—TUBERCULOUS DISEASES AND SEPTIC DISEASES: NUMBER OF DEATHS AND DEATH-RATE MEAN OF THREE YEARS. 1890–91–92.

Localities.	Phthisis, pulmonary tuberculosis.	Tuberculous peritonitis, tabes mesenterica.	Tuberculous meningitis, acute hydrocephalus.	General tuberculosis, scrofula.	Total.	Death-rate from tuberculous diseases.	Death-rate from phthisis.	Septic diseases.				
								Puerperal fever.	Erysipelas	Pyæmia and septicæmia.	Total.	Death-rate.
Stable-dwellings	6·3	0·6	1 0	1 0	9·0	3 25	2·28	—	0·3	0·3	0 6	0·22
St. Pancras ...	509·3	76 0	59 6	70 6	715 6	3·05	2·17	7 6	8·3	7·3	23·3	0·10
London	8292·3	1332·0	1221·6	1029·0	11875 0	2·82	1·97	270·6	245·3	68·0	584·0	0·13

and high from whooping-cough, even when a number of unhealthy conditions are absent. For stables have no underground rooms or cellars and no ground floors below the level of the street and there is less liability to the rise of ground air under the dwelling-rooms and to the dampness of walls of the dwelling-rooms by capillarity.

The conclusions to be drawn are that the occupants of stable-dwellings have a high birth-rate and a high mortality under one year and at all ages and high death-rates from pulmonary diseases, both of infants and adults, and from the zymotic diseases, especially diarrhœa and diphtheria. These point to the effects of the vicissitudes of temperature affecting adults and unhealthy conditions at home affecting young children.

ON THE INFLUENCE OF OZONE ON THE VITALITY OF SOME PATHOGENIC AND OTHER BACTERIA.[1]

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AND

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THE influence of ozone on the vitality of bacteria is a matter which has received the attention of several investigators, but on reviewing the records of the results which have been arrived at it is obvious that such results have not always been consistent. We determined, therefore, to investigate this question anew, in the hope of being able to come to a definite conclusion. The matter seemed to us to be one of considerable importance, since if ozone were possessed of the bactericidal properties which have been attributed to it by more than one investigator the gas might prove of much value in solving one of the most unsatisfactory problems which have to be dealt with in the practice of modern sanitation—that is to say, the disinfection of rooms after the occurrence of infectious disease. Ozone can now be conveniently produced in large quantities, and, if efficient, would be admirably adapted to effect the purpose in view.

The question of the bactericidal action of ozone was especially brought into prominence by the classical work of Downes and Blunt, embodied in communications made to this society in 1877 and 1878.[2] Working with impure cultures of bacteria, these investigators showed that direct sunlight in the presence of atmospheric air was capable in some cases of preventing in greater or less degree, or in other cases of absolutely inhibiting, the growth of the particular bacteria experimented with; and that not only might growth be inhibited but that the bacteria themselves might be actually destroyed. Downes and Blunt further showed that so far as the destruction of bacteria is concerned the blue and violet rays of the spectrum are more effective than the red rays, that the interposition of a layer of water is sufficient to protect the bacteria to a certain extent, and that direct sunlight acting *in vacuo* may fail to destroy sporing bacteria.

Whilst this work of Downes and Blunt has been fully confirmed and amplified in certain directions by the work of others no satisfactory explanation has yet been arrived at as to exactly how it is that bacteria are destroyed under these conditions. The explanation that the result is a direct effect of the sun's rays—of heat—has been shown to be untenable; and it has therefore been assumed that the destruction is effected by chemical rather than by physical action—that it results from an active oxidation of the substance of the bacteria by ozone produced by the action of sunlight on atmospheric air. Others have regarded peroxide of hydrogen as the active agent.

Amongst the experiments which have been carried out in order to test this assumed bactericidal action of ozone we may particularly mention those of Chapuis,[3] Sonntag,[4] and Ohlmüller.[5] Chapuis filtered air through cotton-wool and then exposed plugs of the wool with the contained bacteria to the action of ozone. The plugs were afterwards incubated in a nutrient wort solution which remained sterile. Control plugs of the wool which had not been subjected to the action of the ozone gave rise to a free growth of bacteria when incubated in the same medium. Sonntag and Ohlmüller's experiments, on the other hand, seemed to show that ozone in the dry state had little or no action on bacteria but was capable of destroying them when passed through water containing them. Thus bacillus anthracis suspended in distilled water was destroyed after air containing 9·6 milligrammes of ozone per litre had been passed through the mixture for 10 minutes. A sporing culture of the same bacillus was killed by passing air containing 15·2 milligrammes of ozone per litre through the water for 10 minutes. If, however, organic matter, such as blood serum, were added to the water the results were different; and it seemed that under these latter conditions the most part of the ozone was expended in oxidation of the dead organic matter present, whilst the bacteria were little if at all affected.

Our experiments were planned with the view of ascertaining whether ozone applied in large quantities, either in a mixture with atmospheric air or with pure oxygen, has in reality a destructive influence on bacterial life, and especially whether it has any such influence under conditions which would enable it to be used for practical purposes of disinfection.

The experiments have included the testing of the action of ozone (1) on the vitality of certain pathogenic and saprophytic bacteria; and (2) on the virulence of one pathogenic species. For the purposes of the latter test we decided to test the action of the gas on bacillus tuberculosis, an organism which is known to be readily affected by the direct action of ordinary chemical agents and one which numerous experiments would lead us to believe is very susceptible to the action of direct sunlight (Koch,[6] Ransom and Delépine,[7] and Jousset).[8]

EXPERIMENT I.

In our first experiment culture tubes with "sloped" surface of nutrient agar or gelatin were inoculated with various bacteria; a mixture of atmospheric air and ozone was passed continuously over the inoculated surface for a period of at least four hours, commencing 24 hours after the tubes were inoculated. The tubes were then incubated at appropriate temperatures and the result compared with that obtained in control tubes which had been inoculated from the same stock cultures at the same time.

In detail the following was the procedure carried out. The culture tubes were of the ordinary 15 × 2 centimetre size, into the sides of which short pieces of 0·75 centimetre calibre glass tubing had been blown in such a way that they opened into the lumen of the culture tubes about three centimetres from the bottom and just above the lower level of the sloped nutrient surface and allowed the ozonised air to escape after passing over the bacteria. The culture tubes were closed at the upper end by a piece of cork through which passed a short length of the 0·75 centimetre tubing, which formed the inlet for the ozonised air. The inlet and outlet tubes were loosely plugged with cotton wool and by means of them and short lengths of indiarubber tubing the culture tubes could be connected up in series and sterile ozonised air drawn over the inoculated surfaces. Such culture tubes were inoculated with the following bacteria:—Glycerine-agar tubes: Nos. 1 to 6 with bacillus tuberculosis and Nos. 7 and 8 with bacillus mallei. Nutrient-agar tubes: Nos. 9 and 10 with bacillus diphtheriæ and Nos. 11 and 12 with bacillus anthracis (sporing). Nutrient-gelatin tubes: Nos. 13 and 14 with bacillus typhosus, Nos. 15 and 16 with micrococcus melitensis, and Nos. 17 and 18 with micrococcus candicans.

The tubes were then arranged in two series, those numbered from 1 to 12 being connected up in one series and those numbered from 13 to 18 in another. The two series of tubes were then placed in a room of about 900 cubic feet capacity and ozone was generated in the air of the room by means of four small "ozonisers," a three-inch spark Ruhmkorff coil and an accumulator battery being

[1] A paper read before the Royal Society on Feb. 14th, 1901.
[2] Proceedings of the Royal Society, vol. xxvi., p. 488; vol. xxviii., p. 199; and vol. xl., p. 14.
[3] Bulletin de la Société Chimique, 1881, tome xxxv., p. 290.
[4] Centralblatt für Bakteriologie, 1890, Erste Abteilung, Band viii., p. 778.
[5] Arbeiten aus dem Kaiserlichen Gesundheitsamte, 1892, Band viii., p. 229.
[6] Ueber Bacteriologische Forschung, introductory address, Tenth International Medical Congress, August 4th, 1890.
[7] Proceedings of the Royal Society, vol. lvi.
[8] Comptes Rendus de la Société de Biologie, 1900, tome lii., p. 884.

used. The "ozonisers" were kept working for four hours, during the whole of which time ozonised air was slowly aspirated through the tubes. At the end of four hours the arrangement of the tubes was altered; a fresh series, including those numbered from 3 to 12 and from 15 to 18, being connected up, and pure oxygen charged with ozone was forced through the tubes for a period of 30 minutes. During this half hour ozonised air was still being drawn through No. 13 and No. 14. The culture tubes were then incubated, No. 1 to No. 12 at 37° C., and No. 13 to No. 18 at 22° C., the respective control tubes being incubated with them. The result of the experiment was that in the case of two out of the seven species tested there seemed to have been some slight retardation of growth as the result of the exposure to the ozone; that is to say, in the case of one or both of the duplicate tubes containing bacillus mallei and bacillus diphtheriæ the growth of the experimental cultures seemed at first to be rather slower than it was in the corresponding control tubes. But at the end of eight days' incubation all difference between the experimental and control tubes had disappeared and growth was equal in both sets; and in further experiments this effect was not obvious. In the case of the other five species not the slightest effect could be observed as the result of the exposure. The experiment was carried out under conditions which, although they might approximate to those which would prevail in the actual use of ozone as an aerial disinfectant, were not adapted to test the action of ozone on bacteria apart from an important disturbing factor. The bacteria were submitted to the action of ozone in the presence of a large amount of dead organic matter, and it was quite conceivable that such an amount of the ozone might have been decomposed in the oxidation of the dead organic matter that but little had been left to exert any action on the living bacteria.[9]

EXPERIMENT II.

In this experiment we endeavoured to test the action of ozone on the bacteria in the absence—so far as we could insure the condition—of dead organic matter. The same culture tubes were used, but instead of inoculating agar or gelatin nutrient surfaces we inoculated small blocks of plaster-of-Paris from stock cultures of the various bacteria tested. These plaster-of-Paris blocks when inoculated were placed in the culture tubes and the inlet and outlet tubes were plugged with fine Italian asbestos fibre instead of with cotton-wool. And instead of passing the same current of ozone over a series of tubes in succession we connected each tube separately with a main feeding pipe with lateral branches, the respective tubes being held in contact by pieces of indiarubber tubing. Thus each culture tube had a fresh supply of ozone. Ozone was generated as before and passed over blocks inoculated from stock cultures of the following: (1) staphylococcus pyogenes aureus; (2) streptococcus pyogenes; (3) micrococcus melitensis; (4) Bacillus mallei; (5) bacillus diphtheriæ; (6) bacillus anthracis (from sporing culture); (7) bacillus typhosus; (8) bacillus coli communis; (9) bacillus pyocyaneus; (10) bacillus pneumoniæ (Friedländer); (11) bacillus prodigiosus; and (12) saccharomyces albicans.

Duplicate tubes were inoculated with each organism and a continuous current of air was pumped over the ozoniser, which was inclosed within a glass cylinder connected with the main feeding-tube and then through the culture-tubes for a period of 30 minutes. The actual amount of ozone used was not estimated, but iodide of potassium and starch paper held over the outlet tubes gave a positive reaction within 60 seconds of the commencement of the experiment. The small plaster-of-Paris blocks were then shaken up in tubes containing 3 cubic centimetres of nutrient broth, from the broth tubes loopfuls were transferred to other media, and the growth obtained after incubation compared with the growth on control tubes.

The results obtained on incubating the sub-cultures made it evident that none of the bacteria had been affected by the ozone in such a way as to impair either their capability of growth or in the case of the two chromogenic bacteria their function of pigment production. The pathogenic action of a broth sub-culture of bacillus mallei after the ozonisation was tested by intra-peritoneal inoculation of a male guinea-pig; an ordinary infection with characteristic lesions followed, the animal dying within 48 hours.

[9] We are indebted to Mr. Bridge, chemist, of Bournemouth, for assistance in the working of the ozonising apparatus used in carrying out this experiment.

EXPERIMENT III.

We now decided to subject the bacteria to a rather more severe test than had been involved in the two preceding experiments. The ozone was produced by passing oxygen under pressure from a cylinder over a powerful "ozoniser" inclosed within a glass cylinder, and then into the main feeding tube, as in the previous experiment. The current used was an alternating one direct from the street main. Small pieces of porcelain were, after inoculation with the following bacteria, placed in the culture tubes: (1) sarcina ventriculi; (2) micrococcus melitensis; (3) micrococcus candicans; (4) bacillus mallei; (5) bacillus diphtheriæ; (6) bacillus anthracis (from 24-hour old culture in broth, non-sporing); (7) bacillus anthracis (from old sporing culture on potato); (8) bacillus typhosus; (9) bacillus coli communis; (10) bacillus pyocyaneus; (11) bacillus pneumoniæ; and (12) bacillus prodigiosus.

Duplicate tubes of each species were used for the experiment, the first attempt to carry out which resulted in failure owing to the action of the ozone on the pieces of india-rubber tubing by which the branches of the main feeding-tube and the inlets into the culture tubes were held in contact. Before the mixture of ozone and oxygen had been passed into the series of culture tubes for 90 seconds every piece of indiarubber tubing was cut through as if with a knife. The joints were therefore made with pieces of bored cork and the experiment repeated. The mixture of ozone and oxygen was passed through the tubes at the rate of 1·5 litre per minute for a period of 30 minutes; the yield of ozone, as estimated by titration with $\frac{N}{10}$ iodide solution, amounted to 0·072 gramme per minute. The percentage amount of ozone was, therefore, about 2·4 by volume. At the end of 30 minutes the pieces of porcelain were dropped into tubes of nutrient broth and incubated. On comparison with the various controls it was obvious that the ozone had not affected the bacteria in such a way as to impair either their capability for growth or, in the case of the chromogenic organisms, their power of producing pigment. The broth sub-culture of bacillus anthracis (non-sporing) after 48 hours' incubation at 37° C. was tested on a white mouse and proved to be of normal virulence, 0·25 cubic centimetre of the broth culture injected into the peritoneal sac killing the animal within 24 hours in typical fashion.[10]

EXPERIMENT IV.

Although it seemed to have been conclusively proved by the experiments of Ohlmüller, already referred to, that ozone was capable of considerable bactericidal action when the organisms were suspended in certain fluids, we determined to carry out a single experiment, using milk as the medium. We used milk because we considered that it would, as containing a large quantity of organic matter, test the bactericidal action of the gas severely.

Five flasks, each containing 125 cubic centimetres of milk, were prepared as follows:—Flask 1 contained sterilised milk which had been inoculated with a culture of bacillus anthracis (sporing). Flask 2 contained sterilised milk which had been inoculated with a non-sporing culture of bacillus anthracis. Flask 3 contained ordinary fresh unsterilised milk, to which a quantity of a broth culture of bacillus prodigiosus had been added. Flask 4 contained ordinary fresh unsterilised milk. Flask 5 contained a sample of commercial "sterilised" milk which had "gone bad" owing to the presence in pure culture of an anaerobic, sporing, butyric acid forming bacillus. A current of oxygen containing the same proportion of ozone as that used in Experiment III. was passed through the milk in each of the flasks for a period of 20 minutes at the rate of 1·5 litres per minute. Loopfuls of milk were then taken from each flask, transferred to various culture media, and incubated under both aerobic and anaerobic conditions; the flasks with the bulk of the milk still remaining in them were also incubated.

In the result it was found that the contents of Flasks 1, 2, and 5 were sterile of bacteria. The milk used for Flask 3 and Flask 4 was taken from the same sample, and on incubation of the sub-cultures after ozonisation a growth of a mould-fungus was obtained from each flask; from Flask 3 a very free growth of the mould was obtained, but neither bacillus prodigiosus or any other bacterium; from Flask 4 a

[10] We are indebted to Mr. Wood Smith, F.I.C., for assistance in the working of the ozonising apparatus used in this experiment.

few colonies of a coccus were obtained in both aerobic and anaerobic cultures in addition to the mould which was present apparently in less quantity in the contents of Flask 4 than it was in the contents of Flask 3. In the case of the sub-cultures from Flask 3 the growth of the mould was very rapid and soon covered the surface of the medium, and so possibly checked the growth of the coccus which appeared on the sub-cultures from Flask 4, in which the mould growth was less abundant. A loopful of the milk used for Flask 3 and Flask 4 taken before ozonisation and smeared over nutrient agar gave, on incubation at 22° C., a large number of colonies of different bacteria; and it was apparent that the exposure to ozone had resulted in the destruction of a large majority of these, although complete sterilisation was not obtained as in the case of Flasks 1, 2, and 5. At the end of the experiment the milk in Flasks 1, 2, 3, and 4, although not changed in appearance, had acquired an extremely disagreeable taste and smell, which was in all probability at least partly due to the development of fatty acids. It seemed, therefore, possible that in the case of these milks, not only might the ozone have had a directly injurious action on the bacteria, but it might also have affected them indirectly by producing from the natural milk various bodies which might themselves also have to be considered as factors in the experiment. The milk in Flask 5 was in a late stage of decomposition and possessed of a most offensive odour; it was noticed that the offensiveness of this milk was considerably reduced after the passage of the ozone.

EXPERIMENT V.

Our next experiment was made in order to ascertain whether ozone had any influence on the virulence as apart from the mere vitality of bacillus tuberculosis and was carried out in the following way. Sputum rich in the specific bacillus was smeared over strips of filter-paper. These strips were then dried and afterwards exposed for varying periods to the action of highly-ozonised air. The exposure was insured by pinning out the strips on a board, which was hung about six feet from the same ozonising apparatus as that used in Experiment I. and in the same room. The apparatus was set at work two hours before the exposure of the sputum was commenced and was continued without intermission throughout the experiment. When the exposure was commenced the air of the room was so highly charged with ozone as to be extremely unpleasant and not respirable by anyone for more than a few minutes at a time. After undergoing exposures of the several durations given in the table below the strips of infected paper were moistened, stretched out on glass, and the surface which had been smeared with the sputum was scraped off lightly with the edge of a knife. The scraping from each strip was collected in a cubic centimetre of sterilised normal saline solution and doses of 0·2 cubic centimetre of the emulsions thus obtained were injected under the skin of the inguinal fold in guinea-pigs. As controls other guinea-pigs were similarly inoculated with some of the crude sputum and also with the scrapings from an infected strip of paper which had not been previously ozonised. 14 animals in all were inoculated; the following table gives their weights and the nature of the emulsion used for each:—

Animal.	Weight.	Inoculated with—
	Grms.	
Guinea-pig I.	500	Small quantity of crude sputum.
,, II.	470	,, ,, ,,
,, III.	390	Emulsion from filter-paper, not ozonised.
,, IV.	339	,, ,, ,, ,,
,, V.	420	,, ,, ,, ozonised ½ hour.
,, VI.	436	,, ,, ,, ,, ½ ,,
,, VII.	450	,, ,, ,, ,, 1 ,,
,, VIII.	455	,, ,, ,, ,, 1 ,,
,, IX.	390	,, ,, ,, ,, 2 hours.
,, X.	450	,, ,, ,, ,, 2 ,,
,, XI.	370	,, ,, ,, ,, 4 ,,
,, XII.	370	,, ,, ,, ,, 4 ,,
,, XIII.	410	,, ,, ,, ,, 8 ,,
,, XIV.	370	,, ,, ,, ,, 8 ,,

The various animals were either allowed to die naturally or were killed with chloroform after definite signs of tuberculous infection had developed. And it may at once be said that a severe infection occurred in all the animals; there was not the least indication that the ozonisation had exerted any effect whatever on the virulence of the bacilli. As examples we may mention the following animals: guinea-pig I. died on the twentieth day after inoculation with a caseous abscess in the flank, infected mesenteric glands, and tubercles in the spleen; guinea-pig II. was killed on the twenty-second day after inoculation and was found to be in a similar condition; guinea-pig XI. died on the twenty-second and guinea-pig XIV. on the twenty-third day, both being again in a similar stage. The presence of the specific bacillus in one or other of the internal lesions was proved in the case of every animal on the list.

CONCLUSIONS.

Our experiments have made it clear that ozone in the dry state, and in such strength as we used it, has no appreciable action on the vitality of the various bacteria experimented with, and, so far, our results are in accordance with those of Sonntag and Ohlmüller. Nor did a prolonged exposure to the action of ozone diminish in any way the pathogenic virulence of bacillus tuberculosis in sputum as shown by Experiment V. Single experiments would also tend to show that ozone can have little, if any, effect on the pathogenic virulence of bacillus mallei and bacillus anthracis.

On the other hand, Experiment IV. would appear to confirm the conclusion arrived at by Ohlmüller as to the bactericidal property of ozone when passed through a fluid medium containing bacteria in suspension.

A comparison of the inactivity of ozone as a disinfectant in the dry state with its action in the presence of water suggests a superficial resemblance with other gases, such as chlorine and sulphur dioxide. In the absence of further experiment, however, it would not be possible to press the analogy too closely.

In the dry state, and under the conditions in which it occurs in nature, ozone, then, is not capable of any injurious action on bacteria so far as can be judged from our experiments; and we conclude that any purifying action which ozone may have in the economy of nature is due to the direct chemical oxidation of putrescible organic matter, and that it does not in any way hinder the action of bacteria, which latter are, indeed, in their own way working towards the same end as the ozone itself in resolving dead organic matter to simpler non-putrescible substances.

ON THE QUANTITATIVE ESTIMATION OF THE BACTERICIDAL POWER OF THE BLOOD

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SECOND COMMUNICATION.[1]

IN a previous communication dealing with the quantitative determination of the bactericidal power of the blood I described the technique of a method by which the bactericidal power of blood could be determined. It will be remembered that for the purposes of the determination a measured volume of a series of graduated dilutions of serum were mixed in capillary cultivation-tubes, in each case with an equal volume of a liquefied gelatin culture containing in suspension an appropriate number of the species of micro-organism against which the blood was to be tested. Of the questions which arise in connexion with the above method two may be briefly dealt with here.

The first of these is the question as to whether in the case where no colonies develop in the mixture of serum and gelatin culture it may legitimately be inferred that a complete bactericidal effect has been achieved. This question can readily be determined by melting down the gelatin in the capillary cultivation-tubes and by blowing out their contents into a series of tubes of sterile nutrient broth. The results

[1] The first communication was published in THE LANCET of Dec. 1st, 1900, p. 1556.

that are obtained when this is done may be judged of by the observations set forth in the subjoined table (Table I.).

The second question relates to the influence exerted on the result of the quantitative estimation of the bactericidal power by the greater or smaller number of bacilli in the volume of culture brought in contact with the serum. The determination of this point manifestly involves on the one hand a determination of the number of bacteria present in the culture employed, and on the other hand a comparison of the effects of the serum when added to a series of graduated dilutions of the culture.

TABLE I.

Source of the serum.	Dilutions of serum which were mixed with the gelatin culture of the bacillus typhosus.	Number of days during which cultivation was continued.	Number of colonies detected on microscopical examination of the cultivation tubes.	Result of the introduction of the contents of the cultivation tubes into nutrient broth.
F. W (normal man)...	Tube 1 — 2 ,, 2 — 5 ,, 3 — 10 ,, 4 — 20 ,, 5 — 40	Two days.	Tube 1 — 0 ,, 2 — 0 ,, 3 — 0 ,, 4 — 3 ,, 5 — 81	Tube 1 — medium remains sterile. ,, 2 — ,, ,, ,, ,, 3 — pure growth of bacillus typhosus. ,, 4 — ,, ,, ,, ,, ,, 5 — ,, ,, ,, ,,
S. B. S. (recently twice inoculated with anti-typhoid vaccine)	Tube 1 — 2 ,, 2 — 5 ,, 3 — 10 ,, 4 — 20 ,, 5 — 40 ,, 6 — 80 ,, 7 —160	Two days.	Tube 1 — 0 ,, 2 — 0 ,, 3 — 0 ,, 4 — 0 ,, 5 — 0 ,, 6 — 0 ,, 7 — 0	Tube 1 — medium remains sterile. ,, 2 — ,, ,, ,, ,, 3 — ,, ,, ,, ,, 4 — ,, ,, ,, ,, 5 — ,, ,, ,, ,, 6 — pure growth of bacillus typhosus. ,, 7 — ,, ,, ,, ,,
R. T. B. (inoculated once, nine months previously, with anti-typhoid vaccine)	Tube 1 — 2 ,, 2 — 5 ,, 3 — 10 ,, 4 — 20 ,, 5 — 40	Two days.	Tube 1 — 0 ,, 2 — 0 ,, 3 — 1 ,, 4 — 8 ,, 5 — 36	Tube 1 — medium remains sterile. ,, 2 — ,, ,, ,,
A. E. W. (inoculated, 27 months previously, with anti-typhoid vaccine)... ...	Tube 1 — 2 ,, 2 — 5 ,, 3 — 10 ,, 4 — 20 ,, 5 — 40 ,, 6 — 80	Three days.	Tube 1 — 0 ,, 2 — 0 ,, 3 — 0 ,, 4 — 0 ,, 5 — 0 ,, 6 — 13	Tube 1 — medium remains sterile. ,, 2 — ,, ,, ,, ,, 3 — pure growth of bacillus typhosus. ,, 4 — ,, ,, ,, ,, ,, 5 — ,, ,, ,, ,, ,, 6 — ,, ,, ,, ,,
Normal horse blood...	Tube 1 — 2 ,, 2 — 5 ,, 3 — 10 ,, 4 — 20 ,, 5 — 40 ,, 6 — 80	Three days.	Tube 1 — 0 ,, 2 — 0 ,, 3 — 0 ,, 4 — 0 ,, 5 — 2 ,, 6 — 74	Tube 1 — medium remains sterile. ,, 2 — ,, ,, ,, ,, 3 — ,, ,, ,, ,, 4 — ,, ,, ,, ,, 5 — pure growth of bacillus typhosus. ,, 6 — ,, ,, ,, ,,
Normal rabbit's blood	Tube 1 — 2 ,, 2 — 5 ,, 3 — 10 ,, 4 — 20	Two days.	Tube 1 — 0 ,, 2 — 0 ,, 3 — 2 ,, 4 — 6	Tube 1 — medium remains sterile. ,, 2 — ,, ,, ,,
Blood of rabbit (after injection of an anti-typhoid serum)	Tube 1 — 2 ,, 2 — 5 ,, 3 — 10 ,, 4 — 20 ,, 5 — 40	Four days.	Tube 1 — 0 ,, 2 — 0 ,, 3 — 0 ,, 4 — 0 ,, 5 — 0	Tube 1 — medium remains sterile. ,, 2 — ,, ,, ,, ,, 3 — ,, ,, ,, ,, 4 — ,, ,, ,, ,, 5 — pure growth of bacillus typhosus.

The method of carrying out the required operations rapidly and efficiently may be briefly described, more particularly as the technique in question enables us, as will be seen below, to arrive at a definite arithmetical expression for the bactericidal power which is exerted by a given blood upon a given bacterial culture.

A series of graduated dilutions of a broth culture of the required species of micro-organisms are first made. In the case of a culture of the typhoid bacillus it will suffice to employ, in addition to the undiluted culture, dilutions of 10, 100, 1000, 10,000, and 100,000. These dilutions can be made by using the graduated capillary pipette figured in my former communication. It will, however, be conducive to rapid work if a "mixing chamber" is formed upon the neck of the capillary pipette by heating and drawing it out a little beyond the capillary stem. When this has been done 10, 20, 30, or more volumes of fluid can be drawn up and mixed together without emptying the pipette. Given such a pipette, the stem of which has been divided into six equal divisions of 2·5 cubic millimetres, the procedure for making a convenient quantity, say 30 volumes (0·75 cubic centimetre), of a tenfold, or any further tenfold multiple, of the bacterial culture would be as follows. Six volumes of sterile broth are first filled into the capillary stem; a bubble of air is then taken in; and, while the first six volumes of broth are passing up into the mixing chamber, another six volumes of broth; and so on in series until in all 27 volumes of broth and a final bubble of air have been taken in. Three volumes of the broth culture are now introduced into the stem of the capillary pipette. The whole contents are thoroughly mixed in the mixing chamber and are then expelled into a sterile and covered watch-glass.[2] After the pipette has been thoroughly washed

[2] The sterile watch-glasses required can be most expeditiously prepared by heating them on wire gauze until a red pencil mark placed on each with one of the pencils sold for writing on glass begins to blacken. The temperature indicated by the blackening of such red pencil marks is well over 200° C.

TABLE II.

Source of blood and nature of the bacterial culture against which it was tested.	Determination of the number of bacteria in the culture.		Result of the enumeration of bacteria in the original culture.	Determination of the bactericidal power of the serum.		Bactericidal power of the blood as estimated from the foregoing.
	Dilutions of the culture and volume of these dilutions employed for the bacterial enumeration.	Number of colonies which developed from the specified volume of diluted culture.		Dilutions of the bacterial culture which were mixed in equal volume with undiluted serum.	Result of the cultivation when the mixtures particularised in the last column were after 24 hours planted out on nutrient agar or broth.	
Blood of A. E. W. tested against an 18-hour peptone and salt cultivation of the cholera vibrio.	5 c.mm. of a 1 in 100,000 dilution.	Tube 1—20 ,, 2—21 Average = 20·5	1 c.mm. of the culture contains 410,000	Undiluted. 10-fold dilution. 100- ,, ,, 1,000- ,, ,, 10,000- ,, ,, 100,000- ,, ,,	One colony on agar. No growth. ,, ,, ,, ,,	1 c.mm. of serum kills nearly 410,000 of the cholera vibrios employed
Blood of A. E. W. (inoculated 27 months previously with anti-typhoid vaccine) tested against a broth cultivation of the bacillus typhosus ...	5 c.mm. of a 1 in 100,000 dilution.	Tube 1—21 ,, 2—30 Average = 25·5.	1 c.mm. of the culture contains 510,000	10-fold dilution. 100- ,, ,, 1,000- ,, ,, 10,000- ,, ,, 100,000- ,, ,,	Eight colonies on agar. One colony ,, ,, No growth. ,, ,,	1 c.mm. of serum kills nearly 5100 of the typhoid bacilli employed.
Blood as above mixed in vitro with an equal volume of an anti-typhoid serum tested against the broth culture as above	As above.	As above.	As above.	100-fold dilution. 1,000- ,, ,, 10,000- ,, ,, 100,000 ,, ,,	Growth in broth. ,, ,, ,, ,, ,, ,,	1 c.mm. of the mixture of sera fails to kill 5 of the typhoid bacilli employed.
Blood of R. T. B (inoculated once nine months previously with anti-typhoid vaccine) tested against a 10-day old broth culture of the bacillus typhosus ...	Tubes 1 and 2, 2·5 c.mm. of a 1 in 100,000 dilution. Tube 3, 5 c.mm. of same dilution.	Tube 1—39 ,, 2—29 ,, 3—69 Average in 2·5 c.mm. = 34.	1 c.mm. of the culture contains 1,360,000	Undiluted. 10-fold dilution. 100- ,, ,, 1,000- ,, ,, 10,000- ,, ,, 100,000- ,, ,,	No growth in broth. ,, ,, ,, ,, ,, ,, ,, ,,	1 c.mm. of serum kills at least 1,360,000 of the typhoid bacilli employed.
Blood of A. E. W. tested against the culture as above ...	As above.	As above.	As above.	Undiluted. 10-fold dilution. 100- ,, ,, 1,000- ,, ,, 10,000- ,, ,, 100,000- ,, ,,	Numerous colonies on agar. Three colonies ,, ,, No growth. ,, ,, ,,	1 c.mm of serum kills nearly 136,000 of the typhoid bacilli employed.
Blood of A. E. W. tested against a 48-hour old broth cultivation of staphylococcus albus	Tubes 1 and 2, 5 c.mm. of a 1 in 10,000 dilution. Tubes 3 and 4, 5 c.mm. of a 1 in 100,000 dilution. Tubes 5 and 6, 5 c.mm. of a 1 in 1,000,000 dilution.	Tubes 1—12 ,, 2— 6 ,, 3— 1 ,, 4— 1 ,, 5— 0 ,, 6— 0 Average in 5 c.mm. = 0·95.	1 c.mm. of the culture contains 19,000	Undiluted. 10-fold dilution. 100- ,, ,, 1,000- ,, ,, 10,000- ,, ,, 100,000- ,, ,, 1,000,000- ,, ,,	Growth on agar. ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,	* 1 c.mm. of serum fails to kill 0·2 of the staphylococci employed.

* With a view to determining whether, in default of a definite bactericidal effect, an inhibitory effect was exerted by this serum on the growth of the staphylococcus a determination of the anti-bacterial power was made also by the gelatin method described in my previous communication. This determination, in addition to resolving the particular point referred to, yielded results which are of interest here as establishing the substantial accuracy of method of enumeration employed above. The details of the procedure and the results obtained were briefly as follows. Five cubic millimetres of the undiluted staphylococcus culture were placed in 16 cubic centimetres of liquefied sterile nutrient gelatin and were thoroughly mixed. *This gelatin thus represented a 3200- (200 × 16) fold dilution of the original broth culture of staphylococcus.* From this gelatin four serum and four control tubes were filled in as follows:—

Serum Tubes.

—	Filled in with—	Number of colonies which developed.
No. 1	2·5 c.mm. of gelatin culture + 2·5 c.mm. of serum.	0
No. 2	2·5 c.mm. of gelatin culture + 2·5 c.mm. of serum.	0
No. 3	2·5 c.mm. of gelatin culture + 2·5 c.mm. of serum.	0
No. 4	2·5 c.mm. of gelatin culture + 2·5 c.mm. of serum.	0

Control Tubes.

—	Filled in with—	Number of colonies which developed.
No. 1	2·5 c.mm. of gelatin culture + 2·5 c.mm. sterile broth.	7
No. 2	2·5 c.mm. of gelatin culture + 2·5 c.mm. sterile broth.	14
No. 3	5 c.mm. of gelatin culture + 5 c.mm. sterile broth.	26
No. 4	5 c.mm. of gelatin culture + 5 c.mm. sterile broth.	24

Average of all the controls, 11·5 in 2·5 c.mm., 4·6 in one c.mm., of the gelatin.
Average (omitting from consideration control No. 1), 13·0 in 2·5 c.mm., 5·2 in one c.mm., of the gelatin.
Multiplying by 3200, the factor corresponding to the dilution of the original culture in the gelatin, we arrive at the figures of 14,700 and 16,640 respectively for the number of staphylococci in the original culture. The latter figure in particular is in fairly satisfactory agreement with the result of the enumeration as set forth in the table.

out in boiling sterile water the same procedure is repeated in the case of each further dilution with the difference that the last three volumes are filled in, instead of with the undiluted culture, with the previous dilution of that culture.

Having in this way obtained the required dilutions the enumeration of the number of bacteria contained in the last dilution—or, if desired, in the last two dilutions—would be taken in hand. For this purpose one volume of the dilution or dilutions in question are introduced along with one volume of liquefied, sterile nutrient gelatin into a "capillary cultivation-tube." This is done by the methods already described in my former communication. With a view to checking the accuracy of the work such tubes are in each case filled in in duplicate and triplicate. By enumeration under the microscope of the number of colonies, developing in the tubes thus filled in, the number of bacteria in the measure (2·5 or 5 cubic millimetres) of diluted culture is elicited. From this by a simple arithmetical calculation the number of bacteria in the unit measure of undiluted culture is obtained.

After the completion of the procedures which subserve the purpose of the bacterial enumeration, those directed to the determination of the bactericidal effect of the blood on the various dilutions of the bacterial culture are taken in hand. For this purpose a series of sedimentation-tubes, such as those figured by me in THE LANCET of March 6th, 1897, p. 657, are taken in hand, after they have been plugged with cotton-wool and sterilised in the flame. Into each of these is introduced one volume of undiluted serum and one volume of typhoid culture, the successive tubes being of course filled in with the successive dilutions of the culture. Mixture of the contents is then effected in the mixing chamber, and the tube is sealed after the mixture has been driven down for a moment to the point of the stem, so as to secure that any bacteria which have been left there shall be brought into contact with the serum. The sealed tubes are then incubated at 37° C. for from 18 to 24 hours. After this they are blown out with aseptic precautions either into nutrient broth or upon the surface of an agar plate.[3] The results obtained in a series of successive estimations made by this method are as follows (Table II.).

The conclusions which can be gathered from the results set forth in the tabular statement above may be summarised as follows:—

1. What is measured by the gelatin method described in my former communication is rather the total *anti-bacterial power* of the blood than the bactericidal power proper. To determine how much of the result which is registered is referable to an inhibition of the growth of the bacteria, and how much to a direct bactericidal action, it is necessary, after the cultivation-tubes have been incubated and examined microscopically, to melt down the gelatin and to blow out the contents of the tubes into sterile nutrient broth.

2. Where it is desired separately to estimate the *bactericidal power* this can readily be done by making a series of graduated dilutions of a bacterial cultivation in broth, and by mixing, in the manner described in the present communication, one volume of each of these with one volume of undiluted—or, if necessity should arise, diluted—serum. This method may appropriately be applied when we are dealing with bacteria such as the vibrio of cholera or the typhoid and diphtheria bacillus, which are readily killed off by the normal human blood.

3. When the method last in question is employed, and when the bacteria in the culture employed have been enumerated in the manner indicated, a convenient arithmetical expression for the bactericidal power is obtained by specifying the number of micro-organisms which one cubic millimetre of serum is capable of killing.

4. Where (as in the case of the staphylococcus and apparently, also, in the case of the streptococcus and bacillus of plague) we have to deal with bacteria which are not killed off, or which are killed off only in small numbers, by the normal human blood, or, again, where we are dealing with conditions (such as those frequently met with in persons recently convalescent from typhoid fever) when the blood has lost much of its normal bactericidal power, the gelatin method, measuring as it does the combined inhibitory and bactericidal power, may appropriately come into application.

Netley.

[3] The difficulties incident to the swamping of the agar-plate by water of condensation can, in conformity with a suggestion which I owe to Major W. B. Leishman, R.A.M.C., be avoided by fastening a pledget of absorbent cotton-wool down with gum on to the lower surface of the lid of the Petri's dish.

RESULT OF MAJOR AMPUTATIONS

TREATED ANTISEPTICALLY IN THE ROYAL INFIRMARY, NEWCASTLE-UPON-TYNE, DURING THE YEAR 1899, AND FOR A PERIOD OF TWENTY-ONE YEARS AND NINE MONTHS—VIZ., FROM APRIL 1ST, 1878, TO DEC. 31ST, 1899, INCLUSIVE.

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MR. F. PAGE has asked me to carry on the record of major amputations performed in the Royal Infirmary, Newcastle-upon-Tyne.[1]

TABLE I.—*Table of Major Amputations treated Antiseptically in the Royal Infirmary, Newcastle-upon-Tyne, during the Year 1899.*

—	Injury.			Disease.			Total.
	No.	Recovered.	Died.	No.	Recovered.	Died.	
Double amputations	3	2	1	—	—	—	3
Hip-joint	—	—	—	—	—	—	—
Thigh...	5	4	1	16	14	2	21
Knee-joint	3	3	—	2	2	—	5
Leg	7	6	1	6	6	—	13
Ankle-joint	3	3	—	7	7	—	10
Shoulder-joint ...	—	—	—	—	—	—	—
Arm	3	3	—	3	3	—	6
Forearm	7	6	1	1	1	—	8
Wrist...	1	1	—	—	—	—	1
—	32	28	4	35	33	2	67

During the year 1899 67 major amputations—three of which were double amputations—were performed on 64 patients, six of whom died and 58 recovered. The mortality was, therefore, at the rate of 9·3 per cent. Of the 32 cases of amputation for injury four patients died, or a mortality of 12·5 per cent. There were 25 cases of primary amputation and four deaths—a mortality of 16 per cent. 35 of the amputations were for disease and in two cases the patients died—a mortality of 5·7 per cent. In one of the double amputations the amputations were primary in the legs; unfortunately both stumps had to be re-amputated owing to sloughing of the flaps. The patient nevertheless made a good recovery.

PRECISE CAUSE OF DEATH AFTER AMPUTATION FOR INJURY.

1. *Double amputation.*—A man, aged 46 years, was knocked down by a train and sustained such injuries that a double amputation was performed in the right leg by Teale's amputation, and on the left side amputation through the lower third of the thigh. He died 77 hours after from acute spreading gangrene of the right leg. The bacilli of malignant œdema were found in the discharge of the stump and surrounding tissues. There was an abrasion of the skin of the flaps, and it was thought that the bacilli had entered there in spite of thorough cleansing. As soil and dirt were ground into the legs it was suggested that the bacilli were already in the lymphatics at the time of the operation. The operation was performed six hours after the accident.

2. *Thigh.*—A man, aged 45 years, died three days after amputation of the thigh performed for a crushed leg from shock.

[1] THE LANCET, March 21st, 1896, p. 763.

3. *Leg.*—A man, aged 22 years, died 14 hours after an amputation of the leg just above the ankle. He was knocked down by an engine and in addition had a lacerated thigh and a fractured pelvis. He was infused with four pints of normal saline solution.

4. *Forearm.*—A man, aged 78 years, was knocked down by a cab on July 26th, 1899. He had a scalp wound, was concussed and lost a lot of blood from his hand being nearly severed. Amputation in the middle of the forearm was performed. The wound healed, but he gradually became exhausted and died on August 5th, never having properly shaken off the effects of the shock.

PRECISE CAUSE OF DEATH AFTER AMPUTATION FOR DISEASE.

1. *Thigh.*—A man, aged 39 years, had a sarcoma of the thigh. Amputation was performed on March 28th; the femoral glands were affected and it was necessary to tie the femoral artery and vein at Poupart's ligament, as they were involved. The flaps became gangrenous; septicæmia followed and he died on March 31st.

2. *Thigh.*—A man, aged 56 years, had his thigh amputated for senile gangrene of the foot. The operation was done on July 11th and he died on the 14th from exhaustion.

TABLE II.—*Result of Major Amputations treated Antiseptically in the Royal Infirmary, Newcastle-upon-Tyne, from April 1st, 1878, to Dec. 1st, 1899—a Period of 21 Years and Nine Months.*

—	Injury.			Disease.			Total.
	No.	Recovered.	Died	No.	Recovered.	Died.	
Double amputations	27	14	13	—	—	—	27
Hip-joint	8	3	5	36	22	14	44
Thigh	100	77	23	280	260	20	380
Knee-joint	13	12	1	10	8	2	23
Leg	135	119	16	130	127	3	265
Ankle-joint	51	50	1	175	173	2	226
Shoulder-joint	28	26	2	19	18	1	47
Arm	70	63	7	37	36	1	107
Forearm	68	65	3	38	38	—	106
Wrist	8	8	—	—	—	—	8
—	508	437	71	725	682	43	1233

In the above record 1233 major amputations have been performed in the Royal Infirmary, Newcastle-upon-Tyne. Of this number 1119 patients have recovered and 114 have died—a mortality of 9·2 per cent. 508 cases were those of amputation for injury and 71 patients died—a mortality of 13·9 per cent.; 725 were for disease and 43 patients died—a mortality of 5·9 per cent.

Newcastle-on-Tyne.

A METHOD OF

DISTINGUISHING BACILLUS COLI COMMUNIS FROM BACILLUS TYPHOSUS BY THE USE OF NEUTRAL RED.

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THE question of the relationships between the bacillus typhosus and the bacillus coli communis has played an important part in the bacteriological investigation of cases of enteric fever. Since Eberth, Gaffky, and Koch published their papers on the constant presence in the intestine, spleen, and other organs of a characteristic bacillus in cases of typhoid fever, there has been much controversy as to whether this bacillus—the bacillus typhosus—is merely a variety of the bacillus coli communis. Although the majority of bacteriologists are of opinion that these micro-organisms are specifically different, so eminent an investigator as Gabriel Roux has all along maintained that the physiological tests which are utilised for the differentiation of the two micro-organisms are insufficient to establish a specific difference between them. As Lehmann and Neumann [1] remark, it is quite possible that the bacillus typhosus may only be a variety of bacillus coli communis—a variety which has lost certain zymogenic but gained certain pathogenic characters.

Considerable attention has been paid to the biological characters of the two organisms in order to distinguish the one from the other. Although many tests—as the indol reaction, the milk test, the reaction with glucose litmus agar, &c.—have been extensively used in order to diagnose between them it is found by repeated examination of different strains of these microorganisms that there is scarcely one of the many tests which may not fail. Many investigators have repeatedly demonstrated that bacillus coli communis may, under certain circumstances, lose even its power of producing indol and of coagulating milk. For instance, Lembke [2] has found that certain strains of bacillus coli communis fail to produce gas in media containing glucose; Scheffler [3] found that the production of acid may fail, and according to Lehmann and Neumann the bacillus typhosus may occasionally, though rarely, grow atypically upon potato, the growth resembling bacillus coli communis.

Even the agglutination test in distinguishing bacillus typhosus from bacillus coli communis is *not always reliable.* From the researches of Pfeiffer and others it was thought that this agglutination reaction would afford an absolutely reliable method of distinguishing these two micro-organisms from each other and from other micro-organisms belonging to the typhoid group. The recent researches of Mann,[4] Vedel,[5] Kohler and Scheffler,[6] and others, however, have shown that some races of the bacillus coli communis give a positive reaction even in high degrees of dilution with typhoid serum. In this connexion it is important to remember that sera obtained from patients suffering from enteric fever are in the majority of instances capable of agglutinating the bacillus coli communis as well as the bacillus typhosus. This, as Stern,[7] Biberstein,[8] Widal,[9] and others have shown, is due to mixed infection, one of the commonest occurrences in cases of enteric fever. An excellent example of this fact was published by Widal in 1897. The blood serum obtained from a convalescent typhoid fever patient agglutinated a strain of bacillus typhosus in the dilution of 1 in 20. A paracolon bacillus which he had isolated from an abscess of the thyroid gland, however, was agglutinated by this serum in the dilution of 1 in 12,000. Eight days later the agglutination reaction with the bacillus typhosus had disappeared, the paracolon bacillus, however, still giving the reaction in the dilution of 1 in 12,000. During the course of the disease the blood serum of this patient gave constantly an agglutination reaction with bacillus typhosus in the dilution of 1 in 100. That this case was one of secondary infection with bacillus coli communis is clear, and, as Widal concluded, the blood serum of the patient gave two distinct and independent reactions. The only sera, therefore, which can be employed for differential diagnosis are those obtained from animals immunised against the bacillus typhosus *in pure culture.* The maintaining of the bacillus typhosus in pure culture and at a constant degree of virulence during the process of immunisation, however, is a most difficult technical procedure. Unless excessive care is taken during the process of increasing the virulence of the bacillus typhosus contamination with bacillus coli communis will take place. If such cultures be employed for purposes of immunisation then coli agglutinating substances will also be present in the blood serum of the animal immunised. Therefore, so great difficulties being present the test cannot be regarded, as it is by some, as final. All that can be said at present is that given a suspected bacillus typhosus culture a negative result is of greater value than a positive reaction obtained with a suspected bacillus coli culture. At the present time, therefore, we possess no single test which can be considered crucial. Before coming to any definite conclusion each test

[1] Atlas und Grundriss der Bakteriologie, 1899.
[2] Archiv für Hygiene, Band xxvi., p. 299.
[3] Centralblatt für Bakteriologie, Band xxviii., p. 200.
[4] Archiv für Hygiene, Band xxxiv., 1899.
[5] Semaine Médicale, 1896, and Bulletin Médical 1896.
[6] Münchener Medicinische Wochenschrift. No. 22, 1900, p. 757.
[7] Centralblatt für Bakteriologie, 1898, Band xxiii., No. 16.
[8] Zeitschrift für Hygiene, 1898, Band xxvii.
[9] Semaine Médicale, 1897, and Comptes Rendus des Séances de la Société de Biologie, October, 1897.

has to be extremely carefully performed and taken in conjunction with the others. By such means only is it possible to distinguish the one micro-organism from the other.

Recently a good deal of attention has been directed to the use of coloured media as a means of diagnosing between morphologically and biologically related micro-organisms. Many of the methods proposed have been highly satisfactory, this being due mainly to the fact that the slightest change in the medium used is easily recognisable.

The first employment of colouring matter as a means of diagnosis between closely related micro-organisms was proposed by Neeggerath.[10] Shortly after other colour tests were proposed by Cahen,[11] Buchner,[12] Spina,[13] Kitasato and Weyl.[14] In order to distinguish bacillus typhosus from bacillus coli communis Wuntz[15] recommended the employment of a solid medium to which was added lactose and litmus. The further development of our knowledge in regard to the biological properties of these micro organisms soon showed that such a medium would not afford a reliable method of diagnosis. More recently a large number of colour tests have been recommended, the most important of these being the use of fuchsin agar, recommended by Gasser[16]; fuchsin and malachite green by Marpmann[17]; acid gelatin with methyl green by Uffelmann[18]; and a medium composed of lactose, urea, and litmus by Kashida.[19]

The great drawback to all these colour methods of diagnosis is that they do not afford any opportunity of *rapid* diagnosis. The majority have as their main constituent, gelatin, a substance upon which the bacillus typhosus and the bacillus coli communis grow relatively slowly. Therefore, as it is usually important to be able to give a rapid diagnosis as to the presence or absence of these micro-organisms it is obvious that the use of media containing gelatin must be avoided.

In 1898 Rothberger[20] published a series of results dealing with the action of a number of bacteria on various aniline colours. His results are specially interesting as he found that by the use of neutral red or saffranin, he had a valuable diagnostic method of distinguishing bacillus typhosus from bacillus coli communis. The method which he employed was agar-agar to which was added a small quantity of a concentrated watery and sterilised solution of neutral red or saffranin. The tubes containing this neutral red or suffranin agar were inoculated with bacillus typhosus and bacillus coli communis and incubated at 37° C. for 24 hours. According to Rothberger, the following result is obtained in the tubes which have been inoculated with bacillus coli communis. The neutral red agar becomes greenish yellow and markedly fluorescent. The saffranin agar becomes completely decolourised. In the tubes which have been inoculated with bacillus typhosus no perceptible change is produced in either of the media.

This result is very striking. From the further researches of Rothberger and the more or less confirmatory work of Scheffler,[21] the test appears to give constant results. During the past 18 months I have had frequent opportunity of studying the morphological and biological characteristics of the bacillus typhosus and bacillus coli communis, and from the results obtained I came to the conclusion that in a few cases it was scarcely possible to establish with absolute certainty the presence in pure culture of bacillus typhosus or bacillus coli communis. The publication by Rothberger of the results which he had obtained with neutral red appeared to me to be worthy of further study and the following are briefly the methods which I have employed and a summary of the results obtained. In order to determine the exact nature of the reaction the method which I adopted is as follows. To a number of tubes, each containing approximately 10 cubic centimetres of ordinary peptone agar, I added from 0·1 to 0·5 cubic centimetre of a concentrated watery solution of neutral red. The agar was then melted and the colouring matter evenly distributed throughout the medium. The tubes on being cooled down to about 42° C. were inoculated with one oese of a pure culture in bouillon of bacillus coli communis, and after thorough shaking incubated at 37°C. Control tubes with bacillus typhosus were prepared in exactly the same way. After 24 hours the tubes which had been inoculated with bacillus coli communis showed an abundant growth with marked gas production. The medium, instead of being of a deep red colour, had assumed a superb canary-yellow fluorescent tint. The fluorescence was most marked in the deeper parts of the tube. Further, slight liquefaction of the agar had taken place. The typhoid tubes, on the other hand, showed absolutely no change, although a good growth was obtained. After 48 hours the coli tubes were more or less completely decolourised and the fluorescence was decidedly less marked. The typhoid tubes still showed no change. This remarkable result having been obtained further experiments were made in order to determine as exactly as possible the most favourable conditions under which the method succeeds.

If plate cultivations of bacillus typhosus and bacillus coli communis be made with neutral red agar a somewhat surprising result is obtained. After 24 hours' incubation of the plates a marked decolourisation of the medium takes place. This change is as well marked in the typhoid as in the coli plates. Further, the medium is usually found to contain a large number of needle and star-shaped crystals of a reddish colour—probably crystals of neutral red or some product from it. On more minute examination of the plates the colonies of both micro-organisms appear to have taken up a great deal of the colouring matter. The centre of each colony is constantly found stained of a deep red colour. After incubation of the plates for a few days the medium as well as the colonies of both micro-organisms becomes completely decolourised. No fluorescence is ever observed. The red crystals already mentioned remain unchanged. I have obtained similar results in plate cultures prepared with glycerine agar and peptone gelatin. Somewhat similar results have been obtained by Rothberger, who rightly concludes that this method of procedure is of no value. The only point of interest attached to this result is that it clearly proves that the bacillus typhosus is quite as capable as the bacillus coli communis of decolourising neutral red in plate cultures.

By far the most satisfactory results are obtained with shake or stab cultures. Ordinary agar gives usually good results, but glucose agar is to be preferred. My results agree with those obtained by Scheffler that the quickest and most constant results are obtained with glucose agar. Usually some idea as to the presence or absence of bacillus coli communis can be obtained in from 12 to 24 hours. There appears to be some difference of opinion as to the amount of glucose required. According to Scheffler 0·3 per cent. glucose gives the best results. My experience leads me to believe that the development of the fluorescence depends to a great extent upon the amount of glucose present. If present in small quantity, a marked fluorescence is developed after 24 hours; if, on the other hand, glucose be present in the amount of from 1·5 per cent. to 2 per cent., little of this fluorescent appearance is met with, the majority of the tubes being of a uniform yellow colour. In my opinion too great stress is laid upon the occurrence of fluorescence by Scheffler, the change in colour from red to yellow in from 12 to 24 hours being a sufficient guarantee of the presence of bacillus coli communis. As already mentioned, gelatin cannot be used. The reaction, however, although slow in appearance, occurs equally well, the fluorescence and yellow colour being in some cases markedly developed. Here, again, glucose gelatin gives the most satisfactory results. Upon bouillon the reaction also succeeds. On this medium the fluorescence is only faintly developed. After 24 hours the broth is usually of a uniform yellow colour. Similar results have been obtained with liquid blood serum, peptone water, milk, &c. A point of great interest in connexion with the occurrence of the reaction upon different media is the negative result obtained by the use of a proteid free medium. If neutral red be added to Uschinsky's medium which is then inoculated with bacillus coli communis absolutely no change in colour is produced, although a good growth is obtained.

Since commencing my experiments with neutral red I have tested a number of strains of bacillus coli communis and bacillus typhosus, and under the conditions specified I have obtained absolutely constant results. Bacillus coli communis always produces a fluorescence and change of colour in the neutral red media in 24 hours, bacillus typhosus never.

[10] Centralblatt für Bakteriologie, Band iii., p. 481.
[11] Zeitschrift für Hygiene, Band ii., p. 386.
[12] Archiv für Hygiene, Band iii., p. 361.
[13] Centralblatt für Bakteriologie, Band ii., p. 71.
[14] Zeitschrift für Hygiene, Band viii., p. 44.
[15] Bulletin Médical, 1891, No 100.
[16] Semaine Médicale, 1890.
[17] Centralblatt für Bakteriologie, Band xvi., p. 817.
[18] Berliner Klinische Wochenschrift, 1891, No. 35.
[19] Centralblatt für Bakteriologie, Band xxi., p. 802.
[20] Ibid., Band xxiv., and Band xxv., pp. 15 and 69.
[21] Ibid., Band xxviii., p. 199.

Through the kindness of Mr. W. C. C. Pakes of Guy's Hospital I have had the opportunity of submitting to this neutral red test a culture of the so-called bacillus enteritidis of Gaertner. In all of the tubes inoculated with this bacillus a marked reduction of the neutral red took place in less than 24 hours. The reaction was indistinguishable from that obtained with typical coli cultures. This result is extremely important, as it brings forward additional proof that the bacillus enteritidis is merely a variety of bacillus coli communis as suggested by Lehmann and Neumann. The majority of cultures of micro-organisms, as staphylococcus, streptococcus, pneumococcus, bacillus diphtheriæ, bacillus mallei, bacillus anthracis, bacillus pyocyaneus, and vibrio choleræ, &c., which I have had at my disposal have been submitted to this test, but *in no case* has the slightest reduction taken place. At the same time the reaction cannot be regarded as specific. As found by Rothberger bacillus tetani, bacillus œdematis maligni, and the bacillus Chauvæ also give the reaction. As these micro-organisms, however, possess so many definite points of distinction of their own this can scarcely affect the value of the reaction in regard to bacillus coli communis. Further, Scheffler has obtained the reaction with a number of micro-organisms isolated from water and fæces. Probably these belong either to the coli group, which is extremely large, or to the already mentioned anaerobic forms.

The reaction must be regarded as a process of reduction as suggested by Rothberger and conclusively proved by Rambouséek.[22] Neutral red is an extremely irreducible substance. It is only when nascent hydrogen has acted on a solution for some time that the characteristic fluorescence and yellow colour are produced. This being so, it is easy to understand why the bacillus typhosus fails entirely to effect the slightest change in colour in the neutral red, the powers of reduction of the bacillus typhosus being extremely slight. The members of the coli group, on the other hand, are well known as powerful reducing agents.

Conclusions.—1. That bacillus coli communis possesses to a marked degree the power of reducing neutral red, producing a superb canary yellow fluorescent colour of the medium. 2. That the so-called bacillus enteritidis of Gaertner also produces this reaction, and is probably only a variety of bacillus coli communis. 3. That the bacillus typhosus never possesses this power of reduction. 4. That the common pathogenic micro-organisms do not give this reaction. 5. That by means of neutral red it is possible within from 12 to 24 hours to diagnose with absolute accuracy the presence of bacillus coli communis. Finally, as far as my experience goes, it is possible to diagnose by means of neutral red the true coli group from the typhoid group of micro-organisms.

London Hospital, E.

[22] Archiv für Hygiene, Band xxxviii., 1900.

NOTE ON A CASE OF INFLUENZA WITH MENINGITIS AS A COMPLICATION.

BY ARTHUR FOSTER, M.D., C.M. EDIN.

A WOMAN, aged 54 years, the mother of two children, was in perfect health up to Jan. 28th, 1901. On awakening on the morning of the 29th she was suffering from pains in the back and legs, with a sore-throat and headache. She did not remain in bed, however, but endeavoured to follow her occupation, with the result that during the afternoon she had to relinquish it, the pain in the back having become very acute. The following morning (the 30th) I saw her for the first time. She then complained of intense pain in the lumbar region, aching pains in the legs and shoulders, a sore-throat, and some headache. There had been no delirium and she talked quite rationally. On examination slight tonsillitis was to be seen; the tongue was thickly coated with a white fur, the bowels were constipated, the lungs were healthy, the urine was free from albumin, the temperature was 103·5° F., the pulse was 95 per minute, and the respirations were 25 per minute. She was given a mixture containing tincture of nux vomica and salicylate of soda. On the 31st she was in much the same condition, though the pain in the back was rather better. The next morning (Feb. 1st) the headache was more severe and there was nausea, which during the day developed into attacks of vomiting and for which the usual remedies were of no avail. The temperature was now 104°, the pulse was 90, and the respirations were 36. At 6 P.M. of the same day the temperature quickly dropped to 97° (taken in the mouth), the pulse was regular (72), and the respirations were 26. She now began to have difficulty in speaking and swallowing and became drowsy. During the night the temperature gradually rose again and on the morning of the 2nd it had reached 103·5° with a pulse of moderate tension at 72 and a respiration, accompanied by puffing out of the lips, of 50. She was quite unable to talk or to swallow, had troublesome attacks of hiccough, and was in a state of stupor. Rigidity in the muscles of the neck and retraction of the head now became very marked, strabismus appeared, muscular tremors were to be felt and seen in the face, arms, and legs, there was partial paralysis of the muscles of one side of the face, and the urine was passed unconsciously. It was clearly evident that a severe case of meningitis had to be dealt with and icebags were freely applied to the head. On the morning of the 3rd the temperature was 101·5°, the pulse was 70, and the respirations were 72. The patient was now comatose and could not be roused. In the evening of the same day the action of the heart, which had previously been quiet, became so tumultuous that it shook the bed and during the night the temperature fell below normal and she passed quietly away.

There does not appear to be any doubt as to the diagnosis of influenza, though at first the acute pain in the back suggested small-pox, which the subsequent events disproved. Moreover, the son, who resided with his mother, was at the same time passing through a mild attack of influenza.

Deaths from meningitis supervening on influenza would appear to be rare, though Althaus[1] considers it a frequent complication. Two forms of it are described: 1. That in which there is a simple benign lesion, seldom fatal and which according to Maxime[2] is due to the special action of the toxins secreted by the influenzal microbes, producing inhibition phenomena, toxins which appear to have a predilection for the nerve-centres and for which the cerebro-spinal fluid serves as a receptacle. Althaus[3] in a series of post-mortem examinations has also noted this predilection for the nerve-centres, having found intense hyperæmia in the pia mater and brain, particularly at the base of the brain. 2. That in which the lesion is more severe, generally fatal, and in which the streptococcus, staphylococcus, or other bacilli play an important part. Cases of this kind have been described by Bristowe,[4] Nicolson,[5] and Judson Bury.[6] No necropsy was obtainable in the above recorded case and it is impossible to be sure as to what was the exact nature of the meningitis. There was certainly no history of ear disease or other septic trouble. Perhaps it may be of interest to note that for some weeks previously to her illness she had been worried and had suffered much mentally by family troubles.

Blackburn.

[1] Influenza, p. 133.
[2] THE LANCET, April 13th, 1895, p. 948.
[3] THE LANCET, Feb. 13th, 1892, p. 387.
[4] Brit. Med. Jour., vol. ii., 1891, p. 7.
[5] Quoted by Althaus, Influenza, p. 135.
[6] Brit. Med. Jour., vol. ii., 1900, p. 877.

THREE CASES OF CERVICAL SPINA BIFIDA TREATED AS OUT-PATIENTS BY OPEN OPERATION.

BY JAMES H. NICOLL, M.B. GLASG.,

CONSULTING SURGEON TO THE EAR HOSPITAL, EXTRA SURGEON TO THE CHILDREN'S HOSPITAL, ASSISTANT SURGEON TO THE WESTERN INFIRMARY, AND CONSULTING SURGEON TO THE LUNACY BOARD, ETC., GLASGOW.

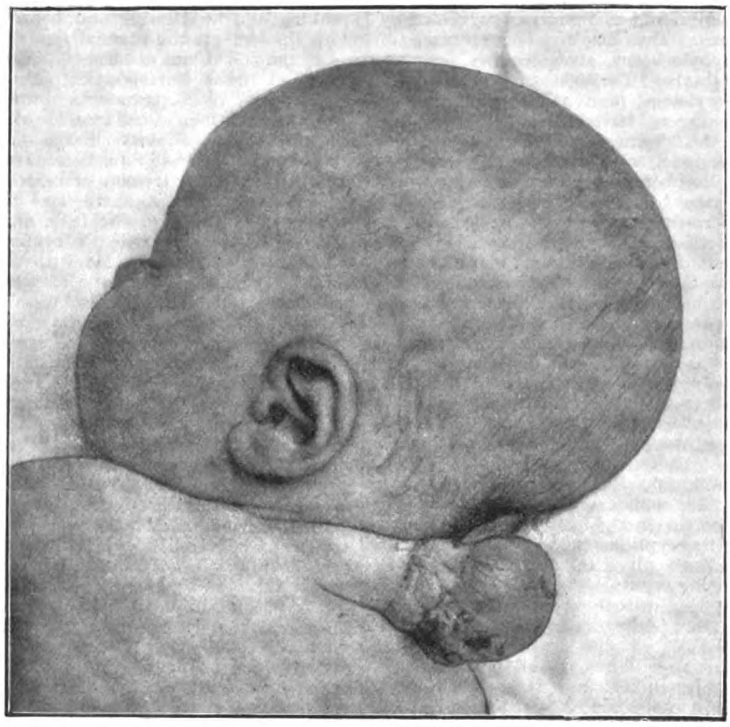
CASE 1.—The patient came to the Glasgow Children's Hospital, at the age of seven weeks, on June 15th, 1900. Fig. 1 is a reproduction of a photograph taken on that date. Pinching of the neck of the sac between the finger and thumb produced smart jerking upward of the lower limbs after the manner of the wooden figure toy on pulling the string. On June 19th, chloroform being administered by the house surgeon, Dr. J. R. Chalmers, the tumour was removed.

There was nothing special to note in the operation except that the cord took a geniculate curve into the neck of the sac, to cover which the lateral flaps had to be made longer than usual. The child was sent home after operation and was nursed by the mother under the directions of one of the sisters. The wound healed by first intention and the sutures were removed on the seventh day.

CASE 2.—The patient came to the Children's Hospital Dispensary in the end of July, 1900, at the age of two months. Fig. 2 is a reproduction of a photograph taken at that time.

CASE 3.—This patient, who came the same week as the patient in Case 2, was aged five months. A photograph was taken at that time. Unfortunately, it was taken on a plate which had just been used for a case of talipes and so was spoiled.

FIG. 1.



Cervical spina bifida. Meningocele into the neck or peduncle of which the spinal cord bulges in the form of a loop. Photograph taken four days previous to operation.

FIG. 2.

Cervical spina bifida. Pure meningocele. Photograph taken a week before operation.

Both cases were operated on on August 7th, 1900. Chloroform was administered by the house surgeon, Dr. Chalmers. Both proved to be pure meningoceles and the operations offered no points of special interest. The children were sent home after operation and were nursed by their mothers under the directions of one of the sisters. Both healed by first intention, the sutures being removed on the seventh day.

Fig. 3 is a reproduction of a photograph of the patients taken in the early part of October. At that time they were all well, as they are now. They were shown to the Glasgow Medico-Chirurgical Society at a meeting on Nov. 2nd, 1900.

FIG. 3.

CASE 2. CASE 1. CASE 3.

Photograph of the three cases of cervical spina bifida after excision of the sacs. The patients at this date are aged four months, seven months, and seven months respectively. Operation—Case 1 three and a half months, and Case 2 and Case 3 two months previously.

Remarks.—Spina bifida is not uncommon in the cervical region (though, of course, comparatively much less frequent than in the lumbar region). I have operated on a number of cervical cases, one of which, operated on at the Children's Dispensary in 1896, was, like the three foregoing cases, successfully treated as an out-patient, the child being nursed by the mother under the directions of one of the sisters.

Of all cases of spina bifida, those of the cervical region are the best suited for post-operative treatment as out-patients. I have, however, treated cases of the affection in the lumbar region as out-patients after operation and have shown such cases to various medical societies. With properly selected cases I have found the results satisfactory. To insure success selection is less concerned with the infant than with the mother and her circumstances. Given a tiny infant the chances of success in the mother's care, provided she is intelligent and can devote the first few days entirely to nursing under specific instructions, are quite as good as in the wards of an average hospital. The ideal conditions such as may be obtained in private cases include nursing by the mother and by two nurses in addition.

It is not necessary here to detail the steps of the operation carried out in these three cases. Full accounts of the different methods which I have followed in cases of spina bifida and in cases of hydrocephalus may be found in a paper on the subject in the Glasgow Hospital Reports (vol. ii., 1900), and in an earlier paper read at the meeting of the British Medical Association in Edinburgh and published in the *British Medical Journal* (Oct. 15th, 1898) and *Pædiatrics* (1899).

Glasgow.

A CASE OF FRACTURE OF THE STERNUM.

BY J. SACKVILLE MARTIN, M.D. EDIN., M.R.C.S. ENG.

A SHORT note on this uncommon variety of fracture may be of interest to readers of THE LANCET.

A man, aged 23 years, was working in the pit on Dec. 5th, 1900. He was leaning forwards, his body bent at right angles to the legs, when a truck which was passing crushed him against a "stack" or upright piece of wood used in keeping up the roof of the gallery. The direction of the force applied was laterally from shoulder to shoulder, and from the fact that his position caused the shoulder to drop forwards the force would naturally act anteriorly to the mid-axillary line. He complained principally of stiffness and soreness about the shoulder-joint and this led me at the time to overlook the condition of the sternum. Five days afterwards, however, I found a very definite projection over the left side of the manubrium sterni running vertically downwards. The stiffness of the shoulder had passed off, but any movement which involved bringing the left arm forwards caused pain. On pressing with one finger on the projection and the other on the first rib, crepitus could be elicited. I was inclined to diagnose fracture of the sternum, but being aware of its rarity, hesitated to do so without a further opinion. Mr. J. E. Platt, surgeon to the Manchester Royal Infirmary, to whom I sent the patient, confirmed the diagnosis and very kindly wrote to me stating that, in his opinion, the fracture started at the supra-sternal notch and ran downwards and to the left, reaching the edge of the manubrium below the attachment of the first costal cartilage. The detached fragment was somewhat displaced forwards. He also had a skiagram taken, unfortunately with a negative result.

Fractures of the sternum are rare and the form usually described in text-books is a transverse one caused by a heavy weight forcibly flexing the spine and doubling the trunk upon itself. In this case we have a crushing force acting laterally upon the sternum through the line of both clavicles. The clavicles form with the manubrium sterni an arc, and opposing forces applied to both extremities would tend to approximate them and to throw a strain on the centre of the arc. The sudden direct impact of the force through the clavicles combined with this approximation of the arc's extremities probably caused the fracture and would account for the forward displacement of the loose fragment. It is a matter for surprise that the clavicles should have remained uninjured. A fracture of the clavicle, or even a dislocation at the sterno-clavicular joint, would have been a more common result of such an injury.

It is of interest to note the small amount of disability caused by the fracture. The patient could perform any movements of the left arm five days after the accident and only those associated with the action of the pectoralis major caused him pain. The only treatment adopted was to keep the left arm in a sling, and on Jan 22nd the fracture

had quite healed and the arm could be used freely without causing him pain. There is, however, a definite ridge, the result of the deformity produced by the displacement of the fracture. I am indebted to Mr Platt for permission to make use of the information he so kindly gave me.

Leigh, Lancashire.

A CASE OF CEREBRO-SPINAL MENINGITIS.

BY FRANCIS RILEY, M.B., B.S. LOND., F.R.C.S. ENG.

IN view of the rarity of sporadic cases of this disease in England it is of some importance that individual cases should be put on record, and the following case presents several points of interest.

A girl, aged five years, who had previously been in good health except that she had been noticed to be lethargic in the mornings, was suddenly attacked with headache and vomiting followed by convulsions. No cause could be assigned except that she had knocked her head against the bedpost in the morning. The same evening the temperature was 103·5° F., and as it remained about the same

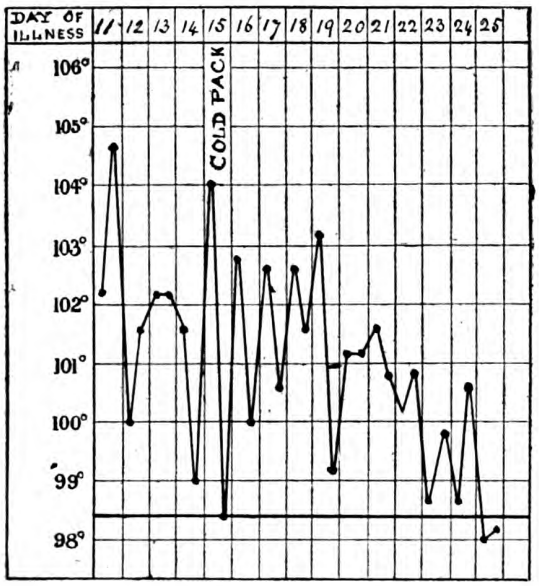


Chart showing the irregular temperature and transition from reversed to normal type.

for several days and all the organs were sound, the suspicion of enteric fever was entertained. On the fourth day it was noticed that the head was retracted and there was slight opisthotonos. The patient was drowsy but answered questions and was irritable when aroused. Both superficial and deep reflexes were abolished except for slight extension of the hallux on plantar stimulation (Babinski's sign). Painful sensation was apparently both diminished and delayed and the *tache méningitique* was easily obtainable. Only slight headache was complained of after the onset and both pulse and respiration were regular. Sitting up was evidently painful owing to spasm of the cervical muscles, when some difficulty in respiration became manifest. The abdomen was not retracted and no enlargement of the spleen could be made out. The bowels were obstinately confined. Strabismus or facial spasm was absent. On the fifth day a well-marked rash, partly erythematous and partly petechial (the former resembling the rose-spots of enteric fever), was noticed on the trunk and extremities and disappeared in the course of a few days. Pain was complained of in one knee and on the dorsum of the foot which was thought to be slightly swollen. On ophthalmoscopic examination the discs were found to be congested, and the pupils reacted slowly to light.

As the case progressed the temperature still remained high—on one occasion reaching 104·6°—and was markedly irregular. During the acute stage the morning reading was considerably higher than that taken in the evening (reversed type), but as the patient began to improve the temperature became lower and showed the normal evening rise. The pulse, regular at first, afterwards became irregular, while the respiration for a short time took on a Cheyne-Stokes type. There were slight ptosis of the left eyelid and photophobia. The reflexes, at first abolished, now became increased, and instead of anæsthesia there was hyperæsthesia. Retraction of the head became more marked, whilst the body was kept in a state of general flexion. There was much irritability, with grinding of the teeth and picking at nose and lips. The child became much emaciated and patches of chloasma appeared on the abdomen and flexor surfaces. The skin over the dorsa and soles of both feet was markedly glossy and shiny owing to the loss of trophic influence (glossy skin of Paget). Occasionally there was vomiting, with a clean tongue, and the urine, which was very dark in colour, was passed unconsciously and smelt very foul.

After about four weeks the patient began to improve, the retraction of the head became less, the pulse and respiration became regular, the hyperæsthesia disappeared, and cutaneous sensibility once again became dulled and the reflexes almost absent. The temperature returned to the ordinary type as convalescence became established and averaged between 99° and 100°. There were still occasional attacks of vomiting apparently brought on by trifling variations in diet or by sudden changes in the weather, especially when accompanied by thunderstorms. The total duration of the illness until the patient was able to leave her bed was three months.

The treatment consisted in the application of an icebag to the nape of the neck and during the severity of the fever another was applied to the vertex. A mixture containing bromide and iodide of potassium was given at first to allay irritability and to promote absorption, but as it sometimes provoked vomiting it was not persevered with. As the collapse became more marked small quantities of brandy were given by the mouth and heat was applied to the extremities, and when vomiting interfered with the retention of food rectal enemata were administered. The bowels were kept open by frequent small doses of calomel.

The origin of the illness was obscure, though it is noteworthy that the only other child in the same house contracted diphtheria three weeks after the onset. The surroundings and sanitation appeared to have been good, except for a tub of pig-wash at the rear of the house which was condemned by the medical officer of health. The diagnosis, which was first suspected to be typhoid fever, was placed beyond a doubt by the well-marked spinal symptoms and the appearance of the purpuric eruption which gives the disease the synonym of "spotted fever." Tuberculous meningitis was negatived by the absence of symptoms pointing to an extensive involvement of the cerebral meninges and of any tuberculous focus elsewhere, nor was any history obtainable of a discharge from the nose or ear as a possible cause of purulent meningitis. The presence of Babinski's sign in this disease has not, I think, been before recorded, and the reversed type of temperature is of interest. Herpes labialis, observed so frequently by Tourdes, von Ziemssen, and others, was absent. No definite arthritis, which is so frequently associated with cerebro-spinal meningitis, could be recognised, though pain was complained of in the knee and over the dorsum of one foot, which was thought to be slightly swollen. Headache was conspicuous by its absence, after the initial onset being only once or twice complained of. It is remarkable that after the dulness of intellect noticed in the early stage the mental faculties were preserved throughout and that the untoward sequelæ recorded by other observers, such as various paralyses and eye and ear changes, did not occur, although the emaciation was profound and only gradually recovered from.

Sale, Manchester.

SOCIETY OF APOTHECARIES OF LONDON.—At the recent examination held by the Society of Apothecaries for assistants, out of 83 candidates only 31 passed. The examination showed very superficial knowledge on the part of those who failed

FOUR CASES IN WHICH PAIN WAS RELIEVED BY SUPRARENAL EXTRACT.

BY E. A. PETERS, M.D., B.C. CANTAB.,
SENIOR CLINICAL ASSISTANT, THROAT HOSPITAL, GOLDEN-SQUARE.

IN spite of the extensive medical literature of the present day it is noticeable that a very small amount of matter dealing with the relief of the pain of cancer exists. The text-books usually instruct that such cases should be treated with rest, nourishment, and antisepsis and remark that morphia locally or hypodermically will be required: and yet few subjects have caused the practitioner of medicine more continued anxiety and trouble. Numerous are the operations which have been devised to eradicate carcinoma, but the requirements of a great many inoperable and re current cases are relief of pain without causing bodily harn . In fact, so great are the sufferings of a patient with a malignant ulcer that it is held to be good treatment, even when radical operations hold out little hope of permanent cure, to suggest surgical treatment with the object of avoiding the otherwise inevitable ulceration. It is agreed that hypodermic injections of morphia are by far the most potent in giving relief to this pain, and though such treatment may be deferred for some time it is eventually used. This use of morphia signalises the last stage, for the effect of morphia on the nutrition of the body is essentially bad. Morphia is destructive (Halliburton); it causes degeneration of the nerve cells and dissipation of Nissl's bodies similar to that brought about by extreme exertion or chloroform narcosis. The nausea, dyspepsia, and lassitude consequent on a dose of morphia are indicative of the same process. Under such circumstances the body has to contend with two poisons, cancer and morphia. Undoubtedly morphia must be used in many cases, but I would urge that local application of suprarenal extract will in many cases postpone the necessity for the narcotic drug.

When liquid suprarenal extract is applied to a part of the respiratory, intestinal, or genito-urinary or other mucous membrane a pallor spreads over the inflamed surface and usually obtains for two hours; even the pain of suppurative ophthalmia is eased somewhat. The pain of subacute inflammations, such as those of cancer and tuberculosis, is quickly and safely eased for two or more hours. Application of the extract once or twice in the 24 hours has reduced the usual pain to a minimum (see Case 1) and apparently the inflammatory condition subsides somewhat (see Cases 1, 2, and 3). The ultimate effect of suprarenal extract on these forms of inflammation cannot be stated; personally I have seen nothing untoward follow its use. Of the various preparations of suprarenal extract which are upon the market the liquid preparations have proved unsatisfactory in my hands. Burroughs and Wellcome have endeavoured to manufacture a reliable "soloid," but except in the case of the earlier specimens these attempts have failed. But an efficient preparation can at any time be prepared from the tabloids of the dried gland produced by that firm. Two tabloids, representing 10 grains of fresh gland, are powdered and placed in a test-tube with 100 minims of boiled water. The test-tube is stood in boiling water for from 10 to 15 minutes. The contents are then filtered; the opalescent filtrate presents a 10 per cent. watery extract, has a specific gravity of 1032, and contains about 2 per cent. of sodium chloride. If required solid cocaine hydrochlorate can be conveniently added to the cooled filtrate. This extract varies widely in keeping properties, and though after the addition of a little camphor it may keep some days it is better to prepare fresh sterile solutions. Some of the 10 per cent. watery extract has been injected subcutaneously into rabbits with no marked ill-effect until a proportion was reached when the 10 per cent. extract of one gramme of suprarenal gland was injected into 1000 grammes of rabbit; at this point a diminution of weight and fall of rectal temperature were noted. When the amount of extract was doubled a great fall of temperature occurred, together with a tendency to sepsis, local gangrene (compare ergot gangrene of our forefathers), and death. If the same proportion holds good in man it would be necessary to inject 22 ounces into a ten-stone man before ill-effects were produced. The fresh glandular extract was not used in any of the above described cases.

The following cases show that the application of a suitable suprarenal extract may be of great benefit in allaying the pain of cancer and other forms of chronic inflammation without any apparent deleterious effect.

CASE 1. *Recurrent scirrhus of mamma.*—The patient, a female, aged 89 years, was seen on July 13th, 1900. The left breast had been removed 12 years ago by Lord Lister. The patient was subject to "eczema." Recurrence commenced four years ago and there was now a red botryoidal mass adherent to a rib with an ulcer on each boss. The ulcers wept slightly. There was some œdema of the surrounding tissues and three dark blue patches. Five shotty and tender glands could be recognised in the axilla. The patient complained of pain around the growth in the axilla and down the back of the forearm to the tip of the middle finger. A weak permanganate lotion and vinolia cream had been used for some time as a local application. Orthoform dusted on relieved the pain, but this treatment was cut short by a severe eczematous dermatitis which spread over the greater part of the body causing some fever. The patient recovered from this in a week's time but complained that the pain due to the growth was becoming worse. On the 21st to ease the pain I prescribed five minims of nepenthe; it had the effect of only partially moderating it. At the end of the week I omitted the nepenthe as the digestion was completely upset. 4 per cent. cocaine was painted on but it did not insure a good night's rest. On Sept. 26th the patient was in fair health, but she complained of being kept awake by the pain around the growth and down the back of the arm and hand. 10 per cent. suprarenal lotion was painted on at 9 P.M. and it gave her freedom from consciousness of the presence of the growth till 6 A.M. She slept well. On Dec. 24th the patient was better. Her tongue was clean and her digestion was active. She went out occasionally for a short walk. The pain was severe at times, but it was decidedly less so than it had been previously to the use of suprarenal extract. The growth was paler and appeared smaller, but it was impossible to say if the growth or the glands were really diminished in size. The suprarenal lotion had been used night and morning for three months and was as effective as ever and a night's rest was secured by the use of the extract.

CASE 2. *Stricture of the œsophagus (? cancer).*—The patient in this case was a woman who came to me on Oct. 7th, 1899, complaining that for three months she had been troubled with mucus which she vomited up with some difficulty before she could effectively swallow food. Solid food always gave trouble and caused pain in the region of the xiphoid process. A No. 20 conical bougie passed, but was grasped near the cardiac orifice. The patient asserted that the bougie on touching the constricted part gave rise to pain such as she had previously experienced. As the patient had not improved after a month of medicinal treatment a No. 21 bougie was employed and it did not enter the stomach. The next note of the patient's case is dated Sept. 5th, 1900. The patient had had iodide of potassium and other drugs which had not prevented the progress of the dysphagia. She could take fluids, and this only after getting rid of the mucus, which collecting induced pain passing from the xiphoid process through the liver to the right side and the axilla. A No. 20 bougie was passed once or twice a month under gas; the mucus ejected was frequently stained with blood. The patient complained that her nights were bad on account of the pain. On Oct. 3rd, 1900, the patient looked ill and she ascribed this to her disturbed sleep. The organs were all apparently healthy. She was directed to sip slowly one teaspoonful of the 10 per cent. suprarenal extract before going to bed. On Dec. 20th the patient was obtaining complete relief by the use of the suprarenal extract and sleeping free from pain till from five to six o'clock in the morning, when she would eject the mucus. She told me that she omitted the suprarenal extract one night and slept well that night. A No. 20 bougie was passed and it induced a return of the old pain, which yielded at once when the suprarenal extract was sipped.

CASE 3. *Tuberculosis of the larynx* (under the care of Dr. Lambert Lack, who has kindly allowed me to publish the notes).—The patient, a man, aged 34 years, was seen on July 17th, 1900. There were œdema and ulceration of the arytenoid projections and the pain was great.

Dr. Lack scraped the affected part and constitutional treatment was instituted. Since then lactic acid paint had been freely used, but the sharp pain passing into the ears was still a source of trouble on breathing, coughing, or swallowing. On Dec. 4th 10 per cent. suprarenal extract was sprayed on at 4 P.M. The patient subsequently reported that the throat was free from soreness for two and a half hours, even on coughing. A dull pain returned, but the sharp pain was absent during the subsequent week. On Dec. 11th the patient described a dull ache in the throat and said that if his appetite would only improve he would get on.

CASE 4. *Periodontitis.*—The patient in this case, when seen on Nov. 10th, 1900, was suffering from periodontitis associated with considerable pain, which came on in paroxysms with shortening intervals. Cocaine, iodine, carbolic acid, and chloroform were all applied locally with little effect. A flat pledget of wool one and a half inches by one inch soaked in 10 per cent. suprarenal extract and kept tucked up between the lip and the gum gave great relief. The pledget had to be renewed every two to six hours. The gum felt dead after the application. A small abscess subsequently formed.

Cadogan-place, S.W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTES OF A CASE OF COMPLETE INVERSION OF THE PUERPERAL UTERUS.

BY GEORGE ELDER, M.D. GLASG.,
CONSULTING SURGEON, SAMARITAN HOSPITAL FOR WOMEN, NOTTINGHAM.

A PALE, nervous young primipara was delivered by Mr. J. T. Knight of Carlton with forceps in the absence of his partner, Dr. Sutherland. There was but little hæmorrhage; the placenta was easily expressed and the uterus was afterwards felt firmly contracted. The patient's recovery was uneventful until July 31st, so much so that for several days she had been up in her bedroom, on which date Dr. Sutherland had an urgent summons to go and see her as she had been taken suddenly ill. He found her in bed evidently suffering from severe shock, looking more than usually pallid with a very feeble and running pulse. There was also a slight bloody vaginal discharge. After a couple of days' rest she felt so improved that she was anxious to get up, but to this Dr. Sutherland would not consent without previously satisfying himself of her condition by a vaginal examination. This was done on August 3rd and to his surprise he found the uterus completely inverted and lying in the vagina. He thereupon tried to replace it but without effect. On the following day I saw her with him, and as the first attempt to replace the uterus had been so recently made and as urgent symptoms were absent it was thought better to wait a few days before making a second attempt. In the meantime hot antiseptic douches were to be used twice a day and the patient was to lie with her pelvis elevated. On August 11th, there being no amendment in the conditions, the patient was placed under an anæsthetic by Dr. Sutherland, and, with Mr. Knight assisting, the uterus was without much difficulty replaced by manual pressure, and to prevent recurrence the vagina was well packed with iodoform gauze. For the week following she kept her bed, and at the end of this time, her general condition being satisfactory and the uterus being normal in position, she was allowed to get up.

I am indebted to Dr. Sutherland for the above brief record of the case, to which I should like to add a few remarks which suggest themselves. Although this accident occurs, according to authorities, only once in about 144,000 cases of labour, yet, inasmuch as it is a danger to life which may present itself any day in the practice of every practitioner, it seems to me that the recital of every case must of necessity be of value. Given the necessary conditions for it—namely, an increased uterine cavity and general or limited relaxation of its walls—it is found that this accident may occur from several causes, singly or combined: (1) notably and mainly from forcible traction of the cord, although both Tyler Smith and Matthews Duncan held that as a causative factor this was much overrated; (2) from injudicious and violent abdominal pressure; and (3) from irregular muscular action. It is to this last category, which is obviously out of the control of the medical man, that I believe the above-mentioned case to belong; and although the full extent of the mischief did not declare itself until 18 days after labour, it is more than possible that a minor degree of it began then, and this acting as a foreign body in the uterine cavity stimulated the expulsive efforts which in time, assisted by the patient getting up out of bed, completed the process. Another point worthy of note is the small amount of bleeding observed as opposed to many recorded cases where death has been brought about by this cause alone. Manual re-position is generally sufficient for the treatment of recent cases, although one must not lose sight of the fact that the soft uterine tissues are peculiarly liable to bruising, with sepsis as a possible sequel, and to perforation and rupture.

Nottingham.

NOTE ON AN ANOMALOUS FORM OF QUININE ERUPTION.

BY G. NORMAN MEACHEN, M.B., B.S., L.R.C.P. LOND., M.R.C.S. ENG.,
SENIOR RESIDENT MEDICAL OFFICER, TOTTENHAM HOSPITAL, N.

A MARRIED woman, aged 23 years, was admitted into the Tottenham Hospital on Jan. 3rd, 1901, for pain and swelling of the left leg due to a chronic periostitis of the tibia. As she was pale and had had some fever, one grain of the sulphate of quinine was given with half a grain of the sulphate of iron in a mixture every four hours. Five days later numerous scattered reddish papules appeared on the face, shoulders, and extensor surface of the left leg. In the latter situation the papules, which were elevated above the surface, soon became vesiculo-pustular and showed some tendency to a circinate grouping. Itching was not a prominent feature and the pustules dried up and became absorbed without breaking, leaving a brownish discoloration. There was no faucial angina and the only other symptom of cinchonism present was headache.

The above case is instructive as showing that the quinine exanthem may, though rarely, exhibit itself in a pustular form. Morrow[1] states that although the prevailing type of the quinine eruption is erythematous, yet exceptionally it may be eczematous or purpuric. In two out of his 60 cases it was "vesicular." Moreover, the toxic effects of quinine as manifested in the skin are more commonly generalised, yet Elliott[2] of New York relates a case in which a bullous eruption due to quinine appeared on the feet. In this case it was on the leg that the rash was first noticed. I am indebted to Dr. Hooper May for kind permission to publish these notes.

Tottenham, N.

NOTE ON THE ADMINISTRATION OF AN ANÆSTHETIC TO A PATIENT WITH DOUBLE ABDUCTOR PARALYSIS.

BY OTTO F. F. GRÜNBAUM, B.C. CANTAB.

A RATHER thin, pale man, aged 24 years, was admitted to the West London Hospital for hæmatocele on Dec. 10th, 1900, under the care of Mr. Keetley, when an operation was deemed advisable. Upon the operation table the patient volunteered the information that he thought that his heart was weak, because he became breathless on running. (Many patients make these remarks under similar circumstances.) He was assured that his heart had been examined and showed no signs of disease and the administration of the anæsthetic was begun. The patient took gas well; he passed under the influence of ether and had nearly lost the cyanosis due to gas when he ceased breathing. A gag was inserted and his tongue was drawn well forwards, but,

[1] Drug Exanthemata, New York Medical Journal, 1880.
[2] Journal of Cutaneous and Genito-Urinary Diseases, New York, 1888.

no signs of voluntary respiration occurring, artificial respiration was resorted to without delay. Since the pupils continued to dilate while the passage of air into the lungs was accompanied by considerable noise, tracheotomy was suggested but not performed because the nature of the puff of air pressed out of the thorax during artificial respiration proved that there was a satisfactory air entry. Five minims of liquor strychninæ were injected. Two minutes later the pupils began to contract and after six minutes voluntary respiration with loud stridor began. Shortly afterwards the patient regained consciousness and recovered sufficiently to sit in a chair before the fire. He continued to gasp for breath, but showed that he had returned to sense and sensibility by a refusal to inhale any medication. The stridor gradually decreased and 40 minutes later it had disappeared. The following day the patient was feeling quite well. The character of the dyspnœa which occurred under anæsthesia suggested some laryngeal stenosis. On questioning the patient further about his breathlessness on exertion it was elicited that any exertion produced noisy stridulous breathing and, further, that this difficulty had existed as long as he could remember. On the 14th Dr. J. B. Ball was asked to examine the patient. He reported that both vocal cords lay near the middle line and on deep inspiration approached each other slightly, still further narrowing the glottic aperture. The condition appeared to be that of complete bilateral abductor paralysis. The appearance was not exactly typical as there was a slight obliquity in the line of the glottic aperture.

The object of recording the case is to add to the list of pathological conditions which may lead to death during the administration of an anæsthetic, but which (without exceptional examination), may not give any evidence of their existence during life or on the post-mortem table, however minute an investigation be made.

Ladbroke-grove, W.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

SAMARITAN FREE HOSPITAL.

A CASE OF HYSTERECTOMY FOR UTERINE FIBROID IN THE FIFTH MONTH OF PREGNANCY; RECOVERY.

(Under the care of Mr. ALBAN DORAN.)

A WOMAN, aged 40 years, a patient of Dr. J. Reid of Hammersmith, was admitted into the Samaritan Free Hospital on Sept. 24th, 1900, under the care of Mr. Alban Doran, on account of an abdominal tumour. She had been married for two years and had never been pregnant, but no period had been seen since May 25th, 1900, though she was quite regular up to that date. In April she strained herself when lifting a weight, and then for the first time she noticed a tumour. On Sept. 24th Mr. Doran examined her and discovered a firm, irregular mass at the level of the umbilicus and to the left, another hard mass in Douglas's pouch, and a softer tumour in the lower part of the abdomen, covered by intestine. All three were continuous, moving together. The cervix was high up under the pubes. The patient was sent home, it being intended to determine how far the growth would interfere with the advance of the pregnancy. On Oct. 9th the tumour was much larger, the souffle being heard plainly; the upper mass had shifted from the left at the umbilical level to the right, some way above the umbilicus. The cervix had risen still higher above the pubic arch, whilst the mass in the pelvis was not only larger but was now fixed. The breasts were getting full and an areola had developed around each nipple. Thus the fibroid was interfering seriously with the pregnancy.

The patient was readmitted into the hospital on Oct. 28th, when the pelvic mass was still more fixed. To attempt reduction would be dangerous, as the soft uterus lay between the hard pelvic mass below and the equally resistant mass above and might thus have been ruptured. Dr. Hubert Roberts examined the patient and was of opinion that hysterectomy would be advisable at once. Removal of the fœtus through the vagina would, considering the relations of the parts concerned, involve the danger of rupturing the uterus or setting up inflammation of the tumour. As for allowing the pregnancy to go on till term Cæsarean section would then be necessary, but the pelvic mass would by that time be very harmful to structures around it and pressure symptoms were already beginning. Delivery through the vagina at term would be impossible. The case was explained to the patient and she preferred immediate operation.

Mr. Doran operated on Nov. 1st, Mr. Butler-Smythe assisting and Dr. G. B. Flux administering chloroform. On opening the abdomen the pregnant uterus came in view. The upper mass was larger than it appeared on palpation; it reached upwards and backwards behind intestine, almost touching the liver. The uterus was raised and then the pelvic mass came into view; it sprang from the back of the uterus just above the cervix. With a little manipulation Mr. Doran succeeded in getting the pelvic mass up; it was firmly fitted into the pelvic cavity. The cervix was narrow. The ovarian and round ligament and uterine arteries on both sides were secured and the uterus was amputated. The patient's pelvis was then elevated, so that the stump could be easily kept in view whilst the flaps were united by suture. Lastly, the abdominal wound was closed.

Recovery was uninterrupted and the patient was discharged on Nov. 29th. On Feb. 1st, 1901, she was in excellent health and free from any discomfort. The uterus, with membranes intact, was sent to the Museum of St. Bartholomew's Hospital and has been mounted so as to show the fœtus and the relative position of the two myomatous growths.

Remarks by Mr. ALBAN DORAN.—Pregnancy in a uterus affected with myoma is specially serious when the new growth is situated in the posterior part of the lower segment or in the cervix for during pregnancy a fibroid tends to grow rapidly. Over 12 years ago I demonstrated the marked hyperplasia which occurs in the muscle-cells of a myoma in a monograph published in the Transactions of the Obstetrical Society of London.[1] When the growth springs from the fundus pregnancy may continue to term and labour may end spontaneously, whilst during the puerperium the tumour, homologous histologically with the uterus, will share more or less in the process of involution; but when the tumour springs from the back of the lower segment of the uterus pregnancy cannot proceed normally, pressure symptoms set in early, and operative interference becomes necessary. These are the cases where the presence of a fibroid is often unknown until revealed by the complications which arise during gestation. I have recently operated upon the above case, where I had he great advantage of being able to watch the pregnancy until it became evident that a tumour lay below and behind the uterine cavity and could not be pushed up out of the pelvis which it blocked.

Several somewhat similar cases have been recorded. McMurtry[2] operated on a woman, aged 34 years, in the fifth month of pregnancy. The only abnormal symptom observed by the patient before this pregnancy was menorrhagia, which had existed for two years. The pelvis was blocked by a fibroid in the posterior wall of the uterus, pressing on the rectum and bladder; the cervix was out of reach, high up under the pubes. Retro-peritoneal hysterectomy was performed with success. Cripps's[3] patient was 44 years of age, the menstrual history was irregular, but the pregnancy had lasted over two months, the pelvis was blocked, and the cervix was high up anteriorly. In amputating the uterus, though the membranes were not ruptured, much dark, old clot escaped from the uterine cavity. The operator therefore flushed out the peritoneum and then for a reason not explained in the report passed a Keith's drainage-tube into Douglas's pouch. The operation was a retro-peritoneal hysterectomy and the specimen, like my own, is preserved in the museum of St. Bartholomew's Hospital. Tauffer's case[4] was somewhat similar. The patient was a nullipara, aged 27 years; several fibroids

[1] On Myoma and Fibro-myoma of the Uterus, Transactions of the Obstetrical Society, vol. xxx., p. 410. See especially Plate II., Fig. 3, representing myoma of the pregnant uterus.

[2] Fibroid Tumours of the Uterus complicating Pregnancy, New York Medical Journal, Sept. 1st, 1900, vol. lxxii., p. 353.

[3] Ovariotomy and Abdominal Surgery, Case 83, p. 501.

[4] Monatsschrift für Geburtshülfe und Gynäkologie, November, 1900, p. 658.

occupied the uterine walls, one blocking the pelvis. Retro-peritoneal hysterectomy was successfully performed in the middle of the fourth month. Horrocks[5] removed by retro-peritoneal hysterectomy a uterus in the fifth month of pregnancy where the fibroid, which caused pressure symptoms, lay chiefly to the left of the uterine cavity. Before operation he diagnosed this condition by distinguishing on palpation a bilobed tumour, the right lobe being the softer and bearing a ridge formed by the round ligament, Fallopian tube, and ligament of the ovary. As will be explained, the tumour was not of the same type as those in the four cases already noted.

The case of Gemmell,[6] of Liverpool, was different surgically from any of the above. The patient was a nullipara, aged 30 years; retention of urine and abdominal pain came on suddenly at the third month of pregnancy. The pelvis was blocked by the tumour and the cervix lay high up in the pelvis and to the left. The abdominal cavity was opened and the pelvic tumour was drawn up to the incision, thus rotating the pregnant uterus to the left. The tumour was situated on the posterior wall of the uterus above the level of the internal os and was of the size of a large orange; it was enucleated easily. The bleeding was free but was controlled for a time by sutures; free oozing set in, however, so that the abdominal wound had to be enlarged; then the uterus was brought out and all bleeding points were controlled. The pelvis was flushed and very rightly no drainage was employed, the wound being closed. The pregnancy went on till term; the forceps was found necessary to deliver the child. The mother did well. This case may be instructively compared with that of Horrocks, already noted above, where the operator found that the attachment of the tumour to the uterus was more by vessels and loose connective tissue than by perfect continuity so usual in fibroid disease. After removal it was enucleated from the left broad ligament with the greatest ease. Horrocks, therefore, states that in future he will begin on the tumour side so as to make sure whether it could be removed alone or not, so that the gravid uterus might be saved. Gemmell's enucleation seems to have answered well, but such a procedure is not always feasible and when so the presence of large veins renders it dangerous in a pregnant subject even when the most approved precautions are taken. Horrocks's tumour, on the other hand, was in the broad ligament, really separate from the uterus; still, a conservative operation like enucleation may be more dangerous than hysterectomy when pregnancy has advanced beyond the second or third month.

Two cases where the conditions differed in other respects from what existed in my own case are worth recording. Keiffer[7] operated on a case where a fibroid mass reached to the epigastrium and blocked the pelvis, flattening the cervix against the pubes. Pregnancy had advanced to the fifth month. Retro-peritoneal hysterectomy was performed. The pregnancy had developed in a retroflexed uterus, the fundus being occupied by the mass which filled the pelvis. The antero-superior part of the uterine wall formed the uppermost part of the tumour, whilst only a small part of the inferior segment had been able to dilate so as to hold the ovum. This case is instructive in relation to hysterectomy for fibroid disease in pregnancy; it shows that the possibility of retro-displacement—perhaps with no new growth at all—must be taken into account in diagnosis. As there was some shock after the operation Keiffer gave the patient sparteine, a compound which I have recently found very beneficial after severe abdominal operation.

I may note William Duncan's case[8] where the fibroid occupied the cervix. The patient was a multipara, aged 38 years; the tumour had been noticed for two years and irregular hæmorrhages followed an abortion 18 months before operation. The pregnancy had reached the fifth month. Duncan prefers retro-peritoneal hysterectomy to pan-hysterectomy, but in this case there was no alternative but to remove the entire uterus.

Thorn of Magdeburg[9] recently operated on a woman, aged 41 years, who had been married seven months previously. The periods had ceased for three months and acute symptoms, such as are seen in twisting of the ovarian pedicle, set in. At the operation the uterus was found to be twisted 180 degrees on the cervix, through a heavy myoma in its anterior wall. The tumour and a smaller myoma in the fundus were enucleated, and pregnancy went on undisturbed, but no mention is made of the labour.

The operative treatment of uterine fibroid late in pregnancy lies beyond the subject of these remarks. Dr. Amand Routh's recent report of a case of retro-peritoneal hysterectomy at the thirty-fourth week[10] is of high interest; the mother and child were saved. The discussion which followed the reading of this paper deserves perusal. The whole question of pregnancy and labour complicated by fibroid disease is ably discussed in a recent treatise by Dr. John Phillips.[11] He shows under what conditions a fibro-myoma may have no prejudicial effect on gestation and parturition and concludes by laying stress on the point to which I drew attention at the beginning of my remarks—namely, that whilst fibroids of the anterior wall are of little import those on the posterior are serious. The anterior segment is shorter and ascends during labour; the posterior is longer and descends. When, as in my case, there is a myoma in the lower part of the posterior segment not only is dystocia certain but troubles begin long before term.

[5] Transactions of the Obstetrical Society, vol. xlii., 1900, p. 242.
[6] THE LANCET, Nov. 17th, 1900, p. 1413.
[7] Guillaume and Keiffer, Bulletin de la Société Belge de Gynécologie et d'Obstétrique, vol. ix., No. 5, 1900, p. 120.
[8] A Case of Pregnancy complicated by Fibrous Tumour of the Supra- and Infra-vaginal Cervix, THE LANCET, March 3rd, 1900, p. 613.
[9] Torsion des graviden Uterus durch ein subserös-intramurales Myom, Monatsschrift für Geburtshülfe und Gynäkologie, vol. xii., 1900, p. 775.
[10] Porro-Cæsarean Hysterectomy with Retro-peritoneal Treatment of the Stump in a Case of Fibroids Obstructing Labour, with Remarks on the Relative Advantages of the Modern Porro Operation over the Sänger-Cæsarean in most other Cases requiring Abdominal Section, Transactions of the Obstetrical Society, vol. xlii., 1900, p. 244.
[11] The Treatment of Pregnancy and Labour complicated by Fibromyomata, King's College Hospital Reports, vol. vi., 1900, p. 27.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Intestinal Sand.—The Limitations of Enterectomy.

A MEETING of this society was held on Feb. 26th, Dr. F. W. PAVY, the President, being in the chair.

Sir DYCE DUCKWORTH and Dr. ARCHIBALD GARROD related a case in which Intestinal Sand was present and was accompanied by diarrhœa. Having commented on the infrequency with which such cases had been reported in England as compared with continental records Sir Dyce Duckworth and Dr. Garrod sketched the course of the illness of their patient, a married woman, aged 33 years, living in healthy surroundings save for the supply of water, which was hard, and contained organic impurities. The family history showed that the patient came of a gouty stock and the patient had, after her last confinement, suffered from peri-anal eczema accompanied by looseness of the bowel. The present ailment began in January, 1900, with a very intractable diarrhœa accompanied with internal rumbling and purring noises, there being six or eight loose motions in each 24 hours. In the middle of February the patient took to her bed and was ordered an exclusively milk diet with lime-water. This treatment lessened the diarrhœa to three or four motions each day, sometimes attended with the passage of mucus. On March 18th sand was discovered in the motions, and it was found subsequently in all in which it was looked for. Early in May Sir Dyce Duckworth saw the patient with Dr. Garrod. She was pallid and sparely nourished. The thoracic organs were healthy. On examining the abdomen it was found that the colon and its sigmoid flexure were, though empty, too readily palpable and apparently thickened in their walls. The right kidney was moveable. There was a slight degree of pyrexia at this period, the temperature rising occasionally to 100° F. or a little above this. Specimens of the sand were obtained and submitted to examination. It sufficed to say that it much resembled at first sight a deposit of uric acid, being of reddish-brown colour and finely gritty. It was insoluble in cold and boiling liquor potassæ and readily soluble in boiling nitric acid. Under a low power of the microscope particles of various shapes and sizes were seen, of a brilliant

reddish-brown hue, and translucent. The patient was confined to bed and kept on milk diet. For medicine salicylate of bismuth and bicarbonate of sodium were given in mixture. Under this treatment the diarrhœa was somewhat checked and the general health improved. In July the patient was advised to go to Plombières. There she took baths and had rectal douches and drank the water in small quantities. All vegetable food was withheld and digestion was found to be much more comfortable without it, as it caused immediate distension. She lost 10 pounds in weight while at Plombières. The next month was spent in Folkestone with some benefit and some weight was regained. In November she was rather pallid and languid, was easily tired on exertion, but had regained her usual weight (9 st. 2 lb.). The large bowel no longer appeared thickened, as it did six months previously, but there was tenderness on pressure about the splenic flexure of it. There was still a looseness of the bowel, from two to four actions occurring daily, but no sand was passed. Her diet was altogether of animal food, and a little whisky was taken with one meal. The urine was turbid with lithates and deposited uric acid. The tongue was large, flabby, and thinly grooved. A mixture with liquid extracts of cinchona and bael and tincture of cinnamon was ordered, and milk with natural seltzer water was added to her diet. The catamenia were regular. She returned home about the middle of the month. This case presented most of the characters that had been described in the few instances of the disorder that were already on record. It was, however, remarkable for the little pain which was experienced. In most examples of enteric lithiasis this appeared to be a marked feature, occurring in paroxysms, lasting several hours, somewhat akin to those associated with biliary and renal colic, and attended with much flatulent distension and vomiting. When washed and dried in the air the gritty material passed with the motions had the appearance of a fine sand. Its ground colour was a deep brown, with an admixture of pale or almost colourless particles. Under a low power of the microscope the individual granules were seen to have a great variety of shapes: some were roughly oval, some were oblong or even rod-like, and others, again, were of very irregular outline. Their colour varied from yellow to a warm brown. Some were translucent and others were opaque with the exception of their edges. Some had a finely granular appearance, but none of them showed any indication of crystalline structure. The air-dried sand lost considerably in weight at 100° C., owing to the expulsion of water from the organic basis, and the percentages of water and of organic and inorganic materials contained in it were found to be as follows: water, 12·40; organic material, 26·29; and inorganic material, 61·31. The inorganic residue left after combustion over a Bunsen's burner had a bluish-white tint and contained only a few dark particles. With the exception of such particles it was completely soluble in hydrochloric acid. This residue was submitted to analysis and was found to have the following composition: calcium oxide (CaO), 54·98; phosphorus pentoxide (P_2O_5), 42·55; carbon dioxide (CO_2), 2·20; and residue, containing traces of magnesium and iron, 0·47. The presence of magnesium was beyond doubt, but the quantity was extremely small. Calcium phosphate was clearly the chief mineral constituent.—Dr. A. CROMBIE thought that the affection must be more common in India than in this country. In the course of 10 years he had met with three cases in a hospital of 150 beds. The chief symptom was colic, which was sometimes intense and severe. The severity of the symptoms varied directly with the amount of sand present in the stools. In two cases immature acari were found present in the stools. He had once found sand in the stools of a pig.—Dr. T. J. BOKENHAM had met with intestinal sand in the stools of a young woman of neurotic temperament. Its presence was accompanied by colic and diarrhœa. The sand presented slight differences as compared with that in the case related by Sir Dyce Duckworth and Dr. Garrod.

Mr. ARTHUR E. BARKER reported two cases of Enterectomy bearing on the Limitations of the Operation. In the first case glycosuria was present and in the second five and a half feet of small intestine were removed for gangrene from a woman, aged 76 years. The first patient, a married woman, aged 58 years, was admitted into University College Hospital on Oct. 3rd, 1900, under the care of Dr. G. V. Poore. She complained at this time of great pain above the umbilicus and obstinate constipation. She was known to suffer from diabetes and later was found to have 6·6 per cent. of sugar in the urine. The pain had begun eight months previously and she was obliged to remain in bed from the middle of May to the end of June, 1900. The abdomen, on inspection, looked like that of a healthy woman who had borne many children (10). There was tenderness above and to the left of the umbilicus, and here an oblong tumour could be felt. It was decided to distend the stomach with air and then after evacuating it to inflate the colon. When the stomach was distended the tumour was a little less evident but was otherwise unaltered. On distending the colon, however, the tumour was pushed to the right iliac fossa and reduced in size. From this we argued that it was probably seated in the transverse colon and was associated with more or less intussusception of a ring-like growth of carcinoma into the distal portion of the bowel. The patient being in fair condition except for the glycosuria it was determined to attempt removal of the growth. Enterectomy was performed on Oct. 25th, 1900, four and a half inches of bowel being removed. The patient bore the operation well. The temperature remained below 100° F. for the first nine days, during which she steadily improved. There was no vomiting except a mouthful soon after the operation. Feeding by the rectum was kept up for four days and small quantities of fluid were given by the mouth from the second day onwards. Morphia was given, at first two or three times daily, but on the third day Mr. Barker began to administer codeine phosphate in one-grain doses hypodermically three times daily on account of the sugar in the urine, which was shown on the fourth day to amount to 6·6 per cent. From this day it steadily declined in amount until on the ninth day it was only 2 per cent. It diminished now still more rapidly when the codeine in the same amount was given by the mouth until the thirteenth day, when it disappeared altogether, only to reappear once to the amount of 2·8 per cent. on the seventeenth day, when it was found that the patient had surreptitiously eaten some sugar and also grapes. After this sugar was either totally absent or only found in a mere trace until the end of convalescence. Complete recovery ensued, only delayed by some local sloughing of omentum and mesentery. Thus in a condition of marked glycosuria repair of the intestine was shown to be possible. The second case was that of a feeble old woman, aged 76 years, who was admitted into University College Hospital on Jan. 10th, 1901. She had always enjoyed good health, but in 1870 had undergone ovariotomy. She had had no children. For two years she had had a large ventral hernia in the ovariotomy scar. On Jan. 8th and 9th she had not felt well and had complained of some pain in the abdomen but was not sick. At 10 A.M. on Jan. 10th the patient was seized with severe pain in the abdomen and vomited the contents of the stomach slightly bile-stained. The hernial tumour was tender and more swollen than usual. There was no more sickness and no motion or flatus was passed. Mr. Barker immediately opened the abdomen through the old scar and about a pint of dirty blood-stained fluid with a fishy odour gushed out. A loop of blackened small intestine was now seen of about three feet in length strangulated through the omentum. The gut had not entirely lost its lustre, but was very foul and distended tightly with dark blood-stained fluid. The peritoneum was not cracked, but hæmorrhages existed beneath it in several places, and a few of the subperitoneal venules were thrombosed. The extremely foul and fishy odour of the gut and fluid around it determined Mr. Barker to remove it as its recovery seemed hopeless. He therefore cut away five and a half feet of the bowel and anastomosed end to end as rapidly as possible. The time taken for this part of the operation was 44 minutes, the whole operation to the last stitch requiring 63 minutes. During the operation, which was well borne, 12 ounces of normal saline solution were slowly injected subcutaneously. The whole of the lower part of the abdomen was filled up with very hard fibroids of the uterus which reduced the amount of space for working very much. Recovery was uninterrupted. Commenting on these cases Mr. Barker observed that the first recalled what had been brought before the society concerning diabetic gangrene, in which condition, in spite of extensive arterial thickening, good results had been obtained. With regard to extensive excision of the bowel it seemed probable, from experiment and observation, that in younger patients who survived the operation a compensatory

hypertrophy might take place in the small bowel left behind which might make up for the loss. It seemed also to be suggested that the resection was better tolerated the lower down the intestinal tract it was done.—The PRESIDENT observed that it was important to distinguish between the alimentary and the composite forms of glycosuria. In the former the condition could be removed by diet; in the latter dangerous bodies, such as acetone, diacetic and oxybutyric acids, were present in the blood besides sugar. The surgeon could be helped greatly by the physician in these cases, and the latter form was to be taken as contra-indicating all but imperative operations.—Sir THOMAS SMITH recorded a case in which a man not previously known to be diabetic accidentally scratched his finger and within a week succumbed to septicæmia with gangrene of all four extremities.—Sir DYCE DUCKWORTH observed that in spite of the immense advantage of antiseptics surgeons would still need to be judicious in operating on diabetic subjects.—Mr. BARKER, in reply, said that in his first case he thought that the continuance of marked glycosuria during the first 10 days—the most important period of repair—was of interest.

MEDICAL SOCIETY OF LONDON.

Painless Pyonephrosis without Fever.—Fibroids of the Cervix Uteri.

A MEETING of this society was held on Feb. 25th, Mr. J. H. MORGAN, the President, being in the chair.

The PRESIDENT read a communication from the Home Secretary acknowledging the recent loyal address from the society to King Edward VII. and conveying His Majesty's thanks for the same.

Mr. ALBAN DORAN read a paper on Painless Pyonephrosis without Fever; nephrectomy; recovery. He brought forward this case because he had found that though painless calculous pyonephrosis was by no means unknown surgeons were too often induced when making a diagnosis in a case of painless enlarged kidney to exclude calculous pyonephrosis on the ground that that disease must always be more or less painful. The patient was a woman, 38 years of age, who had borne eight children, the youngest of whom was five and a half years old. Her husband had been subject to stricture and cystitis. For a few months she herself had suffered from purulent vaginal discharge. For a year she had noticed a swelling in the right side; it ached when she put on her stays, but when undressed she was always comfortable. There was no history of rigors, fever, hæmaturia, or renal colic. A large moveable kidney lay in the right flank; it was not tender. The urine occasionally contained albumin. Mr. Doran exposed the kidney by a Langenbeck's incision; it was extracted with the greatest ease; the circumrenal fat was quite healthy. The ureter was reduced to a thin cord. The left kidney felt slightly enlarged but of normal consistence. The patient was in good health three months after the operation. The right kidney had become a cyst containing about a pint of what Mr. Shattock reported as pure *pus laudabile* without a trace of tubercle. The upper part was dilated into an almost unilocular cyst through complete stricture of the ureter at its origin from the pelvis. The lowest calices were blocked by a small rough calculus in the infundibulum; they formed a bilocular cyst. In one dilated calyx a piece of mulberry calculus lay loose. In this case the infection was probably gonococcal and therefore ascending. A calculus blocked the lower calices but the cause of the blockage of the ureter was not so evident. It seemed that a calculus had caused it and then come loose. Similar cases were quoted. Mr. Doran observed that it was fortunate that the operation was not delayed till adjoining structures had been involved. He was of opinion, like Noble of Philadelphia, that the removal of a suppurating kidney allowed its fellow to do its work better. He considered that abdominal nephrectomy was preferable in such a case to the lumbar method. The absence of pain recalled the pathological researches of Mr. Bruce Clarke and certain clinical experiences of Mr. Henry Morris and Mr. Murray of Cape Town. The absence of fever was remarkable; the patient went about with one kidney converted into a bag of pus and yet appeared to be in excellent health and was able to attend to heavy domestic duties.—The PRESIDENT remarked that the case was almost unique; the absence of pain and fever with such a kidney was quite exceptional. He asked what had been Mr. Doran's experience of the internal administration of boric acid in conditions of urinary sepsis.—Mr. BUTLER-SMYTHE observed that the degree of pain was to some extent dependent on the patient's mental constitution. He asked why the ureter had not been dropped back into the peritoneal cavity after dis infection of its divided end; he had done this in two cases without any ill effect.—Mr. DORAN, in reply, said that following Mr. Knowsley Thornton's lead he preferred in suppurative conditions to treat the ureter as he had done, bringing it out of the lower end of the wound. He had known a lumbar abscess to follow when the ureter had been dropped back. In non-suppurative conditions the circumstances were different. He had found that the administration of 10 grains of boric acid three times daily had been followed in several cases by an improvement in the urine. Whether this was *post* or *propter* he could not say. The absence of fever might be due to the gonococci, which he thought were the cause of suppuration in this case, having perished.

Dr. A. H. N. LEWERS read a paper on Fibroids of the Cervix Uteri. He said that fibroid tumours arising in the cervix were much less common than those met with in the body of the uterus. The ordinary classification of the latter into interstitial, subperitoneal, submucous tumours, and fibroid polypi served equally well in considering fibroid tumours of the cervix. The present paper dealt only with interstitial and subperitoneal fibroids of the cervix. When these tumours originated in the cervix and reached the size of a cocoanut and upwards they became fixed, with fixation of the rest of the uterus as a consequence, and they also exercised pressure on the neighbouring parts, especially on the bladder and ureters. As a matter of fact, troubles connected with micturition figured prominently in the history of such cases. These tumours were generally solitary, whereas fibroids of the uterine body were most frequently multiple. The effect on menstruation varied; sometimes there was profuse menorrhagia; sometimes, however, menstruation was scanty or absent for many months at a time. When the tumour was interstitial and solitary the body of the uterus, practically unaltered, could be felt perched on the top of the tumour in the neighbourhood of the umbilicus. Four specimens from the cases fully recorded in his paper were shown at the meeting. In Case 1 there was a large solitary interstitial fibroid of the anterior cervical wall. In this case the patient had been rendered profoundly anæmic by menorrhagia. In Case 2 there was a large solitary interstitial fibroid of the posterior cervical wall. Difficulty in passing urine and at times inability to hold it, with pain about the lower abdomen and back, were the chief symptoms. Menstruation was scanty and only occurred three times in the two years before the patient came under observation. In both cases intra-peritoneal abdominal hysterectomy with formation of a cervical stump was performed and both cases did well. In Case 3 the tumour was a large subperitoneal fibroid weighing 9½ lb., springing from the back of the cervix and raising the peritoneum from Douglas's pouch, the whole of the left side of the pelvis and the left iliac fossa. At the operation there was no peritoneal cavity to the left of the incision below the umbilicus. The sigmoid flexure was seen above and to the right of the umbilicus. Abdominal hysterectomy, intra-peritoneal, was performed, there being enough cervix below the origin of the tumour to form a stump. This case also did well. In Case 4 there was a fibroid of the left side of the cervix, partly interstitial and partly subperitoneal. There were in this case also several fibroids in the body of the uterus and a small ovarian cyst on the left side. This case was treated by abdominal pan-hysterectomy and did well. As regards diagnosis, it was to be remembered that in all cases of large interstitial fibroid of the cervix the os uteri became dilated sufficiently to admit the finger, which then came on a part of the fibroid. It was important not to mistake the condition for that found in cases of submucous fibroid of the cervix or body of the uterus. The latter kind of fibroid could be safely treated from below, whereas in cases of large interstitial fibroid of the cervix an attempt to remove the tumour from below by *morcellement* would most probably either fail altogether or prove disastrous.—Mr. DORAN said that he approved of the operative measures that Dr. Lewers had adopted in his cases. The operation of pan-hysterectomy was dangerous when the cervix was dilated owing to the nearness of the ureters. As

a rule, when a fibroid was as large as a cocoanut it called for removal.—Dr. W. GOW thought Dr. Lewers's experience of cervical fibroids exceptional; they were usually set down as constituting about 3 per cent. of all diagnosable cases of fibroids. The physical signs were sometimes misleading, as one or other lip of the os uteri being stretched over the growth might simulate a polypi and tempt the surgeon to operate from the vagina, though he (Dr. Gow) agreed with Dr. Lewers that they should be operated on from above. He thought that the plan of leaving ligatures long and bringing them down into the vagina might lead to suppuration.—Dr. AMAND ROUTH said that it was important to know that cervical differed from corporeal fibroids in being almost always single. He had found help in diagnosis by passing the sound and locating its end through the abdominal wall. In one case he had tied one of the uterine arteries per vaginam. This had been followed by shrinking of the growth.—Dr. J. D. MALCOLM thought that in some cases the tumour could be removed per vaginam. He had so removed one cervical fibroid. He tied a few arteries and packed the cavity with gauze. The patient made a good recovery and had the advantage of retaining the uterus intact.—Mr. BUTLER-SMYTHE felt that such cases as Dr. Lewers had operated on would have fared badly in the hands of a beginner or with the older methods of operating.—Dr. LEWERS, in reply, said that he adapted the operation to each case. He had no objection to pan-hysterectomy in itself, but he agreed with Mr. Doran that it was dangerous when the cervix was dilated. He thought the plan of tying the uterine arteries exposed the patient to the risk of sloughing of the tumour. He thought that only the smaller cervical fibroids could be safely enucleated from below.

CLINICAL SOCIETY OF LONDON.

Exhibition of Cases.

A MEETING of this society was held on Feb. 22nd, Sir R. DOUGLAS POWELL, the President, being in the chair.

Dr. STCLAIR THOMSON showed a woman, aged 29 years, with a large irregular, soft Swelling in the Region of the Upper Half of the Right Sterno-mastoid. It was elastic and fluctuating and was neither adherent nor inflamed. She was positive that the swelling commenced just before her marriage (at the age of 27 years) as a small lump on the right side of the neck. This increased during pregnancy and became larger after her first child was born in September, 1900. Mr. Bland-Sutton had stated that congenital serous cysts of the neck were "always noticed at or immediately after birth." Possibly, as they originated below the deep cervical fascia, the one in this case escaped notice until it had made its way through this membrane and had become superficial.—In reply to Dr. A. E. T. LONGHURST Dr. THOMSON said that owing to the deep extensions of the growth he thought it better not to operate upon it.

Dr. J. S. RICHARDS showed a child, aged six years, whose Knee was Excised some time anterior to 1897. A flail-joint resulted and amputation was performed through excision of the scar (1898). The outer portion of the lower end of the femur continued to grow, while there was arrest of growth of the inner portion with resultant hook-like curve.

Dr. H. D. ROLLESTON (for Dr. F. W. BURTON-FANNING) showed a case of Progressive Myositis Ossificans. The patient was a male, aged 33 years. The disease began at the age of eight years. The patient's father had suffered from the same disease. The patient was married and had a daughter, aged seven years, who had not shown any sign of the disease. All four limbs were almost fixed, thus resembling Marie's rhizomelic spondylosis; the spine, except in the cervical region, was rigid from ossification of the muscles. Respiration was diaphragmatic and the patient could not sit down; he could just walk. Movement of the temporo-maxillary joint was greatly limited. The thumbs were natural but the great toes were markedly dwarfed (microdactyly). There was ankylosis of the terminal phalanges on the great toes and on the fourth toe on the right foot. There were exostoses around the knee-joints and one of the size of a marble on the left side of the chest. The ossification of the muscles was very widely spread.—In reply to the PRESIDENT'S question as to what treatment had been adopted Dr. ROLLESTON said that he had given thyroid without any good effect and that he was now trying salicylate of soda, but as yet he could not say that the patient had benefited from it.

Dr. HUGH THURSFIELD (for Dr. A. E. GARROD) showed a boy, aged 10 years, who came to the hospital for Enlargement of the Right Elbow and Left Knee which had been present for four years. He had had occasional attacks of abdominal pain, which passed off quickly, and returned only at long intervals. The swellings of the joints began four years ago and had steadily progressed. The boy had congenital ptosis and enlargement of joint, but was otherwise healthy and intelligent, though rather dull mentally.—Dr. ROLLESTON referred to a case that had been under his care where bursal swellings about the joints had been present from early life, and the patient had a cretin-like aspect, similar to that of the patient now under consideration. He thought that part of the abnormality might be caused by tuberculous infection.—Dr. WILLIAM EWART said that the patient appeared to be suffering from nasal obstruction.—Mr. JACKSON CLARKE thought that this case belonged to a class examples of which had been shown before the society as differing both from cretinism and achondroplasia.—Mr. T. H. KELLOCK asked whether the patient's heat-sense and reflexes had been tested. The ptosis and weakness of the limbs were such as were observed in chronic hydrocephalus.—Dr. THURSFIELD, in reply, said that tuberculosis had been suspected at first, but the general opinion of those who had seen the patient was that the condition was allied to cretinism though not identical with it.—The PRESIDENT proposed that it would be useful to submit the case to a committee.—This was carried.

Mr. BETHAM ROBINSON showed a case of Enlargement of the Right Foot. The patient was a male, aged 38 years, who 19 months ago had a definite injury to his great toe, followed by swelling, and the foot was said to have turned black. A few days afterwards lumps were noticed on the right shoulder, on the outer side of the right wrist, and over the right knee. These went away by themselves at the expiration of a few days. This was succeeded by great loss of flesh, for which he was dieted, but he did not know if his urine was abnormal at the time. There was some suppuration about the toe-nail, which had continued slightly up to the present date. He had now gigantism of the right foot, especially of the great and fifth toes and over the tarsus. There was thickening of the phalanges and metatarsal bone of the great toe, with some looseness and crepitus in the joints, also thickening of the fifth metatarsal. An x-ray photograph showed bony thickening about the phalanges and metatarsal bones of the first toe and over the same bones of the fifth toe. He had neuralgic pains about the leg and on both sides his patellar reflexes were feeble. There was no difference in the size of the legs or arms, but there was some neuralgic pain down the left arm. The crests of the ilia seemed a little thickened. There was a very marked bend in the lower cervical and upper dorsal region of the spine. The bones of the head and face were normal. The pupils responded actively to light.

Mr. RAYMOND JOHNSON showed a case of Actinomycosis of the Skin in the Parotid Region. The patient, a Russian, aged 31 years, went to University College Hospital on Feb. 2nd on account of a chronic inflammatory condition of the skin in the right parotid region of eight months' duration. There was nothing to note in his history. He formerly had to do with the buying and selling of horses. The affection began with pain and swelling of the posterior part of the right cheek. Early in August, 1900, and again six weeks later, abscesses were opened below the right ear, and since that time slight discharge had frequently occurred from small openings in the skin. There was now a patch of indurated and congested skin over the right parotid gland, which also seemed involved in the induration. The mouth could not be freely opened, but the jaws and the cavity of the mouth appeared to be healthy. At the time of the first examination there was a small sinus in the skin, from which a drop of pus was expressed which contained yellow grains, presenting under the microscope the characteristic appearances of the ray fungus. The surface of the skin in the affected area was rendered slightly irregular by the healing of numerous small openings from which pus had from time to time been discharged.

Dr. SIDNEY PHILLIPS showed a case of Acute Bronchocele. The patient was a man, aged 18 years, who had always been in good health till Christmas, 1900. He had a cold in January, 1901, but continued work. A small boil came on the right side of the face which was poulticed, after which it burst and soon healed, but the patient had pain and an enlarged gland behind

the right ear, to which iodine was applied by medical advice on Jan. 23rd. On the 25th he noticed a swelling about the thyroid upon the right side which had extended to the left side. About the same time he became breathless and his voice had altered during the last 14 days. There was now very great enlargement of the thyroid gland; both the lobes and the isthmus and a hard outlying nodule could be felt at the lower part of the left lobe; no thrill and no pulsation of vessels in the thyroid could be felt, but there was transmitted pulsation of the carotid artery, especially on the left side. The temperature was 100° F., and the pulse was from 90 to 160 per minute. There was a slight systolic (? hæmic) murmur at the apex. He had not noticed that his eyes had become prominent.—Dr. EWART regarded it as a typical case of thyroidism, and he referred to a case of a young man who was admitted into hospital on account of an aortic regurgitant murmur, and to whom he had given iodide of potassium with salicylate of soda and a little free iodine. A few days later well-marked symptoms of Graves's disease, in the bradycardiac form, developed. In such cases the cacodylate treatment was of benefit.—Dr. R. L. BOWLES related the case of a strong healthy man, who after a swim, during which he sustained a great fright, had sudden and considerable enlargement of the thyroid, so much so that he could not button his collar by two inches. He had heard from him some months later, when the patient stated that the swelling was rather smaller.—Dr. BEZLY THORNE had seen two sisters and their father, all of whom suffered from a similar condition. One patient, aged 18 years, had a high tension pulse and foul breath. He had treated the patient for gastro-intestinal auto-intoxication. He did not think that nerve-shock was an etiological factor.—Dr. PERCY KIDD recalled a case of acute bronchocele in an epileptic subject who had died from asphyxia caused by the enlarged thyroid.—The PRESIDENT asked if any cardio-vascular change had been observed. There was no thrill over the gland, as would probably have been present had the condition been Graves's disease.—Dr. PHILLIPS, in reply, said that he had shown the case on account of its acuteness, though the condition was one which was well known. He had suggested Graves's disease on account of the dyspnœa which did not seem to be due to the pressure.

Dr. PHILLIPS also showed a case of Tachycardia (? Graves's Disease). The patient, a man, aged 28 years, at the beginning of November felt tightness across the chest. Soon after the legs and feet swelled. On admission the pulse was 150 and very feeble, and there were œdema of the legs and much breathlessness that he could not walk many yards. Since then the heart-beat had become stronger, with evidences of dilatation and hypertrophy; the pulse-rate, which had persisted at from 140 to 160, with occasional temporary drops to 110 a minute, was extremely feeble, and was uninfluenced by digitalis or strophanthus or rest in bed. There was slight fulness of the right lobe of the thyroid, but no albuminuria, epistaxis, tremor, or proptosis; there was occasional slight pyrexia.—Dr. DE HAVILLAND HALL said that in his experience one of the commonest causes of tachycardia was influenza. Some of the worst cases that he had seen had been in medical men who had worked through their illness. He had found arsenic of more service than digitalis or strophanthus.—Dr. EWART attached importance to the increase of prevascular dulness which pointed to enlargement of the thymus.—The PRESIDENT said that the future history of the case would be of interest.—Dr. PHILLIPS, in reply, said that the hypertrophy and dilatation of the heart rather favoured Graves's disease. He had tried prolonged rest in bed and strychnine.

Mr. R. J. GODLEE showed a case of Injury to the Left Optic Nerve. The patient was a young man who had sustained an injury to the left side of the head from a fall from a bicycle. This was followed by paresis of the right side of the face and the right upper and lower extremities, deafness of the left ear, and blindness of the left eye. The paresis of the face and limbs had since much improved. The deafness was much less and probably depended upon injury to the tympanum. The blindness continued. There was evidence of injury to the optic nerve—i.e., optic atrophy and the pupil not reacting to light on direct stimulation but acting briskly when stimulation was applied to the right eye.

Dr. KIDD showed a case of Congenital Morbus Cordis and Pulmonary Regurgitation, in a woman, aged 21 years. There was slight cyanosis, especially of the conjunctiva, but no clubbing. The heart was enlarged on the right and left sides. There was a faint diastolic thrill in the second left space. The second sound was everywhere very loud, its maximum intensity being at the third left cartilage. At this point a short diastolic murmur following the second sound was audible at times. The first sound was everywhere feeble and generally doubled. The patient had had attacks of cardiac pain from childhood and had suffered from dyspnœa for three years, but there was no history of rheumatism, scarlet fever, or chorea.

Mr. R. P. ROWLANDS showed a Primary Chancre on the Skin of the Side in a single man, a brewer's drayman, aged 28 years. The sore on the side appeared five weeks ago. A papulo-squamous rash and sore-throat appeared a week ago. The sore was now as large as a half-crown, indurated, and discharging a thin serum. There were hard shotty glands in the left axilla and groin. There was a papular sore-throat. The patient had improved under treatment with mercury. There was no history of contagion. He leaned on his dickey at this spot and this might have determined the site of the sore.—Mr. CAMPBELL WILLIAMS mentioned that the sore had this in common with most extra-genital venereal sores that it was wanting in the usual characteristics of a chancre. He had a rule that if a sore did not yield to simple treatment at once to suspect syphilis.

Mr. W. G. SPENCER showed a case of Bullet-wound of the Brain in a man who had been shot with a revolver, the bullet entering immediately below the centre of the right lower eyelid. The patient was admitted to St. Bartholomew's Hospital with right hemiparesis and aphasia. After being for a time unconscious he recovered. At present there was rigidity of the arm with tremors, which began in March, 1900 (the wound having been inflicted in October, 1899). He had never had any fits. The right lower face was paretic with spasm, the upper face being normal. Sensation in the right arm was good, but there was pain in the muscles and in the middle finger. The muscles were not wasted but voluntary movements were absent except for slight advancement of the arm. Mr. Spencer produced skiagrams showing the situation of the bullet, which was in the region of the posterior clinoid process on the left side. The special senses were not affected and speech was fairly good.

EPIDEMIOLOGICAL SOCIETY OF LONDON.

Discussion on the Epidemiology of Scarlet Fever in Relation to the Utility of Isolation.

A MEETING of this society was held on Feb. 15th, Dr. P. MANSON, C.M.G., F.R.S., the President, being in the chair.

Dr. A. NEWSHOLME read a paper on the Epidemiology of Scarlet Fever in Relation to the Utility of Isolation. He admitted that the problem was, in the present state of their knowledge, insoluble, but its discussion would serve to indicate the proper lines of inquiry and of safety in practice. Though the micro-organism of scarlet fever had not been certainly identified there could be no doubt as to its existence; it was killed by heat and disinfectants and the disease was communicable by personal intercourse, by fomites, and by such vehicles as milk. Until, therefore, they knew more of its natural history it was obviously their duty to combat it by the only means at present available—disinfection of things and isolation of persons. A notable feature of the disease was the regular cyclical succession of increasing and decreasing prevalence and mortality, which, however, did not coincide in different towns, which made it necessary to compare only years of maximum with maximum and minimum prevalence or mortality to which, since notification had been practised, they could often add fatality. But there had been in this country a remarkable reduction in the mortality since 1883, which from 1859 has never sunk below 0·28 per 1000 population except in 1873, the year following a period of excessive mortality, when it was 0·19, while since 1884 the highest mortality had been 0·36, and the minimum 0·08. This change, though coincident in point of time with the introduction of isolation hospitals, could not be ascribed wholly to their influence, for it had been observed in towns and even in countries where such isolation had never been attempted, yet it was by no means universal, as had been alleged by the opponents of isolation

hospitals, for while in Berlin the improvements had been very marked there was none in Prague, and little, if any, in Christiania, the only difference being that the oscillations were not so wide as formerly, and the same was the case at Boston. The occurrence of extremely high death-rates followed by others as low, and due to the exhaustion of susceptible material, was characteristic of towns where such isolation was not practised. It was remarkable that the mortality from scarlet fever had always been low in Paris, though that from diphtheria was higher than in any other town in Western Europe, and in Boston, U.S.A., where diphtheria was even more rife; the years of highest mortality from the one disease coincided with those of the lowest from the other. This might suggest a complementary relation between diphtheria and scarlet fever were it not that no such alternation was observed in Berlin, Montreal (where both were very prevalent), and elsewhere. The reduction in the mortality from scarlet fever could not be wholly explained by the improvement that had taken place in the sanitary and social conditions of the people in most civilised countries, for it was not so general, but comparing communities that had adopted isolation with those under equally good sanitary conditions they could not but conclude that it had the effect of moderating the severity of successive cyclical epidemics, and by enabling susceptible individuals to escape infection, if only for a few years longer, it tended to lower the fatality, which was notoriously higher in early childhood. It would, however, be rash to assume that the present reduction of the prevalence, mortality, and fatality which in some towns was now less than 1 per cent. among hospital cases, in other words the attenuation of the virus, would be permanent, for in the early part of the nineteenth century it had been observed, though not to the same extent, and ascribed by Dr. Graves to the depletory treatment then in vogue until the return of the disease to its former virulence disillusioned him, and even now one occasionally, though rarely, met with cases of a malignant type; but that these were in any way connected with the aggregation of patients in hospital was an assumption for which there was not an iota of evidence. In most houses isolation was impracticable and the removal of the patient was necessary to prevent the whole of the susceptible children from contracting the disease. To determine the extent to which hospitals tended to check the spread of the disease he had been collecting statistics, too few as yet for positive conclusion, but sufficient to indicate the lines on which such investigations should be conducted. Taking a number of houses (1) from which the first case had been removed so soon as notified; or (2) not until secondary cases had appeared; and (3) where the patients were treated at home, he noted and tabulated the number of subsidiary cases in each class, the period that had elapsed between the onset of each and of that immediately preceding, as well as since its removal, the number of persons in the same families and in other families occupying the same houses under and over 20 years of age who escaped, with the attack rate for each during the rise and decline of an epidemic, and other data, all of which were greatly in favour of hospital treatment in their crude state, while every proper correction or revision made them more so—e.g., most of the cases treated at home were so because there was ample room for isolation without removal, or because there were no other children in the house to whom the disease could spread; and, on the other hand, secondary cases appearing later than a week after the removal and before the return of the first could not be due to personal infection from it, and in many the patient was not removed until too late for prevention, some, indeed, not until the second or third weeks. As to the alleged higher mortality among "return" cases, even when properly so called, it was a well-known feature of disease that successive cases in a family progressed in virulence, especially when treated at home.

Mr. SHIRLEY MURPHY defended isolation hospitals as removing one means of communication, though others remained to be discovered; statistical results from comparison of isolating and non-isolating towns, apparently against the former, must be falsified by errors of method or ignoring different circumstances, as well as cyclical variations of prevalence and mortality. In 1893, when from the seventeenth to the twentieth week the Metropolitan Asylums Board failed to meet the demand and many patients were treated at home, the number of secondary cases rose rapidly.

Dr. FRANKLIN PARSONS pointed out that it was but recently that hospital isolation had been at all generally adopted, yet the mortality from the isolated diseases had sunk far more than that from measles and others that were not, and it was evident that the aggregation of cases and concentration of the infection was greater in a confined room than in a hospital ward.

Dr. BOOBBYER said that with regard to the comparison of the scarlet fever statistics of different towns variously circumstanced in respect of hospital isolation, he wished to point out that not only were the internal conditions of these towns and the periodicity of their cyclical and local epidemic waves extremely various, but the conditions of their surrounding districts as regards all these matters were at least equally diverse. In many such districts, too, practically no precautions against the spread of infection were taken by the local authorities. Moreover, while very many of these peripheral districts were doing nothing in the way of hospital isolation, the large towns themselves were not doing anything like the amount they were supposed to be doing. For example, the huge discrepancy between the hospital death-rate of Huddersfield during 1899 (1·5 per cent.) and the home death-rate (28·5 per cent.) probably meant, *inter alia*, that more than nine-tenths of the home cases were not notified. With reference to return and other secondary cases he had, he thought, pointed out as far back as in 1892 that these were apparently more fatal than primary cases. Return cases were ordinarily most numerous in autumn, but with a rising epidemic they were most prevalent on the upward slope of the epidemic wave irrespective of season. The low death-rates in hospitals disproved the theory that they gave rise to a new and more fatal type of infection. Still, isolation hospitals had not done as much as was expected of them, and probably the explanation was to be found rather in the life-history of the scarlatinal virus than in faults of the hospitals. Who could say that what was known as scarlet fever was anything more than the outcome of one phase—or incident—of the life-history of an organism whose other incarnations, as saprophyte or parasite, they were unable to follow?

Dr. LOUIS PARKES pointed out the economic advantages of hospital isolation in enabling the parents and others to follow their usual employments, and suggested that the possible presence of the microbe in apparently healthy throats might be a source of infection, as it was in the case of diphtheria, that notification and isolation could not prevent.

Dr. H. R. KENWOOD considered hospital isolation indispensable for the poor, and protested against the indiscriminate admission of patients of all classes to the exclusion virtually, if not actually, of those suffering from far more fatal diseases. In his district of Finchley the children of the poor died from diphtheria while the beds in the hospital were filled with scarlet fever cases, some coming from houses rented at £100 per annum. Half the expenditure of the Metropolitan Asylums Board thus spent might to much better purpose be devoted to the medical inspection of schools and other uses. Even measles was at the present time more fatal, indeed he had several hundred cases of scarlet fever through his hospital in the course of eight years without a single death.

Dr. E. F. WILLOUGHBY expressed his regret that no reference had been made to the age constitution of the populations of the towns under consideration. For scarlet fever being a disease of early life, and rarely fatal after the tenth year, the mortality of a town must be greatly influenced by the number of children living under 10 years. To take an extreme case, children under this age constituted 24 per cent. of the total populations of London and Berlin, but only 12 per cent. of that of Paris, so that equal death-rates per 1000 population would indicate a mortality in Paris twice as much as in London or Berlin among those who were susceptible and to whom the mortality was practically confined.

Dr. H. T. BULSTRODE, referring to Dr. Kenwood's observations as to the expediency of providing isolation accommodation for diseases other than scarlet fever, remarked that obviously if the fatality rate of scarlet fever became much further reduced it might be a serious question as to whether some other infectious disease having a higher fatality-rate might not be attacked. He thought that much of the misunderstanding which obtained as to the value of isolation hospitals arose from a perpetuation of the old view that a disease such as scarlet fever could be "stamped out." But

such a stamping out assumed that the micro-organism of the disease in question was confined to the human species, and that, moreover, it had no saprophytic existence. There was some evidence to negative both these views. But even if the disease was confined to the human species it would be necessary in order to stamp it out to recognise a case the moment it appeared, to isolate it at that moment, and to disinfect all articles which had been exposed to infection at that instant. But all these things were clearly impracticable. The proper attitude to adopt in relation to the present controversy was, he thought, to improve their fever hospitals, to control in a greater degree than at present the diagnosis, to provide more observation wards, and generally to make for better accommodation. The statistics of many isolation hospitals bore witness to the fact that there was some room for improvement, and he thought it wise in every particular to face the situation. All recent experience fully justified the attitude of successive medical officers of the Local Government Board in setting themselves to oppose the erection of unsuitable "temporary" hospitals. Sanitary authorities had no right to morally compel the people under their charge to be sent to hospitals which were not properly equipped.

After some remarks by Dr. R. D. SWEETING, Dr. W. A. BOND, and Dr. THEODORE THOMSON, the PRESIDENT defended what Dr. Kenwood had called indiscriminate admission on the ground of the difficulty of drawing a line of eligibility, since a man's occupation was of more importance to the public than his income. He had sent his children to a hospital in the interest of his practice and patients. The suggestion of a parasitic phase of scarlet fever in other animals was favoured by its remarkable limitation to temperate climates, for it was a character common to all diseases of that nature to be restricted to particular climates or regions

Dr. NEWSHOLME said that Dr. Millard's error consisted not in the shortness of the period on which his statistics were based, but in his method of applying them, which ignored the different incidence of the maxima of prevalence and of mortality in different towns. He maintained that all ratepayers had a right to hospital treatment, which he believed was always better; but if any selection of cases were made it should be made, not on the social position of the families, but on the risk of the spread of infection in each case. He entirely agreed with the importance of taking the age constitution of a population into consideration in comparing one town with another, but had not as yet been able to obtain the information desired by Dr. Willoughby. He thought that Dr. Kenwood's remarkably low mortality might be due to his indiscriminate admission of cases and that its limitation would lead to a recrudescence of the fatality in future.

BRITISH GYNÆCOLOGICAL SOCIETY.

Exhibition of Specimens.—The Surgical Treatment of Prolapse of the Uterus.—The President's Inaugural Address.

A MEETING of this society was held on Feb. 14th, Dr. J. A. MANSELL MOULLIN, the President, being in the chair.

Dr. R. D. PUREFOY (Master of the Rotunda Lying-in Hospital, Dublin) showed two very interesting specimens of Fibroid Disease of the Uterus. In the first case a single woman, aged 52 years, was attacked with a severe form of peritonitis for six weeks, and while under treatment was found to have a large, firm abdominal tumour having many of the characters of fibroma uteri. She was sent to the Rotunda Hospital for operation and during this the abdominal wall was found to be firmly incorporated with the anterior surface of a large fibroid connected with the left cornu of the uterus by a small pedicle. The omental adhesions were so numerous and extensive that considerable bleeding ensued during their separation. It was observed that the surface of the tumour presented very much the appearance of an ovarian cyst in which suppuration had occurred. On section the substance of the tumour (except a small portion near the pedicle) was found to be of a dark red colour, and was hollowed out into large cavities freely communicating and containing unaltered blood in large quantities. Dr. H. C. Earl reported as follows on the microscopical appearances: "The tissues of the tumour, though so unusual in colour, did not show degenerative changes, but stained in the usual way, and the numerous cavities having a very smooth lining membrane appeared to be dilated blood-vessels." This condition in a fibroma was of great rarity and very few instances of it had as yet been reported in any country. In the second case the patient was a single woman from whom a large fibroid uterus had been removed by panhysterectomy. The specimen was interesting because it showed numerous submucous, interstitial, and subperitoneal fibroids in various stages of development. The existence of fibroid disease had been recognised six years previously, but it was then in such an early stage and the uterus was so small that no treatment was deemed necessary, and her advanced age encouraged the hope that any further growth would be very slow. In both cases a very satisfactory convalescence followed the removal of the tumours.

Mr. CHRISTOPHER MARTIN (Birmingham) showed three specimens of Mal-formed Uteri. The first was a so-called "double uterus" (didelphys uterus). In this case the left half was patent and the right was distended with decomposing menstrual blood (pyometra). This was first drained per vaginam in May, 1895, but the opening made closed, and retention of the menses with septic complications again supervened. As the patient was becoming pyæmic the double uterus was removed by vaginal hysterectomy in August, 1900. The two uteri were quite distinct, the peritoneum dipping down between the fundi as far as the internal os. The cervical canals were connected by fibrous and muscular tissue, but the two cavities were separate. The patient, who was married and had one child, was 41 years of age. The second specimen was a one-horned uterus. This patient, aged 45 years, had had two children. In May, 1899, Mr. Martin removed a big semi-gangrenous cystoma of the left ovary with a twisted pedicle. When operating he observed that the right ovary, tube, and horn of the uterus were absent. The patient continued to suffer severe pelvic pain with irregular hæmorrhages which nothing benefited. Finally, in September, 1900, Mr. Martin removed the uterus per vaginam with complete relief to the patient's sufferings. The third specimen was a rudimentary double uterus with misplaced hypertrophied ovaries, removed from a single girl, aged 18 years. She had never menstruated and the vagina was a cul-de-sac only one inch long. The external genitals, pubic hair, and breasts were well developed. Each ovary was sausage-shaped, between four and five inches long, stretching from the internal abdominal ring to the corresponding kidney. There were ripening follicles in each ovary. From each ovary there stretched a thin rounded muscular cord, about one-third of an inch thick and three inches long, which dipped down into the pelvis between the bladder and rectum and ended, without uniting with its fellow, in the top of the rudimentary vagina. Evidently here the two ducts of Müller had been arrested in development at a very early stage. All three patients made a complete recovery.

Mr. BOWREMAN JESSETT read a paper upon the Surgical Treatment of Prolapse of the Uterus.

The PRESIDENT delivered his Inaugural Address. The present year, he said, inevitably constituted a historical landmark; but a detailed comparison of modern gynæcology with that which prevailed even 17 years ago, when the society was founded, would have committed him to writing a complete treatise upon the subject. He would limit his observations to a few operations. Asepsis in abdominal surgery not only reduced the mortality following operative procedures, but by making actual inspection practicable when the diagnosis was uncertain rendered early treatment possible. 17 years ago ovariotomy statistics were engrossing attention, and the cleanliness insured by Listerism, as it was then called, was reducing a terrible mortality almost to vanishing point. The success which attended ovariotomy for cystoma led to the removal of the tubes and ovaries for inflammatory affections, and also for the effect which their removal exercised upon fibroid growths of the uterus. In chronic inflammatory disease of the uterine appendages the value of operative treatment was now beyond dispute, and the inefficiency of other forms of treatment had long been recognised. Once the tubes were affected they never regained their healthy condition but remained an ever-possible source of fresh inflammatory trouble. The patients were invariably chronic sufferers and operation alone could give permanent relief. When operation became the recognised treatment whole chapters devoted to earlier methods were practically deleted. Removal of the ovaries for fibroid tumours of the uterus, however, had not fulfilled the expectations to which

the success attending early operations gave rise. It was applicable only to tumours of a comparatively small size, and its results both as regards checking the growth and arresting the hæmorrhage were quite unreliable. The position of the ovaries below and behind the uterus rendered the operation frequently difficult or even impossible and it was not less dangerous than removal of the tumour itself. This naturally led to the consideration of hysterectomy. This was at first an operation of appalling mortality. Keith alone obtained fair results. He recorded 38 cases with three deaths. The extra-peritoneal treatment of the stump introduced by Koeberle marked an important advance, but though many operators working upon this principle obtained excellent results the operation was never regarded as an ideal one. Many modifications followed. Panhysterectomy had then a fair trial, but involved necrosis and foul discharges, and was not a commendable operation. At length the plan of ligaturing both the uterine and ovarian arteries removed the principal danger associated with hysterectomy—viz., secondary hæmorrhage—and at present the generally accepted rate of mortality (with experienced operators) was 5 per cent. Even this rate would unquestionably be lowered were it possible to obliterate the traditional teaching that operation should be deferred till life were threatened or existence was unsupportable. A London teacher had recently given 17 as the percentage mortality, but essential factors had been ignored and the result of a computation so made might as well have been 70 as 17. Turning to removal of the uterus for cancer he said that Mr. Jessett had recorded a series of 107 cases with an immediate mortality of under 8 per cent. Where it was desirable to operate and yet be certain that the disease would recur he questioned the advisability of performing complete hysterectomy. In almost every case recurrence took place in the cicatrix and this, if the uterus had been completely removed, lay in direct contact with the bowel, which therefore became soon involved in the cancerous growth. When the disease commenced in the cervix it extended laterally, not to the body, which became involved at a late stage, if ever, and which therefore afforded greater or less protection to the bowels. In conclusion, he summarised the evolution of modern knowledge on ectopic gestation. The practical lesson which had been learned was that, whatever the phase and whatever the stage, there was but one remedy—viz., operation; where, however, the fœtal heart could be detected the question arose whether the operation, always inevitable, should be undertaken at once or deferred for a time.

HARVEIAN SOCIETY OF LONDON.

Exhibition of Cases.

A MEETING of this society was held on Feb. 21st, Dr. D. B. LEES, the President, being in the chair.

Mr. J. JACKSON CLARKE showed a case of Spastic Paralysis in a boy, aged six years. The spastic condition chiefly affected the muscles of the right thigh and leg and to a less extent the left side. The parents first noticed it when the child was two years of age. At present the foot was in a line with the leg and the muscles had the characteristic "clasp-knife" action. The boy could not wear an ordinary boot on the right foot and the gait was difficult, the boy preferring to crawl. The mental faculties were somewhat impaired. Mr. Clarke intended to elongate both tendons Achillis and on the right side to divide the hamstrings. During the past four years he had treated surgically many cases of the kind and the results, both in the upper and the lower extremities, had been most satisfactory. Careful post-operative treatment was necessary to insure success. Failures were either due to insufficient operative measures or to want of proper instrumental control after operation. Save in cases where great mental deficiency was present the old rule of non-interference was obsolete. Massage was of no lasting benefit before operation.—The PRESIDENT, Dr. A. A. BATHE, and Dr. W. EWART discussed the case.

Mr. CLARKE also showed a girl, aged 16 years, the subject of Congenital Syphilis. For two years he had treated her for gummata rapidly forming over the nasal bones, in the nasal septum, and at the lateral aspect of the skull. Before that she was under a physician for severe syphilitic enlargement of the liver and spleen. The patient was anæmic and stunted. The common stigmata of the disease were absent and there were no absolutely diagnostic symptoms of hereditary syphilis present. Surgically, epiphyseal and joint lesions and weak spines that resisted ordinary anti-rachitic treatment were common evidences of syphilis. In infants the rule was—When in doubt try mercury; if a rapid improvement followed there was no doubt as to the nature of the morbid condition. The present patient, though suffering from late lesions, had greatly benefited from mercury and iodide of potassium.—Dr. EWART referred to similar features as regards hepatic and splenic enlargement, stunting of growth, peripheral gummata, &c., in a male patient of the same age. In his case there had been early keratitis, perforation of the palate, and clubbing of the fingers, but the teeth were quite unaffected.—Mr. CAMPBELL WILLIAMS thought the case was one of acquired syphilis contracted during the early years of life. There was a total absence of all the classical signs of the congenital type in the teeth, eyes, ears, and physiognomy. Moreover, extensive gummatous ulceration with great destruction of the external soft parts of the nose and adjacent tissues, together with isolated and broken-down gummata, were common in the tertiary stage of the acquired disease, but was not the form of tissue attack selected by the tertiary stage of the congenital type of the malady. Text-books did not recognise that congenital syphilis had its secondary and tertiary stages, just as the acquired form had.—Dr. TRAVERS SMITH and the PRESIDENT also took part in the discussion, and Mr. CLARKE replied.

Dr. EWART and Mr. S. VERE PEARSON showed a case of Phthisis treated by Maguire's Formaldehyde Injections. The patient was a male, aged 28 years, in whom bilateral apical tuberculous infiltration without the major signs of excavation was complicated by dental and dyspeptic trouble. Although not a pure instance of the treatment, since other measures had also been adopted, it indicated the partial improvement which might be obtained in a case of marked tuberculosis. After 23 injections of formaldehyde the patient still coughed up numerous bacilli and the râles persisted at both apices, but there was marked general progress in the expansion and resonance of the chest on percussion. The cough was better and the expectoration was less and had changed from muco-pus to clear mucus. A second course was contemplated after a stay in the country.—The PRESIDENT requested Dr. Ewart to favour the society with the general results, as far as he could state them, which he had obtained from this plan of treatment. It was necessary to be very cautious in drawing conclusions from individual cases. The importance of very carefully weighing the evidence for and against a new treatment of this kind was indicated by the past experience of the profession with regard to tuberculosis.—Dr. DUTCH, Dr. BATHE, Dr. E. CAUTLEY, and Mr. HUBERT PHILLIPS also discussed the treatment.—Dr. EWART, in reply, stated that his experience of the treatment was decidedly favourable and agreed with that of Dr. Maguire. He referred to other cases shown elsewhere in which the good results had been manifest. In view of the careful manipulation necessary and of the slight complications apt to arise, such as local swelling, thrombosis, &c., he could not recommend the treatment for out-patients. In hospital and private practice he had not had any serious complications and no abscesses.

Dr. BATHE showed a boy, aged 11 years, who was subject to recurrent attacks of Psoriasis Guttata for three years and he asked for suggestions as to methods for preventing the attacks.—Mr. WILLIAMS and Dr. SMITH discussed the case and made some suggestions as to treatment and prognosis.

Mr. H. J. CURTIS showed an infant with Accessory Auricles on the Neck.

Dr. W. J. HARRIS showed a typical case of Brachial Neuritis which was associated with loss of radial pulse on the same side.—The PRESIDENT said that he could entirely confirm what Dr. Harris had stated as to the improvement in this case. Brachial neuritis or neuralgia certainly occurred as a sequela of influenza, but not usually with such marked symptoms, and it seemed possible in this case from the history, the absence of the radial pulse, and the fact of a dilated left ventricle, that there had also been embolism or thrombosis.—Dr. HARRIS demonstrated a method of applying a combination of the galvanic and faradaic currents in the treatment of the case and the meeting then adjourned.

EDINBURGH OBSTETRICAL SOCIETY.

Exhibition of Specimens.—Psychoses following Pelvi-abdominal Operations.—Apparent Low Implantation of the Ureteric Opening.

A MEETING of this society was held on Feb. 13th, Dr. R. MILNE MURRAY, the President, being in the chair.

Dr. F. W. N. HAULTAIN showed a Large Œdematous Fibroid removed by Abdominal Hysterectomy and Double Dermoid Ovarian Tumours, one being associated with Supernumerary Ostium of the Fallopian Tube.

Dr. N. T. BREWIS showed a Uterus with Cancer of the Body; a Fibroid Uterus studded with Tuberculous Nodules; and two other Fibroids removed by Hysterectomy.

Dr. MICHAEL DEWAR showed two Hodge Pessaries which in three months had become almost circular and unbent while in the vagina. No hot douche had been used by the patient, and in order to soften them it required a much higher temperature than could be borne by the vagina. The explanation might lie in inferior manufacture due to the scarcity of rubber.

Dr. J. HAIG FERGUSON exhibited a Photograph showing Displacement of the Sigmoid Flexure of the Colon in front of a Full-time Pregnant Uterus; and a Cystic Kidney removed by Abdominal Section, which lay in the pelvis and presented some of the physical signs of an ovarian cystoma.

Professor A. R. SIMPSON showed an Ovarian Fibroma; a Double Ovarian Carcinoma from a patient, aged 26 years; and a Double Ovarian Cystoma (one had ruptured) and a Tubal Pregnancy.

Dr. G. KEPPIE PATERSON showed a specimen of Hydramnios of the Ovum. It was expelled at between two and a half and three months after cessation of the menses and was of about the size of a lemon of moderate dimensions. The amnion with its contents was expelled alone and whole, the decidua following a few days afterwards. The fœtus was found attached to the amnion and was evidently of less than three weeks' growth, so that the amnion must have continued secreting the liquor after the death of the fœtus. At six weeks after cessation of the menses no appreciable enlargement of the uterus could be detected. The patient suffered more than ordinarily from the vomiting of pregnancy.

Dr. J. HALLIDAY CROOM read a paper on Psychoses following Pelvi-abdominal Operations. Mental aberration occurred after operations in general surgery, even after such a minor accident as a simple fracture. After the administration of anæsthetics delirious mania had followed and in some cases weak-mindedness had lasted for a very variable period. Abdominal and pelvic surgery was no exception. The normal functions of the uterus and ovaries were themselves not unassociated with mental aberrations; alterations in the temper, actual hallucinations, and disordered appetites of all kinds were accompaniments both of menstruation and pregnancy. The same was the case with the menopause: it was more frequently associated with curious mental phenomena than any other period of a woman's life. Everyone was acquainted with the frequency of insanity occurring after ordinary labour, but puerperal insanity generally occurred in those whose personal or family history indicated some mental weakness. Dr. Croom first gave an illustrative case of mental disturbance associated with menstruation in an otherwise healthy woman with a good family history where no operative interference had been carried out. The patient was unmarried, aged 26 years, and the complaint was that for 10 years she had exhibited symptoms of violent dislike to her relatives, especially her brothers and sisters, during the five days that her catamenia lasted. She was morose during all the period, declined to speak to any member of the family, and was violently insulting when spoken to, but the day after the catamenia ceased she was bright, cheerful, and desirous of enjoying all the pleasures of life. She had been examined under chloroform and nothing morbid was found. She had no dysmenorrhœa. Her sisters were all healthy and well and there was no history of insanity in the family as far as could be ascertained. She married and shortly afterwards became pregnant, and during the whole of the pregnancy she exhibited symptoms similar to those occurring during menstruation. Shortly after labour she became perfectly well and had remained well since, even during her menstruation. Of insanity occurring after operation Dr. Croom instanced the case of a young widow, aged 32 years, who was suffering from villous endometritis with profuse hæmorrhage, both menstrual and inter-menstrual. She was curetted and made an excellent recovery. Some weeks afterwards she took an inordinate dislike to her child, threatened to murder it, and she is now an inmate of an asylum. Another was a young woman, aged 25 years, reduced to a state of extreme anæmia from constant and profuse uterine hæmorrhage dependent upon the presence of a uterine polypus. It was of about the size of a hen's egg. Such an operation entailed no very great shock to the system. The patient left the nursing home perfectly well and there had been no return of the hæmorrhage. Two months afterwards she harboured the delusion that she had been delivered of a child and was now in an asylum. So far as could be discovered there was no family history of insanity either direct or among her relatives. It might be possible to account for this case by the fact of the profound anæmia of the patient, and under such circumstances the shock of the operation would be comparatively great; but then the symptoms did not appear for at least two months after the operation, and by that time she had become physically stronger in every way. The nature of her delusion indicated that her insanity was associated with the operation and not an accidental coincidence. These cases indicated that such accidents might occur after gynæcological operations and unfortunately were utterly and absolutely unpreventable. Another case was that of a young woman of an exceedingly healthy family who suffered from intense spasmodic dysmenorrhœa which withdrew her from active duties every month. After consultation with her friends the cervix was dilated and for the two succeeding months she was quite free from dysmenorrhœa, but at the third month she became violently maniacal, and her mental equilibrium had been so very much upset ever since that her marriage had to be abandoned. Dr. Croom could also give cases of mental changes following minor operations, though fortunately less pronounced and attended with happier results than those just cited. Kelly recorded six cases of insanity after perineal operations, and one of these patients died in acute mania. Major operations might also be followed by mental disease. A patient, apparently in robust health, was operated on for a simple ovarian tumour. There were no adhesions and no difficulty whatever in the operation, which lasted 10 minutes. On the following day the patient became maniacal and she died from exhaustion in four days. It might probably be said that this was the mania or delirium of sepsis but the necropsy showed not a trace of sepsis anywhere. There was no family history of insanity. Kelly on this subject recorded eight cases out of over 2000 abdominal sections; of these five patients recovered, two remained insane, and one committed suicide. Dr. Croom's record showed five cases of insanity in over 1000 sections. Another case occurred after a rather troublesome ovariotomy with numerous adhesions. The patient made an excellent recovery. On the seventh day the stitches were removed and the wound had completely healed except for one stitch tract suppurating. On the same evening she became excited, and two days later acutely maniacal. She died shortly afterwards. One of the most painful cases was that of a patient who had hysterectomy performed for a rapidly-growing fibroid. The tumour was a large one involving a wound nearly from the ensiform cartilage to the pubes. The stump was treated intra-peritoneally. All went well till the night of the seventh day after the stitches had been removed. In the very short absence of the nurse the patient jumped out of bed, tore off the dressing, and before she could be brought back to bed the strapping had given way. This allowed the wound to reopen at its lower margin and a small portion of the gut escaped. She was in a state of violent excitement and was anæsthetised with difficulty. The temporary hernia was dealt with and the patient recovered, but only to become an inmate of an asylum, where she still was. The next case was one of melancholia which supervened six months after a simple ovariotomy. It was an easy operation and the recovery was good, but six months later the patient began to show symptoms of dislike of her friends along with evidence of suspicion and melancholy. She had now been some time in an asylum. In all the cases the operation in itself was entirely successful, and, as far as could be traced, they had no hereditary tendency whatever in any direction. In looking for causes of these mental disturbances after operation the first factor was the hereditary one and the second

possibility was sepsis; loss of blood, defective action of the kidney, &c., had also their influence in producing mental symptoms. In removing the ovaries the climacteric was induced and the woman was placed in all the possible risks of that period. Probably a neurotic constitution was an essential pre-requisite for the development of post-operative insanity. In all the cases narrated the possibilities of sepsis were excluded by careful precautions. Alienists said that the main element in the production of post-operative insanity was a predisposition, hereditary or acquired. It was remarkable that it had not been shown that insanity was more common after operations on the genital organs than after operations on any other organ, yet mental troubles were often associated with the normal occurrence of puberty, menstruation, pregnancy, and the menopause. The subject of operations undertaken in insane women with the view of effecting a cure of the mental disease was also touched upon. Dr. Croom considered that under no circumstances ought any insane woman to be operated upon unless for some distinct condition which was compromising life. Removal of ovaries and other operations performed with a view of influencing insanity or hysteria were exceedingly discouraging. He had removed the ovaries in a case of hystero-epilepsy with evident cure of the nerve symptoms. It was quite certain that after degenerative processes had occurred in the brain cells it was absolutely useless to look for any mental cure by any form of operative procedure.—Professor SIMPSON, Dr. D. BERRY HART, Dr. HAULTAIN, Dr. J. W. BALLANTYNE, Dr. A. ROBERTSON, Dr. JAMES RITCHIE, Dr. BREWIS, and the PRESIDENT discussed the paper.

Dr. BERRY HART read a paper on Apparent Low Implantation of the Ureteric Opening. Several cases of incontinence of urine had been recorded where the cause was an apparent low implantation of the end of the ureter on the vestibule near the edge of the urethra or the hymen and on one side usually. Cases had been narrated by Baker, Davenport, von Massari, Benckiser, Sänger, and Olshausen. Difference of opinion had existed as to whether the whole tube was ureteric or only its upper part ureteric and its lower part Wolffian. Dr. Hart discussed the anatomy and development of the Wolffian duct and ureter and advocated the opinion that the whole aberrant tube was not ureter but ureter in the upper part and Wolffian duct below. The anomaly was due to the persistence and potency of the lower segment of the duct and to its original junction with the ureter. The operation necessary in such cases was briefly described.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

Psammoma of the Optic Nerve.—Exhibition of Specimens.

A MEETING of this section was held on Jan. 11th, Professor A. C. O'SULLIVAN, the President, being in the chair.

Mr. SWANZY and Dr. H. C. EARL described a case of Psammoma of the Optic Nerve. Mr. Swanzy had removed a tumour of the optic nerve by Knapp's method, leaving the eyeball intact in the orbit. The tumour measured one and a half inches long by three-quarters of an inch wide. It filled the orbit and had caused very marked proptosis of the eyeball. The eye was blind from optic atrophy. The microscopic examination by Dr. Earl showed the following structure of the tumour. The cellular elements of the tumour were principally small, round, mononuclear cells. There was very little fibrous connective tissue present. The fibres of the optic nerve could be traced through and over the surface of the tumour, which lay within the dural sheath of the nerve, except at its posterior part. There were numerous calcified rounded bodies of varying size, all showing more or less distinct lamination. Blood-vessels were numerous in some parts, and these were the parts which contained fewest calcified bodies. There were found also numerous masses of a hyaline material which contained generally a few round cells. The most usual tumour of the optic nerve was myxoma or myxo-sarcoma. Mr. Swanzy and Dr. Earl had been unable to find any case of psammoma of the optic nerve on record within the last 16 years, the literature for which period they had searched. Two text-books stated that psammoma of the optic nerve did occur, but gave no reference to cases.—Mr. STORY said that, as far as he knew, it was the very first case in Ireland, perhaps in the United Kingdom, in which a tumour of the optic nerve had been surgically removed with the preservation of the eyeball.—Professor E. J. MCWEENEY said that on looking at the microscopic specimens of the calcareous bodies the impression he got was that they were something in the nature of calcified corpora amylacea. He had often met with corpora amylacea in various parts of the central nervous system almost as large as those he saw to-night, but certainly not so numerous. He had seen appearances precisely similar in the prostate gland except that the individual corpora were larger. Dr. Earl's reference to a preliminary hyaline stage in these masses would seem to bear out the idea that they were of the nature of calcified corpora amylacea, as it was well known that these bodies were at first hyaline before calcareous deposition set in. The term "psammoma" implied, he believed, a laminated concentric arrangement of layers of fibroid tissue surrounding the central masses. This was found in the pineal body, which was the type of psammomata, and in the absence of a definite lamination of the connective tissue round these corpora amylacea he should hesitate to call the structure a psammoma. He only expressed these views in a tentative way, as he had not the opportunity of making more than a cursory inspection of the sections. With regard to the involvement of the optic nerve itself, he confessed that he did not see any nerve fibres in the specimen. If corpora amylacea were really the groundwork of the tumour it was robbed of its rarity to a great extent, as these bodies were found frequently in the nervous system in both normal and pathological specimens.—Mr. SWANZY, in reply, said that in removing the tumour the external rectus was divided (it was not necessary to dislocate the eye forward, as that was already done) and the eyeball turned over on the base of the nose, which happened to have a low bridge; otherwise he would have selected the internal rectus. By these means he could easily get at the optic nerve as it entered the eyeball, and he found the tumour pressed close to the eyeball, without being adherent. He divided the optic nerve with the scissors, which enabled dislocation across the nose to be carried further. He felt round the tumour with his finger and separated it as far as possible, dividing it then with scissors close to the optic foramen. After suturing the external rectus to its stump he replaced the eyeball in its socket. There was now no sensation in the cornea and the retina was beginning to undergo degeneration. He thought it hardly likely that the eye would prove useful as an ornament. The eyelid was drooping now, but on retraction taking place, as he believed it would, he was quite certain that the cornea would slough. He hardly thought it to be an operation suited for a tumour of the optic nerve itself. It was more suited for non-malignant tumours of the orbit, without interfering with the optic nerve, the cutting of which would mean interference with the nutrition of the eyeball. He therefore did not consider it a very useful operation.—Dr. EARL, replying to Professor MCWEENEY, said that the calcified bodies might have been calcified corpora amylacea, but then there were no non-calcified corpora amylacea in the specimen, which he thought was a peculiar coincidence; and, furthermore, the hyaline material, the precursor of the calcified bodies, was not laminated at all.

Dr. TRAVERS SMITH exhibited the Stomach of a Man, aged 45 years, presenting an Enormous Carcinomatous Tumour along the greater curvature projecting into the lumen but sparing the orifices. The patient suffered from neither pain nor vomiting, his appetite was good, and his bowels were regular. The specimen was of interest as illustrating how vast a carcinoma might be present in the stomach without producing stomach symptoms if the growth did not involve the orifices.

Dr. EARL showed the Ovaries of a Child at Birth which contained a large number of Follicular Cysts. The greater part of the ovarian tissue was destroyed by the pressure of the cysts.

Professor MCWEENEY demonstrated Blood Films from a case of Spleno-medullary Leukæmia which he had at present under observation. The condition was quite characteristic, the red corpuscles being 3,440,000 and the white being 300,000 per cubic millimetre. Myelocytes were very numerous, a large minority being eosinophil.

Normoblasts were extremely numerous, each field containing several; megaloblasts were also common.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.—A meeting of this society was held on Feb. 14th, Mr. Rutherford Morison, the President, being in the chair.—Dr. E. H. Davis showed a youth, aged 19 years, who after operation for exostosis on the posterior and outer aspect of the humerus 12 months ago developed complete Musculo-spiral Paralysis. Operation was advised with a view to suturing the divided nerve.—Dr. I. G. Modlin showed: 1. A woman, aged 30 years, who after having been treated for other tuberculous bone lesions had the Left Elbow-joint Excised. There had been some local recurrence of tuberculous disease in the elbow a few months later; this time it was treated by scraping, packing with iodoform gauze, and a glycerine emulsion of iodoform. The elbow now showed a perfect result. He cited several cases in which treatment by iodoform emulsion had been successful and claimed for it some specific anti-tuberculous property. A lengthy discussion ensued in which the consensus of opinion was against the specific action of iodoform emulsion. 2. A woman, aged 49 years, whose Right Breast was Removed with the Glands three years ago. There was recurrence a year after and again 18 months later in the axillary glands and finally three months ago. Injections of Coley's fluid, which were begun on Dec. 22nd, were continued daily until Dec. 31st, when they were suspended for three weeks, and then they were given irregularly until Feb. 8th, the dose being gradually increased up till 15 minims. No benefit had resulted.—Many of those present related their experiences with Coley's fluid, thyroid extract, and Chian turpentine in inoperable sarcomata and carcinomata, universally without permanent good result.—Dr. G. R. Murray showed a miner, aged 29 years, who had syphilis five years ago which was treated for one month only. Three months ago he developed frontal headache, alteration of vision, and daily fits during which consciousness was not lost. The fits consisted of giddiness, pricking sensation in the left hand, followed by chronic spasm of the left arm spreading to the leg of the same side. Examination revealed general weakness of the arms and legs, increased reflexes, and difficulty in walking due to post-neuritic atrophy. The treatment, which consisted of iodide of potassium and mercury internally and mercurial inunctions, had resulted in almost complete cessation of the fits.—A lengthy discussion followed in which the following points were considered: mercurial *versus* anti-mercurial treatment of syphilis, imperfect anti-syphilitic treatment predisposing to tertiary lesions, the maximum useful dose of iodide of potassium, and early trephining for the treatment of optic neuritis and the prevention of optic atrophy. The opinion was against operation in this case because of the destructive effects of the lesion and the permanence of optic atrophy and the relief of the symptoms by the present treatment.—Dr. W. G. Richardson showed a case of Ruptured Abscess of the Broad Ligament. The patient, a woman, aged 25 years, had had uterine hæmorrhage two months ago, apparently not abortion. A month ago there was sudden abdominal pain, with faintness, sickness, and collapse, and on the following day when the patient was admitted to the hospital the abdomen was found to be distended and there was dulness in the flanks. The abdomen was opened. The peritoneum contained pus and in the left broad ligament was a swelling containing pus which was removed with ovary and tube. Friability of the tissues prevented ligature and necessitated the fixing of the left cornu in the lower end of the incision. The peritoneum was washed out and a drain was left in Douglas's pouch. In spite of extreme collapse and rupture of the abscess into the general peritoneal cavity a good recovery had been obtained. The primary focus of infection could not be found, the removed ovary and tube being healthy.—Dr. A. M. Martin showed a youth, aged 19 years, whose shoulder had been crushed five weeks ago. He had been treated by a bone-setter previously to the operation. The movements of the shoulder-joint were restricted and painful. Physical signs pointed to fracture and sub-coracoid dislocation of the head of the humerus. Operation by anterior incision was performed. The fractured head was found in the glenoid fossa and was excised, the deformity having been entirely due to displacement of the upper end of the lower fragment. The result of operation showed great improvement in mobility.—Dr. G. G. Turner showed a case of Charcot's Elbow. A man, aged 49 years, fell upon his wrist two and a half months ago, injuring his elbow, which became swollen and painful. In a few days he recovered sufficiently to resume work; five days later the elbow began again to swell. The patient now exhibited enormous swelling, increased flail-like mobility, and large osteophytic outgrowths. On account of this development he was discovered to have Argyll-Robertson pupil, absent knee-jerks, and ataxia, which was especially well marked in the arms.

MIDLAND MEDICAL SOCIETY.—The sixth ordinary meeting of this society was held on Feb. 13th at the Birmingham Medical Institute, Mr. Jordan Lloyd, the President, being in the chair.—Dr. O. J. Kauffmann showed a man, aged 22 years, suffering from Friedreich's Ataxia. The patient had ataxia on walking of considerable, though but mild, degree, and showed Romberg's symptom very marked. There was also ataxia of the hands fairly marked on writing. The knee-jerks and plantar reflexes were both absent. There were no sensory symptoms and at no time had the patient suffered from fulminant pains. Fine shaking of the head was present, particularly on an attempt to fix an object, and quick, shock-like nystagmus was marked when the eyes attempted to follow rapidly a moving point. This last sign had developed while the patient was under observation. There was no tremor of the hands, and at no time had the patient had any difficulty of micturition. The fundi oculorum were normal; the intelligence was very good. Symptoms of this illness had first appeared five or six years ago, and had commenced with severe, often intolerable, itching under the balls of the toes. Gradually unsteadiness in walking and standing had crept on, at first only noticeable to the patient himself, but within the last two or three years perceptible to others and compelling him six or eight months ago to give up work. He had been a sufferer from periodical headaches which he connected with his present illness. The family history was inconclusive, the patient having left home at the age of 11 years and not having seen his people since then. Although he had led a varied and hard life he bore no marks of syphilis and strenuously denied ever having suffered from this disease, and showed no signs whatever of intemperance. As regards the diagnosis, the only other disease which might be thought of was insular sclerosis; but the rather early onset and the total absence of the knee-jerks, coupled with the absence of tremor from the hands and arms, were points against the diagnosis of that condition.—Mr. F. Marsh showed a specimen of a Wool Swab which had been encysted in the peritoneal cavity for 17 months and had been removed by him 10 days previously. The patient was a man, aged 51 years. In September, 1899, an exploratory operation had been performed in a hospital on account of symptoms pointing to gall-stones. "Adhesions" only were found. No relief was afforded, and after a few months the intermittent pains became constant, the vomiting more frequent, and the action of the bowels very irregular. He was admitted into the Queen's Hospital in October, 1900, but careful and repeated examinations failed to discover any definite cause of the symptoms. Subsequently he attended as a medical out-patient. A fortnight ago a distinct swelling, hard and rounded, was noticed for the first time, presenting at the lower edge of the liver in the region of the gall-bladder. He was therefore admitted for an exploratory operation, no definite diagnosis being made. On exposure the swelling resembled a thickened and distended gall-bladder, adherent everywhere to coils of intestine and omentum. These adhesions were with difficulty broken down and the coils of intestine freed. An incision was made into the swelling when a little odourless pus escaped from around a sebaceous-looking mass which further examination showed to be wool, about an ordinary handful. The cyst wall was removed in its entirety. No other lesion was found. The man made a good recovery and was now free from pain.—Mr. Christopher Martin showed a large Subserous Myoma which had become strangulated from Axial Rotation on its Pedicle. It was removed from a married woman, aged 40 years. The tumour caused few symptoms till rotation occurred when acute peritonitis set in. When the abdomen was opened the tumour, which was of about the size of a football, was found to be semi-gangrenous, of a greenish black colour, and universally adherent to small and large omentum. The pedicle attached to the fundus was three inches long and twisted through three complete turns.

After separating the adhesions the pedicle was ligatured and the growth was removed. The rest of the uterus was studded with smaller myomata and was accordingly removed by the sub-peritoneal method. The patient made a good recovery and returned home on the seventeenth day.—The President showed a Suppurating Ovarian Dermoid removed by abdominal section from a girl, 18 years of age, who was admitted to the workhouse infirmary with symptoms of puerperal fever coming on a few days after her first confinement. The tumour lay fixed in the left loin and had most of the characters of a renal enlargement.—Dr. W. J. McCardie read a paper on the Choice of an Anæsthetic.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.—A meeting of this society was held on Feb. 15th at the Paddington-green Children's Hospital, Mr. Watson Cheyne being in the chair.—An Address of Condolence to the Crown, drawn up by the council, was approved by the meeting, the members meanwhile standing.—Dr. Arnold Lawson showed a case of Acute Retro-bulbar Neuritis in a girl, aged 10 years, with a tuberculous personal and family history. The sight of one eye had suddenly failed in May, 1900. The pupil was semi-dilated and almost immobile, and the edges of the optic disc were slightly blurred. Two days after the excision of the other eye (which had been lost in early infancy) there was a remarkable improvement in the sight of the remaining eye. Colour sense was good as regards blue and red, but absent as regards green. The optic disc was atrophied. The pupil acted to light.—Dr. McCaw said that the case reminded him of one of cerebellar tumour with optic neuritis.—Mr. Watson Cheyne showed a case of Coxa Vara in a child, aged 10 years, in which four years ago he had operated upon the left leg in the following manner. A longitudinal incision was made on the outer side of the thigh at the upper part and the femur divided transversely below the lesser trochanter. The limb was then rotated inwards, so that when fastened to the upper part of the femur it moved through the normal limits of rotation. The ends of the bones were fixed in this position by an aluminium plate, which embraced both, and was secured by nickeled tin-tacks. The plate was still in, the position of the foot was normal, and the patient walked quite well with that leg. The other leg was one and a half inches shorter than its fellow and showed marked external rotation. Mr. Watson Cheyne advocated operating on both legs at the same time in other cases.—Mr. Clement Lucas said that the procedure described by Mr. Cheyne was generally known as Gant's operation, though perhaps not used for coxa vara.—Mr. Jackson Clarke and Dr. G. A. Sutherland made some remarks.—Mr. Watson Cheyne, in reply, said that Mr. Gant divided the femur below the trochanter for flexion or for abduction and not for rotation. He thought it would be difficult to get enough rotation from inter-trochanteric osteotomy.—Dr. Leonard Guthrie showed a Myxœdematous boy, aged six years, after six months' treatment by thyroid gland extract, with photographs illustrating the improvement that had taken place.—Dr. Sutherland, Dr. Fletcher Beach, and others discussed the case.—Dr. Dan McKenzie showed an infant, nine months old, affected with head-jerking and nystagmus of about two months' duration. Twitching of the left corner of the mouth and of the shoulder muscles on the same side had been noted. The patient was slightly rickety and very intelligent for her age. Temporary lapses into unconsciousness had been observed. She was improving under small doses of arsenic.—Dr. Edmund Cautley and Dr. Sydney Stephenson discussed the case.—Mr. Jackson Clarke showed a child, aged nine months, who at birth had marked Macrostoma and Severe Club Hand, both on the right side. The former had been successfully operated upon when the child was five weeks old. Later Mr. Clarke contemplated operating for the club hand by section of ligaments, elongation of tendons, and splitting the lower end of the ulna.—The Chairman and Dr. Sutherland offered a few remarks upon the case.—Dr. Lambert Lack showed a case of (?) Basic Meningitis due to acute suppurative otitis in which recovery followed puncture of the drums of the ears.—The Honorary Secretary showed for Dr. George Carpenter a case of Proptosis in a girl, aged 12 years, who presented no other evidence of exophthalmic goitre except the occasional presence of Graefe's sign.—Dr. McCaw read a paper upon a case of Tetanus Neonatorum which had been successfully treated with anti-tetanic serum. The diagnosis was confirmed bacteriologically.

CLINICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on Feb. 19th, Mr. F. A. Southam, the President, being in the chair.—Mr. H. Lund showed three cases of Osteal Sarcoma.—Dr. A. Wahltuch showed two patients Treated Successfully by Massage—viz., (1) infantile paralysis in a child, aged four years, and (2) a girl, aged 17 years, who had suffered first from neuralgic headaches, bald patches appearing later near the fontanelles, and subsequently white hair growing to normal length on the affected areas. The normal hair was of a very dark brown colour. The effect of four months' massage was the appearance of a new growth of dark hair replacing the white.—Mr. J. E. Platt gave a demonstration on the Treatment of Flat-foot.—Dr. J. Gray Clegg showed: (1) an Unusual Case of Graves's Disease in a man in which there was marked proptosis of the left eye only and enlargement of the right lobe of the thyroid gland; and (2) a form of Chronic Ulcer of the Cornea.—Mr. J. Howson Ray showed two cases of Traumatic Epilepsy treated by Sub-dural Implantation of Silver Foil. The first patient was a soldier of the Black Watch, aged 30 years, who was wounded in the left parietal region at Magersfontein in December, 1899, when portions of the parietal bone and underlying brain were damaged. He was operated upon in Cape Colony and was then invalided home. Jacksonian epilepsy came on about May, 1900, and a preliminary trephining showed embedded spicule of bone about an inch away from the original wound, as well as adhesion between the dura mater, scar tissue, and damaged cortex. Mr. Ray separated the dura mater from the adherent brain and introduced a piece of silver foil measuring one and three-quarter inches by one inch beneath the dura, to which it was sutured. This operation took place on Oct. 22nd, 1900, and up to the present time two fits only had occurred and there was marked improvement in the general condition. The second patient was a civilian, aged 21 years, who was injured four years previously when about a third of the right parietal bone was smashed and the underlying cortex cerebri was destroyed. Adhesion of the dura mater to the brain supervened, leading to frequent epileptic seizures of the Jacksonian type. Operation was carried out as in Case 1 on Oct. 24th, 1900, when a piece of silver foil measuring two and a quarter inches by one and a half inches was sutured in position. Up to the present no fits had occurred since the operation. A radiogram was exhibited showing the silver foil in position.

NEWCASTLE-UPON-TYNE CLINICAL SOCIETY.—A meeting of this society was held on Feb. 7th.—Dr. F. C. Coley read a paper on Quacks and their Advertisements. The paper, which was illustrated by pamphlets, cuttings, and instruments, was most interesting and caused great merriment in the meeting. At the beginning Dr. Coley wished to impress the fact that a large amount of responsibility rested on the profession in the matter, and "the judicious pointing out of some of the errors to the public was one way of leaving this dirty world a little cleaner." One way in which this latter might be effected was by approaching the managing authorities of the more respectable periodicals and persuading them to have the more objectionable and harmful advertisements expunged. Quackery was defined as "a pretence of knowledge which was not there, combined with the treatment of a patient with no chance of a diagnosis."—Dr. F. Hawthorn, Dr. T. M. Allison, Dr. Alderson, Mr. Toggin, Dr. J. W. Leech, Dr. S. S. Whillis, and Dr. G. G. Turner discussed the paper and quackery in general.—Dr. Turner read notes on two rare cases of Strangulated Herniæ, the specimens being shown. The first case was that of an elderly man with a strangulated umbilical hernia. The operation for his relief included the insertion of Paul's tubes. Although rallying for 24 hours he sank at the end of the third day from shock. In the second case a woman was operated on for strangulated femoral hernia. Free herniotomy in the usual manner was performed, but Mr. Turner not being satisfied that the obstruction had been relieved opened the abdomen in the linea semilunaris. It was then found that the peritoneal neck of the sac was the cause of the constriction and also that the hernia had been reduced, although constricted, into the sub-peritoneal tissue. Liberation of the gut was effected, but the patient ultimately died from gangrene of the gut at the point of constriction. Mr. Turner laid stress on the constricting structure not being the usual one and on the difficulty of

determining when the bowel was in a safe condition to return.—Dr. Hawthorn, Dr. Leech, and Dr. T. Beattie discussed these two latter points with reference to cases in their experience.

LARYNGOLOGICAL SOCIETY OF LONDON.—A meeting of this society was held on Feb. 1st, Dr. Cresswell Baber, the President, being in the chair.—Dr. J. Donelan showed a case of Nasal Polypi with marked deformity, and also a specimen from a fatal case of Exophthalmic Goitre in which the thymus was not only persistent but actually enlarged. This he pointed out was quite usual in such cases and raised the question as to whether it had any causal relationship to the disease.—Dr. Wyatt Wingrave showed a section of a Mucous Patch of the Tonsil.—Dr. A. Bronner exhibited a New Cutting Trephine for Nasal Operations which he worked with an electro-motor.—Sir Felix Semon showed a drawing of Symmetrical Congenital Gaps in both Anterior Pharyngeal Pillars with Complete Absence of the Tonsils.—Dr. StClair Thomson thought that it could not yet be stated definitely that such cases were of congenital origin.—Dr. Davis showed a case of Cyst of the Floor of the Nose.—Dr. MacBride discussed the causation of such cysts.—Dr. Lambert Lack showed a case of Mucocele of both Frontal Sinuses which had expanded the bones and pushed the eyes outwards. He had opened the sinuses and on the left side had established a free opening into the nose. This side was doing well, but the right side did not make progress. He asked whether any further operation was advisable.—This was discussed by Dr. H. Tilley, Dr MacBride, and the President.—Dr. Lack also showed a case of Persistently Recurring Nasal Polypi with Frontal and Ethmoidal Suppuration on which he had operated with very good results.—The indications for operations on the frontal sinus were discussed by Dr. Tilley, Sir Felix Semon, Dr. FitzGerald Powell, Dr. Lack, and others.—Dr. Tilley showed some Papillomata removed from a child under anæsthesia in the sitting posture.—Dr. Dundas Grant showed a case of Epithelioma of the Tonsil, and a Section of a Vocal Cord which clinically suggested malignant disease, but microscopically proved to be inflammatory.—Dr. Grant, in conjunction with Dr. Mackintosh, also showed a case of Glottic Spasm in a woman, aged 24 years.—Dr. William Hill showed a case of Innocent Growth of the Right Vocal Cord, and Dr. Atwood Thorne and Dr. Dundas Grant with Dr. Wyatt Wingrave, showed Laryngeal Cases for Diagnosis.

LIVERPOOL MEDICAL INSTITUTION.—The third meeting of the Pathological and Microscopical Section of this society for the session 1900–91 was held on Feb. 21st, Dr. J. Hill Abram being in the chair.—Dr. Nathan Raw showed three specimens of Pericarditis, one acute fibrinous, one septic, and another tuberculous. Dr. Raw also showed a rare specimen of Cystine Calculi in a kidney and ureter.—Dr. W. Alexander and Dr. Dimond showed: (1) a specimen illustrating the Infiltration of a Multilocular Ovarian Cystoma from adjacent Malignant Disease of the Sigmoid Flexure; (2) a soft Myxoma removed from the groin of a man, for which he had been operated upon twice previously; and (3) a Fractured Pelvis of severe type, but which had not been accompanied with injury to any of the viscera.—Mr. W. Thelwall Thomas showed: (1) a Carcinoma of the Kidney, 5½ lb. in weight, which had been removed from a patient, aged 50 years, after suffering from hæmaturia for many years; (2) a Rodent Carcinoma removed from the occiput of a man aged 62 years; and (3) specimens of Carcinoma of one breast with Sarcoma of the other existing at the same time and removed from a woman aged 50 years.—Dr. F. H. Barendt showed a specimen of Comedo.—Dr. R. J. M. Buchanan showed specimens of Epithelioma'a from horses—(1) eyelid, (2) penis, (3) tail, the last being markedly pigmented.—Dr. J. E. Gemmell showed a surface Papilloma of an Ovary and a specimen of a Fibroma of an Ovary.—The specimens were discussed by the Chairman, Sir W. M. Banks, Mr. F. T. Paul, Mr. G. P. Newbolt, Mr. Thomas, Dr. Alexander, Dr. Raw, Dr. Gemmell, Dr. J. Barr, and Professor H. Briggs.—Mr. Paul gave a demonstration on Mastitis in its Relation to Tumour Formation. Mr. Paul evidenced the relation between chronic mastitis and varied tumour formations and illustrated his communication with numerous microscopical sections and a unique series of photomicrographs.—A discussion followed, in which the Chairman, Sir W. M. Banks, Mr. Rushton Parker, and Professor Briggs took part, and Mr. Paul replied.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 6th at the Dispensary, Broad-street, Mr. G. B. Wray, the President, being in the chair.—It was resolved, on the proposition of the President, seconded by Dr. H. Handford, that the members record on the minutes of the society their deep sense of grief at the loss they, in common with the empire, had suffered through the death of their dearly loved Queen Victoria and that their sincere sympathy go forth to His Imperial Highness and all the Royal Family in their time of bereavement.—Dr. Ransom then communicated his paper on the Suppression of Phthisis, dwelling on the responsibility of medical men. He maintained that the education of the individual and the public by them was essential to the successful treatment of phthisis. He instanced the great value of residence for a time in a sanatorium for educational purposes, *re* the disposal of sputum and its disinfection, the regulation of exercise and diet, the use of the thermometer, the taking of weight, the value of fresh air, and the harmlessness of cold; and that the period of convalescence be spent in some light outdoor employment and back to a country life. Agricultural training colleges would be of great value as supplements to sanatoria and endeavours should be made to start coöperative farms and horticultural colonies. Dr. Ransom advocated the voluntary notification of phthisis, that milk and flesh of cattle should be inspected by skilled officers, and that compulsory notification of ulceration in cows' udders should be insisted on.—The President, Dr. Handford, and Dr. P. Boobbyer also spoke on the subject.—Dr. Ransom showed pathological specimens from a young girl, aged 20 years. They were a soft growth in the body of the fourth dorsal vertebra and both ovaries of the size of oranges covered with nodular growths of the size of small beans (the growth was a round-celled sarcoma).

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.—The fifth meeting of the session was held on Feb. 11th, Mr. H. E. Clark, the President, being in the chair.—Dr. Charles Workman showed: (1) A Brain the seat of extensive Tuberculous Disease and Hydrocephalus; (2) three Brains with Tumour Formation, with Microscopical Section of the same; (3) a Heart with Double Mitral Orifice and Valves; (4) a Heart showing Enormous Dilatation and Hypertrophy; (5) an Aneurysm of the Arch of the Aorta with Hypertrophy of the Left Ventricle; and (6) a Heart showing Hypertrophy of the Left Ventricle with Aneurysm of the Wall due to Fibrous Transformation.—Dr. Walter K. Hunter showed Microscopical Preparations of the Blood from a case of Splenic Leukæmia.—Dr. T. K. Monro showed: (1) A boy, aged 12 years, presenting Atrophy of the Right Testicle following Rheumatic Orchitis; and (2) a woman, aged 26 years, with Loss of Stereognostic Sense in the Right Hand (senses of touch, pain, and temperature preserved).—Dr. H. Rutherford showed: (1) A Rectal Dermoid removed by the Para-sacral Route; (2) Double Coxa Vara in a Child, aged seven years; (3) Congenital Dislocation of the Hip (to contrast with the preceding case); (4) Microscopical Sections of a Wood's Painful Subcutaneous Tumour; and (5) a Skiagram of a case of Vertical Dislocation of the Patella without rupture of the quadriceps or ligament treated by open operation.—Dr. David Knox showed: (1) A girl, aged 18 years, with Hypertrophy of the Right Mamma; and (2) a specimen of Round-celled Sarcoma involving both Hemispheres of the Brain.—Dr. Hugh Maclaren showed: (1) A specimen exhibiting an Abnormal Situation of the Vermiform Appendix; and (2) specimen of Embolism of the Femoral Artery, Thrombosis of the Femoral Veins, and Embolism of the Pulmonary Artery which had caused death.

IPSWICH CLINICAL SOCIETY.—A meeting of this society was held on Feb. 14th, Mr. James Hossack being in the chair.—Dr. H. H. Brown read a very interesting paper upon Gastric Ulcer and its Complications. He also spoke with reference to several cases which he had met with in private practice, showing at the same time a specimen of a stomach with a perforating ulcer of that viscus and duodenum also.—A discussion then followed, Mr. J. F. C. Hossack, Dr. W. W. Sinclair, Mr. Staddon, Mr. C. G. Mosely, Mr. A. Y. Pringle, Dr. W. A. Gibb, and Dr. Ward joining in, and Dr. Brown replied.—Dr. Ward showed two specimens. The first was a Brain from a chlorotic girl showing cerebral thrombosis. The patient, a young girl, suddenly became aphasic and drowsy, and rapidly becoming comatose died very shortly without regaining consciousness. She had

been suffering from anæmia. There was no history of syphilis or tubercle. The second specimen was a portion of the Femoral Artery of a boy with a rent three-eighths of an inch long in it. The history was as follows. The boy was admitted into hospital suffering from a false aneurysm of the thigh; a month previously he had been shot in the thigh with a pocket pistol which he had been carrying in his pocket. The bullet was still *in situ*, and was found with the x rays. On cutting down this condition of the femoral artery was discovered. He had been sent in on account of recurrent hæmorrhage.

CARDIFF MEDICAL SOCIETY.—A conjoint meeting of this society and the Biological Section of the Cardiff Naturalists' Society was held at University College, Cardiff, on Feb. 8th, Dr. E. Walford and Mr. T. H. Thomas, the respective Presidents, presiding.—Dr. D. R. Paterson read a paper and illustrated it with lantern slides on the Life-history of the Malarial Parasite. The experimental methods which led to the identification of the parasite were described and illustrated and its life-history and the various methods of its reproduction were fully gone into. Finally, the manner of recognition of the particular variety of mosquito which harboured the parasite was indicated.—Professor W. Newton Parker read a paper on Parental Care in the Lower Vertebrata. He gave an account of a number of instances amongst fish and amphibians in which sundry methods had been adopted for the protection of the eggs and the young. Various forms of nests were described, including those of several species of hyla and of rhacophorus schlegeli, and also numerous contrivances for the protection, nutrition, and respiration of the larvæ both within and without the body of the parent. The paper was illustrated by lantern slides.—Numerous specimens of biological and physiological interest were exhibited in the physiological laboratory at the conclusion of the papers by Professor A. F. Dixon, Dr. Swale Vincent, and others.

ÆSCULAPIAN SOCIETY OF LONDON.—A meeting of this society was held on Feb. 22nd, Mr. W. C. Worley, the President, being in the chair.—Mr. F. Hewitt Oliver showed (1) a very advanced Development of Molluscum Fibrosum in a man, aged 45 years, whose growths had existed from infancy. The distribution was general but most thickly on the abdomen. 2. An Infant with Genu Retrorsum whose Patellæ were Impalpable. Passive flexion a month ago was much limited and hyperextension of the leg existed. Now, without treatment, complete passive flexion was easy and hyper-extension of the leg was checked.—Dr. J. S. Risien Russell read a paper on the Modern Treatment of Idiopathic Epilepsy, emphasising the importance of an accurate diagnosis. To this end he advised the routine use of an analysis of the urine and an examination of the fundus oculi. He reviewed a large number of drugs that were advocated by various writers and, giving some praise to digitalis, belladonna, and borax, he thought bromide of potassium the most useful of all, especially when given with discrimination as to dose and time of the administration of the dose. Yet the patient, as a whole, must be given consideration and all defects remediable cured.

SOUTHPORT MEDICAL SOCIETY.—A meeting of this society was held on Feb. 13th, Dr. R. Harris being in the chair.—Dr. W. Permewan (Liverpool) showed a patient from whom he had recently removed a Papilloma of the Left Vocal Cord and made some observations on the best method of removal of these growths.—A case of Temporary Facial Paralysis following mastoid operation was also shown, which was followed by a discussion.—Mr. Reinhardt Anderson showed a boy on whom he had operated for Hydatid Cyst of the Liver and also a specimen of Cancer of the Mediastinum Infiltrating the Lung.

INCORPORATED SOCIETY OF TRAINED MASSEUSES.—The annual meeting of this society was held on Feb. 15th. The reports from the sub-committees showed a steady progress in the work of the society since its incorporation last July. The council aim at a high standard of efficiency for members of the profession and they only grant their certificate to those who have satisfied the examiners in their practical and theoretical work. Certificate-holders are not members unless nominated and elected by the council, and to the members further opportunities are offered of continuing their studies by special lectures in anatomy and other subjects. The honorary secretary is Miss L. Grant, 12, Buckingham-street, Strand.

Reviews and Notices of Books.

The Essentials of Regional Anatomy. By RICHARD J. A. BERRY, M.D., F.R.C.S. Edin., F.R.S.E., Lecturer on Anatomy in the New School of Medicine of the Royal Colleges, Edinburgh; Examiner in Anatomy to the University of St. Andrews, and to the Royal College of Surgeons, Edinburgh. Edinburgh and London: William Green and Sons. 1900. 8vo. Pp. 484.

THE author's intention in preparing this volume has been to provide for the medical student a work on human anatomy in which there shall be no facts with which he need not concern himself. Dr. Berry considers that at the present day the student of medicine is overworked and that his curriculum is made unnecessarily severe in some respects, especially in the study of physiology, and under these circumstances the author thinks that there is a risk of anatomy not receiving the attention it deserves as the real basis of medicine and surgery. We go far with Dr. Berry in the opinion that medical students frequently have to devote much time to studies which are of but little ultimate value, and we therefore sympathise with this attempt to assist the student, to whom the present work will be of value in presenting an accurate but somewhat brief account of the anatomy of the human body. There are no illustrations, but the book is interleaved with blank paper, on which the author hopes that the student will draw sketches of his dissections or will reproduce the diagrams drawn for him on the blackboard. We are afraid that in this Dr. Berry will be disappointed.

Although there may be differences of opinion as to the need for this work, there must be unanimity as to the excellent way in which the book has been prepared. We think, however, that the author would do well to add some diagrams. If judiciously chosen they would serve to increase distinctly the value of the book.

Syphilis of Children in Every-day Practice. By GEORGE CARPENTER, M.D. Lond. London: Baillière, Tindall, and Cox. 1901. Medical Monograph Series. Illustrated. Pp. 110. Price 3*s.* 6*d.*

THIS monograph on the subject of syphilis in children is only concerned with the congenital variety. With regard to the severity of the symptoms and the frequency of its incidence the author considers that the improvement which is manifest in these respects within recent times is due partly to attenuation of the virus and partly to the relative immunity of the subject. The manifestations of the disease are grouped systematically according to the various organs and tissues affected, commencing with the lesions of the skin, mucous membrane, and teeth, and proceeding to those of the lungs, liver, spleen, and bones. The important association of rickets and syphilis is fully discussed and the part which each plays in the production of Parrot's nodes is reviewed from the pathological standpoint. The author evidently inclines to the belief that a syphilitic process is mainly if not exclusively responsible for this aberrant development of bone. According to the author Parrot's nodes are present only to the extent of one per 1000 in cases of rickets apparently uncomplicated by syphilis. The question naturally arises, What is the distinction between the familiar bossing of the frontal and parietal bones in rachitic children and true Parrot's nodes? The conclusion is obvious, that either syphilis is extraordinarily rife among all classes or that Parrot's nodes are separate and distinct, both etiologically and pathologically, from ordinary slight degrees of bossing. With regard to treatment Dr. Carpenter insists on the

exhibition of mercury for at least one year and attaches but little importance to the influence of this drug on the subsequent development of the teeth. He regards mercury as an energetic producer of red blood corpuscles. Apart from mercury and the iodides treatment is summarily dismissed. The maintenance of nutrition in syphilitic infants, a matter of such practical difficulty, is summed up in the following sentence: "If the mother cannot nurse, and a wet nurse is out of the question, a suitable milk diet must be substituted." There is no new or original feature in any section of this little volume. On the other hand, nothing, except certain matters of treatment, of clinical importance is omitted. The illustrations are excellent and are freely distributed throughout the text.

Difficult Labour: A Guide to its Management for Students and Practitioners. By G. ERNEST HERMAN, M.B., F.R.C.P. Lond. New and revised edition. With 165 Illustrations. London: Cassell and Co. 1901. Crown 8vo. Pp. 470. Price 12*s.* 6*d.*

SINCE the publication of the first edition in 1894 Dr. Herman's book has been issued three times as a reprint and once in a revised form. The appearance of this new and revised edition is to be welcomed. It bears ample proof of careful revision without any marked increase in its size. Three new illustrations have been added, including one of spondylizema and two of central rupture of the perineum. Amongst the sections that have been modified or added to we notice those upon General Enlargement of the Child, Morbid Enlargements of the Fœtal Body, Mechanism of Labour with the After-coming Head, Can Post-partum Hæmorrhage be Prevented? and the Mechanism of Labour in Kyphotic Pelves. The most important alterations are in the chapters upon Symphysiotomy and Cæsarean Section. Writing in 1894 Dr. Herman hesitated to recommend symphysiotomy. Now he is apparently convinced that there is sufficient evidence to show that no detrimental after-effects follow the operation, and he advises its employment in certain suitable cases. He recommends the subcutaneous method and describes the operation as he performs it. In this description we think the author hardly enters sufficiently into detail. He says, for instance, "Press the point of the knife through the mucous membrane opposite the middle of the symphysis pubis." As there is no mucous membrane anterior to the frenulum clitoridis, he means, no doubt, the skin. A student without any previous knowledge reading this might well be misled. In the chapter on Cæsarean Section it is recommended when it is desired to render the patient sterile that the body of the uterus should be removed, on the grounds that the patient will be free from child-bearing and from menstruation, and because recovery after this operation is as easy as when the uterine wound has been sewn up. This is a matter upon which a considerable difference of opinion would no doubt exist amongst obstetricians.

This work has already met with considerable success and we can confidently recommend the new edition.

Normal Histology. By EDWARD K. DUNHAM, Ph.B., M.D., Professor of General Pathology, Bacteriology, and Hygiene in the University and Bellevue Hospital Medical College, New York. Second edition. London: Rebman, Limited. 1900. Pp. 318. 244 Engravings. Price 12*s.* net.

THIS work is intended primarily for the medical student, and is planned with due consideration to the facts that histology must be taught under conditions which require economy of time, and that it must have a place at the beginning of the medical curriculum when the students' technical facility is least developed. It is therefore concise in its descriptions and the histological methods given are selected for their simplicity and usefulness. Throughout the work stress is laid on the relations existing between structure and function and consequently at times the author trenches on the ground of physiology; for this most teachers of medical students will consider that no justification is needed. The book is not intended as a laboratory handbook, but it is recognised that histology must be taught in the laboratory and that a course of demonstrations and practical work are required to complete what is taught in the text.

After a short introduction there is a clear description of the cell and of the phenomena of karyokinesis, followed by chapters on the elementary tissues. In each case the general characters of the tissues are given categorically and then variations in these characters with the resulting variation in the character of the tissues are discussed. The different appearances in sections due to changes in the plane of section are carefully pointed out. Tissues of special function and the histology of the various organs are then treated. There is a very concise but clear description of the histological elements of blood and lymph. The reproductive organs and the central nervous system with the organs of special sense are described at some length. Throughout attention is paid to those points likely to be of importance to the medical student. The illustrations, which are derived from various sources, are numerous and well reproduced; those illustrating the nervous system are chiefly from Cajal. Part II., on Histological Technique, occupies 40 pages, and bearing in mind the object of the book the processes are well selected and very well described. The author has not always the courage of his convictions, as a page is occupied by Golgi's method, though it is admitted to be too difficult and the details necessary for carrying it out are omitted.

The book should serve the purpose for which it was written, but it will not replace the manuals at present used by English students.

Manual of Personal Hygiene. Edited by WALTER L. PYLE, A.M., M.D. Illustrated. London and Philadelphia: W. B. Saunders and Co. 1900. Pp. 338. Price 6*s.*

THERE are already indications that the advances in sanitary science and public health which have marked the second half of the past century are to be succeeded by an era of reform in matters which relate to personal hygiene. The manual under review is one of the outward and visible signs of this movement, it is the united production of a "combine" of American specialists in the various branches of this comparatively new science. Dr. C. G. Stockton contributes the section on Digestion and shows how violation of the rudimentary laws of physiology as applicable to food and dietetics may be responsible for general ill-health; the care of the teeth constitutes an important factor in the maintenance of a normal standard of nutrition. Dr. G. H. Fox in the next chapter treats of the Hygiene of the Skin and is followed by Dr. Ingals on the Voice and Respiration. This chapter includes the important subjects of adenoids, deformities of the chest, and spinal curvatures, the causes which lead to these conditions, and the mode of prevention. The Hygiene of the Ear, another important factor in the intellectual development of children, is adequately dealt with by Dr. B. A. Randall, while Dr. Pyle himself devotes a long chapter to the subject of the Eye, its Uses and Abuses, emphasising the dangers of certain kindergarten methods which entail constant examination of small objects at near focus. The general aspects of school hygiene are included in this chapter and deserve close attention from practitioners in this country, where "child-culture" is still regarded rather as a fad than as a serious branch of preventive medicine. The Hygiene of the Brain and Nervous System is undertaken by Dr. J. W. Courtney and the section covers ground of equal

importance since it embraces the subjects of nerve strain and nerve rest. The final chapter is written by Dr. G. N. Stewart and is devoted to the subject of Physical Exercise.

Perhaps in no country in the world has the neglect of the laws of personal hygiene produced more disastrous consequences than in the United States, where keen competition and the unhealthy conditions of urban segregation have reached a dangerous degree of development. Neurasthenia and other forms of nerve degeneration, due to what Dr. Courtney inelegantly calls "*worriment*," are familiar conditions in the United States, and hence specialists in these and allied subjects have a wide field for their investigations. We in this country should be grateful for the comprehensive manner in which experience thus gained has been systematised in Pyle's Manual of Personal Hygiene.

Éléments d'Anatomie Gynécologique. By PAUL PETIT. With a Preface by Professor PIERRE SEBILEAU. With 32 original Plates. Paris: Carré et Naud. 1901. 8vo, pp. 222. Price 16 francs.

THIS book is the outcome of work done by M. Paul Petit in the laboratory of Professor Pierre Sebileau. The anatomy of the pelvis and the organs it contains is often but imperfectly dealt with even in the best text-books, and the anatomical details required by an operating gynæcologist can only be adequately supplied by one who is himself accustomed to see and to practise such operations. The present book is intended to give not only a complete account of the pelvic viscera, but more particularly a description of the other important structures in the pelvis—namely, the muscles, fasciæ, vascular sheaths, cellular tissue, and the important lines of cleavage of the fibrous tissues. The work is divided into four parts. The first deals with the superficial and deep anatomy of the external genitalia and the perineum; the second with the pelvic region proper, including the pelvic viscera; the third with the antero-lateral portion of the abdominal wall; and the fourth with the iliac fossa. M. Petit's previous publications show that he has studied these regions with much care and detail, and the results which he records in the present work are of corresponding value. A great deal of space is devoted to descriptions of the fasciæ of the pelvis, both superficial and deep, and more especially to the relation of the fasciæ and cellular tissues of the viscera. The vascular pedicles of the uterus, vagina, bladder, and rectum are given in detail, and their importance in relation to the various operations practised for removal of the uterus is pointed out. Amongst other important sections we may call attention to those dealing with the sac of the dartos, the gland of Bartholin, the perineum, the cavum Retzii, the round ligament, and the anatomy of Alexander's operation and the operation of cystopexy. The section of the book of most value is perhaps that devoted to a description of the "vessel sheath" of Farabeuf, and its relations to pelvic cellulitis and other inflammatory conditions occurring in the pelvis. The author points out how inadequate the term "parametritis" is to describe the various forms of inflammation of the pelvic cellular tissue, and holds that the word "cellulitis" should be used qualified by the name of the particular region affected. In this he is in accord with most modern writers upon gynæcology, amongst whom the terms "parametritis" and "perimetritis," are rightly falling into disuse. A large number of full-page plates illustrative of the various dissections made are given. They are on the whole clear and well reproduced. We wish, however, that the author had stated rather more fully the position of the pelvis in the various descriptions. Owing to the want in many cases of a clear indication as to what direction any particular dissection is regarded from, the details are often hard to grasp.

The work, as a whole, is a valuable contribution to the anatomy of the pelvic region and does credit to its author.

LIBRARY TABLE.

Dental Anatomy Note Book. For use in conjunction with Tomes's "Dental Anatomy," the South Kensington Museum, and personal instruction. By DOUGLAS GABELL, M.R.C.S. Eng., L.R.C.P. Lond., L.D.S. R.C.S. Eng., Assistant Surgeon at the Dental Hospital of London. Second edition. London: Claudius Ash and Sons, Limited. 1900. Price 3*s.* 6*d.* net.—That this little book should have so quickly reached a second edition is sufficient proof of its value to the dental student. Aid books to different subjects are, as a rule, to be condemned, the student utilising them simply for the purposes of cramming. Mr. Gabell's note-book does not come under this category, and of its kind it is unique. It does not aim at taking the place of larger books on the subject, but directs the student's attention to what he should learn and also gives him some idea of how to learn it. The subject is clearly and neatly arranged, ample room being left for the student to make his own supplementary notes. A point that strikes us in reading the notebook is that in places it is too scanty in its information and help.

Life in an Open-air Sanatorium. By CHARLES REINHARDT, L.S.A., M.D. Brux. Illustrated. London: John Bale, Sons, and Danielsson, Limited. 1900. Pp. 104. Price 1*s.*—This little brochure on the open-air treatment is evidently intended for the instruction of the public. The medical profession may, however, find the information which it affords regarding our home sanatoria of practical use if in doubt as to the choice of a suitable institution for a phthisical patient. Dr. Reinhardt is strongly in favour of British as opposed to foreign sanatoria, since the latter have recently shown a tendency to degenerate into mere commercial speculations on the lines of hotels rather than to order themselves as places for the treatment of the sick. He strongly urges the necessity for early treatment, and where circumstances allow suggests a stay of at least four or five months in the establishment.

The Story of Thought and Feeling. By FREDERICK RYLAND, M.A. The Library of Useful Stories. London: George Newnes, Limited. 1900. Pp. 212. Price 1*s.*—The study of psychology may be regarded as a luxury rather than as an essential element in an ordinary medical education; like the study of other branches of speculative philosophy it may involve the every-day problems of medical practice in profitless and unnecessary consideration. "The Story of Thought and Feeling" will serve as an excellent introduction to the study of mental processes for those who wish to pursue the subject, and it is written, so far as the scientific nature of the question allows, in simple and untechnical language. Any reader who can devote a few hours to the perusal of 200 small pages will find himself equipped with a very fair understanding of the meaning of consciousness, perception, thought, and language, as well as of those other mental processes which are included in the science of psychology.

The Temples and Ritual of Asklepios. By RICHARD CATON, M.D. Edin., F.R.C.P. Lond. With 34 Illustrations. Second Edition. London: C. J. Clay and Sons. 1900. Pp. 46. Price 3*s.*—Although we are more familiar with Dr. Caton as an original investigator in the fields of physiological research many of us will read with interest the first-fruits of his labours as an archæologist. From a careful study of the remains of the temples of Asklepios, and notably those at Epidaurus and Athens, Dr. Caton has been enabled to make certain suggestive speculations as to the uses and objects of some of the buildings which are more or less constant features of such temples of health. For instance, the suggestion that the Thalos was the place where the sacred serpents were housed, fed, and venerated seems to be supported by a certain amount of

collateral and direct evidence, and that certain other extensive quadrangles were of the nature of hostels for the accommodation of patients appears a natural and common-sense assumption. The ritual and mysticism attendant on the worship of Asklepios will probably ever remain in obscurity, but Dr. Caton has at least made an attempt to present us with an intelligible picture of the healing art as practised some four or five hundred years before the birth of Christ at the Greek temples of health. The contents of this little book were originally presented to the public in the form of lectures at the Royal Institution, on which occasions Dr. Caton's researches were more profusely illustrated than has been found possible in the present book form. Nevertheless, the photographs and drawings which it has been possible to reproduce are full of interest and sufficiently illustrative of the points which the author chiefly emphasises in the text.

La Rage. Par le Dr. AUGUSTE MARIE, avec une Préface de M. le Dr. E. ROUX. Paris: Masson et Cie. (*Rabies.* By Dr. AUGUSTE MARIE, with a Preface by Dr. E. ROUX.) Pp. 180. Price 2 francs 50 centimes.—This little volume forms one of the series entitled "Encyclopédie Scientifique des Aide-Mémoire," and is written by two experts in the subject, for Dr. Marie is director of the Anti-rabic Institute of Constantinople and Dr. Roux is the sub-director of the Pasteur Institute. The preface of Dr. Roux deals with the subject of rabies before and after the time of Pasteur and concludes by giving a description of Pasteur's well known method of prophylaxis. Possibly, says Dr. Roux, we shall one day be able to cure rabies; at present we can only prevent it. Dr. Marie gives a short historical summary of the knowledge of the disease, and in his first chapter deals with the malady as exhibited under different forms in different animals. A chapter follows on the pathological anatomy of rabies, and next is given a description of the virus, together with an account of Pasteur's researches in diminishing or exalting the powers of the poison. A chapter on epidemiology follows and then comes the all-important subject of prophylaxis from a sanitary point of view. Muzzling orders together with the destruction of ownerless or wandering dogs are the most hopeful measures, and where these are strictly enforced rabies practically disappears. The next chapter is taken up by a description of Pasteur's method of immunisation and of variations on this method practised by other observers. The book concludes with statistics from the various anti-rabic institutes, the figures of which go to show the prime importance of commencing treatment as soon as possible after the bite. Treatment of the disease when once declared can only be palliative. This little book is a useful summary of our knowledge, so far as it goes at present, of this terrible complaint.

First Aid to the Injured and Sick. By F. J. WARWICK, M.B. Cantab., M.R.C.S. Eng., and A. C. TUNSTALL, M.D., F.R.C.S. Edin. Bristol: John Wright and Co. London: Simpkin. 1901. Pp. 242. Price 2*s.* 6*d.*—This is one of the very many books published on first aid. The authors are both Volunteer Medical Staff officers and know their subject. The book is simply written, though we should say that there was rather too much anatomy and physiology in the first part for unprofessional readers. But the practical part is good. In the section upon Shock by Electricity we think that there are one or two points which should be made clearer. Thus we find, "The danger of a current is in proportion to its intensity." This is not strictly true, for the quantity of current also has to be taken into consideration. A small Leyden jar will give a current of very high intensity, but its output is so small that the effects are not dangerous. Again, we find directions given for releasing a sufferer from a "live" wire, which are good as far as they go, but no mention is made of the advisability of the rescuer "unearthing" himself by standing on an india-rubber mat or a pile of dry woollen rugs or something similar. In many cases the most easily procured india-rubber articles are tobacco pouches.

(1) *Science in the Daily Meal.* Pp. 45. Price 6*d.* (2) *Fruits, Nuts, and Vegetables.* Pp. 102. Price 6*d.* By ALBERT BROADBENT, F.R.H.S. Manchester: Albert Broadbent. 1900.—These two little books are apparently written by a vegetarian and we think we detect a flavour of homœopathy as well. But the foible and the heresy apart, they contain some excellent recipes for simple dishes and valuable hints as to cookery. Vegetables are far too little used in this country as food stuffs served apart from meats, and salads of cooked vegetables allowed to get cold are almost unknown. Yet, especially in the summer, a vegetable, fish, and fruit dinner is always acceptable. On page 32 of No. 2 we find the following remarkable statement concerning barley: "Its value is well known as a drink in the form of barley water, or 'barley bree,' as it is called in Scotland." We never before understood the inner meaning of the old Scots song, "Willie brewed a peck o' maut." The three blithe companions, it will be remembered, sang,

> "We are na fou, we're no that fou,
> But just a drappie in our e'e;
> The cock may craw, the daylight daw,
> But we will taste the barley bree."

There is no reason why the drinking of barley water should make anyone "fou," but somehow barley water goes oddly with the assertion—

> "Who last beside his chair shall fa'
> Shall be the king amang us three."

JOURNALS AND MAGAZINES.

The Journal of Anatomy and Physiology, Normal and Pathological. Conducted by Sir WILLIAM TURNER, F.R.S., D. J. CUNNINGHAM, F.R.S., G. S. HUNTINGTON, M.D., A. MACALISTER, F.R.S., and J. G. M'KENDRICK, F.R.S. Vol. xxxv., Part 2. January, 1901. London: Charles Griffin and Co. Price 6*s.*—The articles contained in this number are: 1. By Dr. Peter Thompson: On the Arrangement of the Fasciæ of the Pelvis and their Relationship to the Levator Ani. With five plates. 2. By Dr. William Brodie Brodie: On the Destruction of Leucocytes, in which the author describes phagocytes which are produced in lymphatic glands and have for their function the destruction of leucocytes. A plate is appended to the article showing the appearances observed. 3. By Dr. Charles Powell White: A Differential Stain for Muscular and Fibrous Tissues. A useful means of distinguishing between these tissues. 4. By Professor W. H. Thompson of Belfast: Degenerations Resulting from Lesions of the Cortex of the Temporal Lobe. Monkeys and marmosets were exclusively employed in Professor Thompson's experiments. The degenerations, which are numerous, are carefully described and are illustrated by a plate and by drawings in the text. 5. By Professor Christopher Addison: On the Topographical Anatomy of the Abdominal Viscera in Man, especially the Gastro-intestinal Canal. This is the third part of a long memoir and is illustrated by five plates. Careful measurements are given of the different organs. 6. By Dr. Otto Thilo of Riga: Stop or Click Mechanism in the Animal Kingdom, with two plates. The author adduces various examples in which muscular effort is saved by mechanical contrivances, citing especially and giving drawings of such mechanism in the dorsal fin of the stickleback and other fish. A very ingeniously written paper. He shows that the principle is adopted in the construction of the Yale lock. 7. By Dr. J. O. Wakelin Barratt of the West Riding Asylum, Wakefield: Observations on the Structure of the Third, Fourth, and Sixth

Cranial Nerves. This article, though short, is a valuable one and represents an amazing amount of careful work. The above-named nerves were dissected out along their whole course and after being hardened were sectioned along their entire length. 8. By Dr. Walter H. Gaskell, F.R.S.: On the Origin of Vertebrates deduced from the Study of Ammocœtes. This article constitutes the ninth part of a long argument on a theory advanced by Dr. Gaskell in regard to the phylogeny of the Vertebrata contained in previous numbers of the Journal and is occupied with a discussion on the probable mode of origin of the vertebrate eye. 9. The last article contains the proceedings of the Anatomical Society of Great Britain and Ireland.

New Inventions.

A SYRINGE FOR THE NOSE AND EAR.

THE accompanying illustration shows a syringe for cleansing the nose and ear, the scale on which it is drawn being two-thirds of the natural size. The instrument is simple in construction and cannot well get out of order. The glass nozzles are replaceable and can be easily kept clean and

sterilised. The indiarubber bag may be washed out with strong antiseptic solution when necessary and a few minutes' boiling does not seem to damage it. The cost is such as to bring it within the reach of hospital patients. The syringe is made by Messrs. Allen and Hanburys from my suggestion.

W. H. KELSON, F.R.C.S. Eng.

NEW OVARIOTOMY TROCAR TUBE.

WHEN tapping an ovarian cyst the difficulty of getting the fluid to travel down the exit tube attached to the trocar has been experienced by many operators. The one depicted in the illustration below has been designed to meet this

difficulty. When the cyst has been tapped and the contents will not flow a jug of water poured into the funnel-shaped opening at the side of the rubber tube will create a vacuum and the fluid from the cyst should at once begin to run; if it does not the rubber air-ball should be compressed, when the contents of the cyst, if fluid or gelatinous, should certainly find exit. The makers are Messrs. Arnold and Sons of Smithfield, London, E.C.

Cheltenham. ALEXANDER DUKE.

AN INTERESTING LIST.

THE following is a list of the Fellows of the Royal College of Physicians of London and a few (old) Licentiates or Members who held appointments to Her late Majesty Queen Victoria as physicians:—

1837.—Sir Henry Halford, Bart., physician to the Queen; Sir James M'Grigor, Bart., Sir Henry Holland, Bart., and Dr. Richard Bright, physicians extraordinary; Sir James Clark, physician to the Queen and to the Queen's household (*Licentiate*); and Dr. Neil Arnott, physician extraordinary (*Licentiate*).
1838.—Dr. Peter Mere Latham, physician extraordinary; and Dr. William Frederic Chambers, physician to the Queen and to the Queen Dowager.
1842.—Dr. John Forbes, physician to the Queen's household (*Licentiate*).
1846.—Sir Charles Locock, Bart., physician accoucheur.
1847.—Dr. Robert Ferguson, physician accoucheur.
1859.—Sir Thomas Watson, Bart., physician-in-ordinary; and Dr. William Baly, physician extraordinary.
1861.—Dr. Francis Hawkins, physician to the Queen's household; and Sir William Jenner, Bart., physician-in-ordinary.
1866.—Sir Thomas Galbraith Logan, honorary physician.
1868.—Sir Alexander Armstrong, honorary surgeon.
1870.—Dr. Alexander Nisbet (*Member*) and Dr. Benjamin Proctor Rooke (*Member*), honorary physicians.
1871.—Sir George Burrows, physician-in-ordinary; and Dr. Wilson Fox, physician extraordinary.
1873.—Sir William Gull, Bart., physician extraordinary.
1874.—Sir Edward Sieveking, physician-in-ordinary; and Sir Joseph Fayrer, Bart., honorary physician.
1875.—Dr. Charles J. B. Williams, physician extraordinary.
1876.—Sir James Alderson and Dr. Arthur Farre, physicians extraordinary.
1879.—Sir J. Russell Reynolds, physician to the Queen's household.
1881.—Sir William Richard Edwin Smart, honorary physician (*Member*).
1883.—Dr. George Owen Rees, physician extraordinary.
1889.—Dr. Thomas Graham Balfour, honorary physician.
1890.—Sir George Johnson, physician extraordinary; and Sir R. Douglas-Powell, Bart., and Sir James Reid, Bart., physicians-in-ordinary.
1891.—Sir Richard Quain, Bart., and Sir Alfred Garrod, physicians extraordinary.
1892.—Dr. Thomas Edmonston Charles, honorary physician.
1897.—Sir Samuel Wilks, Bart., physician extraordinary.
1898.—Sir Thomas Barlow, Bart., physician to the Queen's household.
1899.—Dr. James Edward Pollock and Sir William H. Broadbent, physicians extraordinary.
1900.—Dr. Alexander Bradshaw (*Member*), honorary physician, and Sir Thomas Barlow, Bart., physician extraordinary and physician to the Queen's household.

BRISTOL HEALTH COMMITTEE.—At a meeting of the Bristol Health Committee held on Feb. 19th it was reported that the expenditure for the health department, infectious hospitals, and port sanitary authority for the past six months amounted to £11,469. This exceeded by nearly £2000 the estimated expenditure.

BATH SOUTHERN DISPENSARY.—The annual meeting of the subscribers of this institution was held on Feb. 12th under the presidency of the mayor. The medical report stated that 649 patients had been attended during the year, and of these 267 were visited at their own homes. The financial statement showed a satisfactory balance.

THE LANCET.

LONDON: SATURDAY, MARCH 2, 1901.

Crime and Punishment.

IN the February number of the *Nineteenth Century* Dr. ROBERT ANDERSON, the Assistant Commissioner of Police of the Metropolis, discusses the national penal system under the uncomplimentary title, "Our Absurd System of Punishing Crime." Anything written on the subject of crime or criminals by a public official of such ripe experience cannot fail to be of interest to the community. Upon certain statistics of metropolitan crime—statistics which we are bound at the outset to say we do not accept as being in themselves conclusive—Dr. ANDERSON satisfies himself that it is a fact, and a fact of which every expert is aware, "that while crime generally is diminishing *professional* crime is on the increase." He goes on to say that this development of the professional criminal is becoming a serious public danger. Dr. ANDERSON addresses himself to the task of averting this danger, and his thesis is that "while crime in general is an ineffaceable blot upon our civilisation, professional crime is preventable and might be suppressed." He divides professional criminals, essentially burglars, housebreakers, and shopbreakers, into two classes: those who are so utterly weak or so hopelessly wicked that they cannot abstain from crime, and those who pursue a career of crime deliberately, with full appreciation of its risks. We cannot say that we regard this classification as being either definite or practical, for it is difficult to know what value to put upon the terms "weak" and "wicked" in this relation, while, we take it, few burglars proceed to work without a full appreciation of the risk they are running. However, let us try to follow Dr. ANDERSON in his way of working out a problem that is by no means easy.

Our methods of dealing with the weak and wicked are, he says, unintelligent and harsh. Our methods in the case of professional criminals, those who are criminals by deliberate choice, he looks upon as being indefensible and equally unintelligent. It is more especially to this class of professional criminals that Dr. ANDERSON is anxious to direct attention. After dealing with some of the moral aspects of crime, and after brushing aside the part played by humanity-mongers in the matter, he recites some individual instances of ineffectual sentences passed on habitual or professional criminals. He then gives it as his opinion that the serious increase of professional crime is due mainly to the fact that, owing to the decrease in ordinary crime, sentences are now so lenient that they have ceased to be a terror to the professional criminal. He goes on to say that "if an Act were passed fixing 12 months' imprisonment as a minimum sentence and consigning the worst sort of professional criminals to the gallows it would, I believe, though ill-advised, be better, and (I have no hesitation in adding) more humane than our present methods." In the end, Dr. ANDERSON advocates imprisonment for life in the case of habitual and professional criminals, and he bases his penal scheme upon the criminal's love of liberty. He says that "in setting themselves to punish crime our criminal courts are pursuing a wrong system, a system unworthy of the age, a system begotten of mediæval superstition and ignorance." Dr. ANDERSON is no doubt right when he insists upon a full and open inquiry into the prisoner's character and antecedents, an inquiry upon a more elaborate, formal, and dignified footing than the investigation which is now carried out by some judges. The result of this inquiry would determine whether the prisoner is "a citizen or an outlaw." Then, if he is an outlaw and if he belongs to the first, the weak or wicked, class, Dr. ANDERSON would have him "sent to an asylum prison where his life can be spent in useful labour with every reasonable alleviation of his lot." If, on the other hand, he belongs to the deliberate professional criminal type "let him be deprived of the liberty he abuses." Bearing in mind that only crimes against property are under consideration it is not unnatural that Dr. ANDERSON at this point introduces into his scheme the subject of the abolition of the market for stolen property. "Let the prisoner," he says, "be required to disclose what he has done with his booty, and if he refuses, or fails to satisfy the court that it is out of his power to do so, let there be but one sentence—imprisonment for life." We are by no means so sanguine as Dr. ANDERSON is that his suggestion, of which he thinks nine-tenths of the community will unreservedly approve, would, if carried into effect, succeed in preventing or suppressing professional crime. We do not think a judge and jury would be induced to consign a man to life imprisonment upon an issue that was not before the court, nor can we imagine a legislature having the temerity to authorise or to ask them to do so. Dr. ANDERSON, in urging imprisonment for life on an extended scale, takes shelter behind the eminent jurist Sir JAMES FITZJAMES STEPHEN, whose advocacy of an extension of the death penalty is given in the following quotations: "I would punish with death offences against property only upon great deliberation and when it was made to appear, by a formal public inquiry held after a conviction for an isolated offence, that the criminal really was an habitual, hardened, practically irreclaimable offender. ..... I suspect that a small number of executions ..... would do more to check crime than twenty times as many sentences of penal servitude." And again, "If society could make up its mind to the destruction of really bad offenders they might in a very few years be made as rare as wolves, and that probably at the expense of a smaller sacrifice of life than is caused by many a shipwreck or explosion." Dr. ANDERSON recognises that such a return to bygone methods is inadmissible and he is constrained to admit the futility of his own proposal. "For even," he says, "where the law authorises penal servitude for life the judges will not impose, and public opinion will not tolerate, such sentences for ordinary crimes against property. But my proposal assumes that we shall cease to regard the *punishment* of the offender as a matter of primary importance." Therefore, he

tells us, that radical changes in prison administration would be involved.

But is all this upheaval of our present system of penal legislation and administration necessary? We think not. As we have already said, we do not believe that the figures adduced by Dr. ANDERSON warrant him in arriving at the opinion he has formed as to the serious increase of professional crime. As shown in the Report of the Commissioner of Police of the Metropolis for 1899, the proportion of felonies has decreased in 20 years by fully one-half. In our opinion this decrease in felonies generally must be taken as affording satisfactory evidence that the influences at work, whatever they may be, are tending, both directly and indirectly, to bring about, and are bringing about, a decrease in the number of the more serious crimes against property and in the number of professional criminals by whom these crimes are committed. Mr. TROUP of the Home Office, the editor of the "Judicial Statistics" for 1898, makes some interesting remarks on this point. From a table dealing with the proportionate amount of crime to population he concludes that "crime would appear to have reached a maximum in the sixties, and from 1868 there is a steady decline in the total and a steady decline also in the two leading divisions, crimes against the person with violence and crimes against property without violence." Further on, and dealing with what is the very basis of Dr. ANDERSON'S argument, this authority speaks as follows: "There is good reason to believe that relatively to the number of crimes committed the number of persons committing crimes is smaller in 1898 than in the earlier years of the table. It has been pointed out that in recent years there has been a great reduction in the ordinary length of sentences; that offences which used to be punished by five or seven years' penal servitude are now often punished by a few months' imprisonment, with the result that an habitual criminal after a few months of incarceration is again set at liberty and allowed an opportunity of committing fresh depredations. This is not a question of the deterrent effect of the sentence—of whether long or short sentences have the greater efficacy. We have to do merely with the fact that if a considerable number of the crimes of habitual criminals which were formerly punished by penal servitude are now punished by short imprisonment the number of offences appearing in the statistics in the proportion to the number of persons engaged in committing them must necessarily be greater than formerly; or conversely, if the number of offences has decreased the number of offenders must have decreased in a still greater proportion." This decrease must be referable to the complicated machinery which, in recent years, has been continuously at work upon criminal and criminally-disposed persons in prison and out of prison—a machinery which has reference not merely to the effect produced by imprisonment, but to the results of early education and training in the lower grades of social life, to prisoners' aid societies, and to increased opportunities for obtaining work on release from prison, as well as to other influences brought to bear upon the individuals as well as upon the class. We think that it is one of the mistakes that Dr. ANDERSON has made in formulating his proposal that he has brought severity of sentence and reduction of professional crime into a too close and absolute contiguity as cause and effect. No doubt, of late years, public sentiment has been influenced by LOMBROSO and his disciples with their fertile imaginations and their attractive, if unpractical, theories on criminology, and *pari passu* mild sentences are given which appear to be out of proportion to the crimes. But so long as crime generally is decreasing steadily the public will not be persuaded that their system of dealing with it is either absurd or wrong, or that the machinery at work is ineffective, or that there is evidence to justify them in reverting to the more Draconian measures of bygone days.

Quackery and the Law in the United States.

MR. PURRINGTON of the New York Bar recently delivered a lecture before the Church Congress at Providence, Rhode Island, upon "Eddyism and the Law," attaching the name of Mrs. EDDY, the original promoter, to the fad known as Christian Science, in preference to using the usual designation of a rigmarole neither Christian nor scientific. Eddyism, although it has been responsible for more than one death in England, has not yet assumed, and does not seem likely to assume, the numerical importance which it has in the United States, so that the principal interest to the English medical practitioner in the lecture of Mr. PURRINGTON lies in his exposition of the laws generally prevailing in various American States under which endeavours have been made to control the irresponsible pretence of healing on the part of persons wholly unqualified by education and training. In the case of DENT *v.* Virginia (129 United States Reports, 114), to which he refers, the question for the decision of the Supreme Court was the validity of a statute of West Virginia requiring every person practising medicine in the State to obtain a certificate from the State Board of Health as to his possessing certain defined qualifications. It was objected on behalf of a practitioner not so qualified that this statute violated a constitutional principle governing all legislation in the United States to the effect that no individual State may deprive any person of life, liberty, or property without due process of law, but it was held that the State, in the exercise of its power to provide for the general welfare of its people, may exact from parties before they can practise medicine a degree of skill and learning in that profession upon which the community employing their services may confidently rely; and the statute of West Virginia was upheld. This statute, however, or statutes of similar tenour, will not always avail to prevent the dangers of Eddyism and similar crazes. It does not need the astuteness of a lawyer to see that to a charge of illegal practice of medicine a denial of *any* practice of medicine may be held a good answer. That the defence has been actually made, and made successfully, we find in an instance cited by Mr. PURRINGTON, in which it was said by the court that "Prayer for those suffering from disease, or words of encouragement, or teaching that disease will disappear and physical perfection be attained as a result of prayer, or that humanity will be brought into harmony with

God by right thinking and a fixed determination to look on the bright side of life, does not constitute the practice of medicine in the ordinary sense."

In another American case (SMITH v. LANE, 24 Hun. 632) a defendant set up in defence to an action by a masseur for his fees that the masseur was a medical practitioner, but that not being duly qualified as such he was not entitled to recover. The defendant lost his case, for the court naturally declined to regard the masseur as a medical practitioner, but awarded him the fees due to him as a masseur. The court also incidentally gave its opinion that statutes regulating "medical practice"—using that term without further qualification—were intended to forbid incompetent or unqualified persons from administering or applying medical agents or performing surgical operations, in order to prevent injury and loss of life resulting to those employing such persons. This dictum strengthens the position of the Christian Scientists, inasmuch as this sect makes no use of medical agents and expressly repudiates operative surgery. We find, however, from Mr. PURRINGTON that in one State, that of Nebraska, the statute relating to medical practice defines a medical practitioner as "anyone who shall operate on, or profess to heal or prescribe for, or otherwise treat, any physical or mental ailment of another." This definition of medical practice can clearly be made to work against Eddyism. Under it an Eddyite was held to have been rightly convicted of acting as a medical practitioner without having complied with prescribed conditions, the New York Supreme Court holding that "the object of the statute is to protect the afflicted from the pretensions of the ignorant and avaricious and its provisions are not limited to those who attempt to follow beaten paths and established usages."

It will be seen from the instances cited by Mr. PURRINGTON that the law regulating medical practice in America varies in form in different States, and cannot be described as certain in its results. It is interesting, however, to observe what has been attempted in a country whose legal system closely resembles our own even if it forces us to the conclusion that legislation against quackery must always be attended with the greatest difficulty. No country approves of legislation in defence of class interests, while day by day the difficulty of setting verbal boundaries to the limits of medicine becomes greater. Again, differences of opinion naturally exist as to those against whom legislation should be aimed, which would have to be settled before definition was attempted. For example, as far as we know, the elder of the Peculiar People does not practise for gain, and some may hold that only those who profess to heal for gain should be interfered with. Again, the old woman who prescribes simples for a cold in the head or who charms warts can hardly be said to be such a danger to the community as to be a fit subject for legal interference. There is, moreover, a strong feeling in Great Britain against anything which seems to interfere with liberty of thought and action. But with regard to this we may fairly point out that to legislate for the protection of the ignorant is recognised as the duty of the Government in other cases, even where the person protected would probably claim to be a free agent acting upon his own judgment and entering into a contract which primarily concerns himself. Only recently, for example, the business of usury has been placed under a stringent Act of Parliament. The business of those who trifle with the health and life of foolish people is at least as fit an object for State interference as that of those who lend money to foolish people at exorbitant rates of interest. That life and health are now trifled with, and this with impunity, is shown by the avoidable deaths which have taken place through Eddyism, through the ignorant fanaticism of the Peculiar People, and through quackery. We recently drew attention to a case where a herbalist attended a patient till she died from cancer, prescribing such mixtures for her use as his wife might dictate when in a hypnotic trance. Such mischievous mystics ought to be restrained by law.

It is difficult to quit the subject of Christian Science without referring to its amusing side. Mr. PURRINGTON tells us that Mrs. EDDY, although teaching that "there is no such thing as pain or disease and that she can restore decaying bones to a healthy condition," has had teeth taken out under the application of local anæsthetics by a dentist, whose name and address he gives. She now, it appears, wears false teeth made by the same gentleman. Mr. PURRINGTON also quotes the following delightful piece of etymology from her religious writings: "The word pantheism is composed of two words, Pan and Theism. Pan stands for a deity in mythology; theism for a belief concerning deity in theology." No wonder that she adds warningly, "The mythical deity may please the fancy, while pantheism suits not at all the Christian sense of religion." We wonder what the erudite Mrs. EDDY would find to say about a "Pan-Anglican Synod," or how she would define the functions of her mythical deity in a "Pantechnicon."

Rex v. Browning.

WE publish in another column a letter from Mr. GIDEON W. B. MARSH giving the history of this remarkable case. The defendant, CHARLES WILLIAM BROWNING, aged 35 years, was indicted at the County of London Sessions before Mr. MCCONNELL, K.C., chairman, for having made false statements with intent that they should be entered in the register of deaths contrary to the provisions of the Registration of Births and Deaths Act, 1874. It appears that the prisoner had been a medical student and in this way had become possessed of the requisite knowledge to skilfully make a counterfeit presentment of disease. The whole story is so interesting to medical men as to demand a little commentary.

On Jan. 14th, 1901, BROWNING called upon Mr. MARSH complaining of difficult micturition. He paid him another visit on Jan. 25th. Four days later Mr. MARSH was fetched to the prisoner's lodgings. He found the patient with a temperature of 103° F. saying that he had pains in the loins and constant headache. BROWNING also said that he was passing urine frequently and in small quantities. The urine was of the colour of porter, specific gravity 1025, and on microscopical examination showed hyaline and granular tube-casts. Mr. MARSH diagnosed the case as one of acute

nephritis. On Feb. 4th the albumin, which had been in considerable quantity, had materially increased. The man was collapsed and apparently in a rigor. The following day he was very drowsy and had convulsive movements in the limbs; altogether he was confined to bed for eight days. On Feb. 6th an individual called on Mr. MARSH and said, "At four o'clock my brother had a fit, in which he died," giving a description of uræmic convulsions. Mr. MARSH thereupon issued a certificate wherein "uræmia consequent upon acute nephritis" was given as the cause of death. The suspicions of the prisoner's landlady were aroused by the fact that the "brother" had not called in anyone at the death, that the body was locked up in the room, and that no one had been to lay it out. Mr. MARSH proceeded to the house to verify the death. On gaining admission to the presumed death-chamber he found a dummy corpse. The police were communicated with and eventually the prisoner was arrested, being himself patient and "brother." In a box in his room was found a policy on the Pearl Life Insurance Company for £200. BROWNING, whilst Mr. MARSH was attending him, had worn a heavy moustache. The "brother" was clean-shaven, and so completely had the operation changed his appearance that neither the medical man nor the landlady was aware of the deception that was being practised upon them. It was quite natural that there should have been a resemblance between the physiognomy of two brothers. The moustache was the differential object which masked their identity. We cannot help regretting that the law interfered with BROWNING'S disposal of the "corpse." We feel defrauded of the last chapter of the story. The difficulty in the way of effecting the burial, as a body, of some rolled-up blankets and a pair of boots was the only rational corroboration of the prisoner's statement that he obtained the certificate to convince his relatives that he was dead. He might have intended to abscond after he had obtained the death certificate and registered it, or he might have had designs upon the Pearl Life Insurance Company, though this impeachment he denied.

The story forms a remarkable instance of malingering, probably with a substratum of real disorder; of mistaken identity of the living; and of attempted pretence of death. It is not stated whether BROWNING'S temperature was taken in the mouth or the axilla. If in the latter we may imagine that he had taken measures to produce evidence of pyrexia, though he declared that he had not done so but was genuinely feverish. Natural illness which BROWNING said he suffered from may have accounted for the collapse. On the other hand, both it and the drowsiness may have been produced by toxic agents. It would be interesting to know whether any of the symptoms persist. The albumin in the urine was, according to the prisoner's statement, surreptitiously added, and the blood can obviously be accounted for in the same way. It is not so easy to account for the hyaline and granular tube-casts. Either the man was the actual subject of Bright's disease, the symptoms of which he had exaggerated even to feigning death therefrom, or else some urine from a nephritic patient had been substituted for his own and given to Mr. MARSH for analysis. We are of opinion that Mr. MARSH is blameless for having fallen into the trap laid for him. More, he is to be complimented for the dexterity with which he extricated himself from it. We entirely subscribe to his contention that it should be a legal duty not only to certify the cause of death but also to verify the fact of death.

Annotations.

"Ne quid nimis."

MEDICAL APPOINTMENTS TO THE KING.

THE King has appointed Lord Lister to be Sergeant-Surgeon-in-Ordinary to His Majesty and Sir William Mac Cormac, Bart., K.C.V.O., and Sir Thomas Smith, Bart., Honorary Sergeant-Surgeons to His Majesty. We are glad that His Majesty has decided not to allow these historic appointments to fall into desuetude. The following appointments have also been made. To be Honorary Physicians: Dr. D. McEwan, Inspector-General (retired); Sir James J. L. Donnet, K.C.B., Inspector-General of Hospitals and Fleets; Sir John Watt Reid, K.C.B., Director-General of the Medical Department of the Navy (retired); Dr. A. B. Messer, Inspector-General of Hospitals and Fleets (retired); Dr. H. C. Woods, M.V.O., Inspector-General of Hospitals and Fleets. To be Honorary Surgeons: Sir James Jenkins, K.C.B., Inspector-General of Hospitals and Fleets; Timotheus J. Haran, Inspector-General of Hospitals and Fleets; Sir James N. Dick, K.C.B., Director-General of Medical Department of the Navy (retired); Dr. William H. Lloyd, Inspector-General of Hospitals and Fleets; and Dr. Alfred G. Delmege, M.V.O., Deputy Inspector-General of Hospitals and Fleets.

THE DENTAL HOSPITAL OF LONDON.

IN March the new premises of this hospital in Leicester-square will be occupied. They have been constructed in thorough accordance with modern requirements. The old hospital has long proved to be utterly inadequate for the vastly increasing needs of the charity, and the ample accommodation provided, together with the modern equipments, will be accordingly appreciated. Probably if the freehold of the old site had not been obtained the acquisition of the new premises and building would have been further delayed, much to the detriment of the educational progress of the institution as well as of its real philanthropic work. But owing largely to the munificence of Sir Edwin and Lady Saunders some years ago, together with the substantial help of many members of the dental profession, the freehold of the old site was obtained, and it now proves a valuable asset. The new hospital will therefore start with an ineffaceable debt to Sir Edwin Saunders and his wife. But the growth and progress of this important department of charity are a credit to all the staff and the students. From the commencement of the rehousing and rebuilding scheme to the present time they have contributed no less a sum than £15,450, in addition to £2000 which, as we announced last week, were recently given by the staff—facts which afford an example of self-help that should stimulate the giving of help from without. As the authorities are still appealing for funds it is well that the present financial position in regard to the new hospital should be known. When it was decided to build a new hospital the site upon which it is now erected in Leicester-square, adjoining the older hospital, was in the market. It was decided to purchase this site, and members of the medical and dental professions and patrons of the old hospital subscribed several

thousands of pounds in response to an appeal. At that time the houses upon the site yielded rents which it was intended should help to defray the expenses of building new premises. Soon after the negotiations were completed, however, the London County Council and the vestry decided that the houses were unsafe, so that they had to be pulled down. The rents thus ceased. The managing committee were then faced with a serious problem. Two courses were open to them—either to sell a splendid site or to retain it, costly as it necessarily was, in such an excellent position, and finally to mortgage it and the building when finished. The bankers of the hospital, Messrs. Barclay and Co., came to the aid of the committee and promised to advance the money at 4 per cent. to build on condition that the building was mortgaged on completion and their advances were repaid. The result of this is that the site and hospital buildings are mortgaged for £55,000, at 3½ per cent., to be paid off in 30 yearly instalments with interest, unless large donations or legacies enable the sum to be paid off more rapidly—a contingency which is happily provided for in the mortgage deed. It is to be hoped that generous donations and subscriptions may be forthcoming, in order that the committee of management may be speedily relieved of all anxiety on this score. There can be no doubt that the institution is in the highest sense deserving of support, and hitherto its claims upon the public have, in our opinion, not been sufficiently considered. The administration of a dental hospital involves considerable expense. The staff of the Dental Hospital of London consists of 17 dental surgeons and 11 anæsthetists, all of whom are honorary officers giving up several hours a week to the work. A deserving patient can get extractions with or without anæsthetics and teeth stopped free of cost on presenting a governor's order; while crowns, bridges, and dentures are supplied on payment of small fees partially to defray their cost. It is hoped that these charges will be abolished in future years; they will be abolished if the financial position of the hospital improves as its work becomes better known.

ARSENICAL BEER IN LANCASHIRE.

WE have received a copy of the report of the medical officer of health of the Lancashire County Council, Mr. Edward Sergeant, in which the extent reached by the beer-poisoning epidemic in that county is well and briefly described. The investigation was commenced as soon as it became known that the hospitals of Manchester and Salford were getting crowded with patients suffering from symptoms attributable to peripheral neuritis, and that the origin of the epidemic had been traced to the consumption of arsenically contaminated beer. From Nov. 27th to Dec. 3rd, 1900, inclusive, 78 preliminary samples of beer were taken and of these 27 contained arsenic. Subsequently a letter was sent to the medical officers of health of the various districts affected warning them of the probability of the sugar being used in the manufacture of beer being contaminated with arsenic. Replies were received, showing that patients suffering from symptoms characteristic of chronic arsenical poisoning had been recognised in several districts, and that altogether 372 cases had come under observation. Subsequently to the issue of this circular letter addressed by Mr. Sergeant to the various medical officers of health of the county, and down to Jan 8th, 1901, 141 samples of beer were analysed, of which 31 were contaminated with arsenic, the largest amount found being equal to three-fourths of a grain per gallon, or more than a maximum medicinal dose per pint of beer. It is, however, satisfactory to note that more recent analyses have shown that the beer supplied to the country districts has improved in character. That the evil has not yet passed away is evident from the fact that two of the samples purchased on Feb. 8th have each been found to contain one-tenth of a grain of arsenic per gallon. Recent inquiries have elicited that generally the patients suffering from the effects of poisoning are improving or have recovered. Some, however, Mr. Sergeant adds, are still seriously ill from the effects of arsenic taken in beer 10 or 12 weeks ago.

THE PERILS OF AN ASYLUM MEDICAL OFFICER.

THE dangers to which asylum medical officers are exposed are well exemplified by the sad case of Dr. Margaret Orange, the assistant medical officer of the London County Council Lunatic Asylum at Claybury. During the year 1899 she was assaulted by lunatics under her charge, being struck behind the ear and also knocked against some iron railings. Leave of absence was granted to her in order that her health might be restored, but so far, we regret to learn, she has not recovered. She was in receipt of salary and emoluments amounting to some £270 per annum, but it now seems likely that she will never be able to earn her living. On Feb. 12th the Asylums Committee of the London County Council recommended that Dr. Orange should be granted a pension of £100 per annum, and this recommendation was adopted by the Council on Feb. 19th. The pension dates from Jan. 24th, 1901. We offer our sympathy to this brave lady upon the cutting short of her career and express our hope that she may yet at some future time be enabled to continue her professional work.

THE HEALTH OF HAVANA UNDER AMERICAN RULE.

MAJOR W. C. GORGAS, United States chief sanitary officer of Havana, has just issued his report upon the hygienic conditions prevailing in that city during the past year. Yellow fever, the disease which is most dreaded by persons of white race inhabiting or visiting Cuba, is shown by the report to stand eighth in the records of deaths for the year. In 1899, the first year of American occupation, there were 103 deaths from yellow fever in the Cuban capital, the lowest number in 10 years, while in 1896 the death record from the same cause was 1282. In 1900 seven diseases caused more deaths than yellow fever in the following order—tuberculosis, 851 deaths; diarrhœa and enteritis, 506 deaths; organic diseases of the heart, 443 deaths; meningitis, 395 deaths; diseases of the arteries, 357 deaths; malaria, 344 deaths; and pneumonia, 319 deaths. Typhoid fever, diphtheria, small-pox, and other epidemic diseases caused comparatively small mortality. There were a considerable number of fatal cases of tetanus. In the 12 months covered by the report 1244 cases of yellow fever occurred, 920 of which were among Spaniards with a death-rate slightly above the average death-rate for the city, which was 24·90. Among the Americans there were 235 cases. Of all cases about two-thirds had been in Cuba less than one year, the large majority being recently arrived Spanish immigrants. The immigration has been very large, the last four months of the year giving a little more than 11,000. The report declares that the effect of the measures adopted for ridding Havana of the foci of infection has been very marked. Of the 857 occupied blocks making up the city 452 have had one or more cases of yellow fever in them. In these blocks are 26,701 houses; 885 have shown evidence of infection by having had one or more cases. Of the 885 infected houses 694 were successfully disinfected by one disinfection, as shown by the fact that they had only one case; 130 required two disinfections, that is, of the 885 infected houses all but 61 were freed from yellow fever after the second disinfection. These results

demonstrate the success of careful isolation and prompt disinfection. Of the 24,000 immigrants into Havana during the year 21,000 came from Spain, which fact explains the large proportion of Spaniards among the cases of yellow fever. In 1900 Havana had a smaller number of deaths than in any one of the preceding 10 years; 1893 was next with 6697 deaths, some 500 more than last year. The average number of deaths for the 10 years up to 1900 was 10,243. Last year there were 4000 less than this average. The death-rate for 1900 was 24·40, while the lowest of the preceding 10 years, 1893, was 30·66, and for the first year of the American occupation, 1899, it was 33·67. It is noticeable in the list of deaths that a large proportion of the fatalities occurred among white males. This is due to the fact that a large portion of the population of Havana is composed of foreigners, and these foreigners are almost entirely white males, the male population of Havana greatly outnumbering the female. The report ends by saying that it is not too much to state, judging from results, that the measures, sanitary and otherwise, which have been taken by the American authorities with a view of improving the health of Havana have been most eminently successful. This work has reduced the death-rate of 1898, the last year of Spanish rule, from 91·03, which represents 21,252 deaths, to 24·40, representing 6102 deaths; and the methods pursued have caused a steady improvement in the sanitary conditions of Havana. Taking the average number of deaths per year for the 10 years at 10,243, which would be for the two years 20,486, as representing what the deaths would have been if the United States had not interfered in Cuban affairs, and deducting from this the actual number of deaths (14,255) which have occurred in the two years of the American occupation, we have 6231 as the number of lives saved in the city of Havana by the efforts of the American authorities. Too much stress must not, of course, be laid upon such calculations and deductions, but it is undoubted that the United States are to be congratulated upon some sterling sanitary work.

THE LUMBAR INJECTION OF COCAINE AS AN ECBOLIC IN THE INDUCTION OF LABOUR.

A CORRESPONDENT recently[1] laid before our readers a summary of American and continental observations of the value of lumbar sub-arachnoid injections of cocaine in surgical practice. We desire now to call attention to the communications of M. Doléris to the Académie de Médecine, to the Paris Society of Obstetrics and Gynæcology, and, lastly, on Feb. 11th to the Medico-Chirurgical Society of Paris. In these communications M. Doléris confirms what had been recognised as the physiological action of cocaine on blood-vessels and on muscular tissue, and in addition to its already proved analgesic properties he refers to its ecbolic powers, or, as he terms them, its *action ocytocique*. As regards the uterus, M. Doléris maintains that this power of exciting muscular contraction may be a counter-indication of cocaine when version has to be performed, although Kreis has published a case of podalic version by the Veit-Smellie method after a lumbar injection of cocaine. M. Doléris points out that three independent observers, Kreis, Dupaigne, and himself, have now published over 100 cases of the effect and value of cocaine in labour. The anæsthesia persists while the uterine contractions are strong and succeed each other rapidly, the cervix dilates regularly and quickly, and the condition of the child is excellent. These effects were further proved on Oct. 8th, 1900, when M. Doléris performed Cæsarean section for contracted pelvis in a case in which analgesia was obtained by the injection of one and a half centigrammes of cocaine into the lumbar sub-arachnoid space. The result was strikingly satisfactory, the uterus remaining firm and contracted after the extraction of the child and while the uterine sutures were being applied. In no previous Cæsarean section had M. Doléris observed such thorough and prolonged uterine contraction. In uterine inertia the effect of the injection of one centigramme (about one fifth of a grain) of cocaine is similar. Finally, M. Doléris attempted successfully to prove that such injections sufficed to provoke uterine contraction apart from all natural commencement of labour. He has given details of two cases of induction of labour by means of the injection of the small dose of one centigramme of cocaine. In the first case a patient was sent to him with the correct diagnosis of a seven months pregnancy, the fœtus being dead and macerated. The patient was kept in hospital for three weeks under observation. The cocaine was then injected and 15 minutes later the uterus, which had been inert and limp for about a month, contracted regularly and vigorously for one and three-quarter hours without arousing any pain. The os uteri was then of about the size of a five-franc piece. As the analgesia passed off the uterine contractions became less powerful and labour continued normal, being completed in six hours and 20 minutes. This comparative rapidity may be noted in contrast with the slowness of dilatation in most cases of macerated fœtus. In the second case the onset of labour was even more rapid. The patient, a multipara pregnant eight months and one week, was *in extremis* with advanced tuberculosis. Nine minutes after the injection the uterus contracted vigorously, the pains following each other every three minutes, the labour being completed in four and a half hours. M. Doléris thus maintains that the spinal injections of cocaine act with certainty on the motor nerves of the uterus and form a new method of inducing labour, and that they are of great value in the treatment of uterine inertia. He has had no accident in 78 cases. A considerable amount of confirmatory evidence must be forthcoming before these observations of M. Doléris can be accepted as holding good in all cases. One of the main objections hitherto urged against the use of lumbar injections of cocaine in midwifery is that the drug tends to produce uterine inertia and abolishes the action of the abdominal muscles. It is a pity that the records of cases of parturition treated in this way do not give us fuller details upon this important point. It is a striking fact that in 40 cases Marx had recourse to the use of forceps in no less than 16, a very high proportion. M. Doléris's present contention is the more striking since in quite a recent communication he advocated the dilatation of the vagina and perineum by the use of hydrostatic bags as a means of hastening delivery in cases of labour in which analgesia had been produced by lumbar injections.

[1] THE LANCET, Jan. 12th, 1901, p. 137.

DISINFECTION OF THE HANDS.

As was recently stated in these columns[1] the results obtained with Schleich's *Wachsmarmorstaubseife* by several observers were all more or less contradictory, and that not only with regard to the claims of the inventor himself but also *inter se*. It occurred, therefore, to Dr. Deeleman to inquire into the matter, so that the question might be set at rest once for all, and accordingly he instituted a series of experiments with the discredited preparation and has recorded his verdict in the *Deutsche Militär ärztliche Zeitschrift*. The conclusions arrived at, although in some respects at variance with Schleich's assertions, are, nevertheless, on the whole in favour of the efficacy of the compound, which the investigator pronounces to be "a remarkable means of disinfection for the hands." It is absolutely necessary, however, that before using it the nails should be cut as short as possible and also that every

[1] THE LANCET, Oct. 27th, 1900, p. 1220.

endeavour should be made to clear out all fissures and furrows, whether natural or artificial, and to render the skin of the hands as soft, smooth, and pliant as possible. In order to prepare Schleich's "mechanical disinfector" 750 parts of resinous soap (clear yellow in colour, freshly made, and cut up into small pieces), having been dissolved in 1500 parts of hot water, should be placed upon a fire with 150 parts each of stearine and wax. As soon as the last-named substances are melted 700 parts of powdered marble should be poured in very slowly, the mixture meanwhile being carefully stirred. The loss from evaporation (usually about 300 parts) should next be made good and then boiling be allowed to continue until the mixture becomes of the consistency of syrup, the last part of the process generally lasting about half an hour. As soap produced in this way is said to cause slight epidermic erosions in tender skins it would be prudent to avoid making use of it in laboratories where preventive serums of an infectious disease were being manufactured.

SPECIAL OPHTHALMIC NUMBER OF THE "INDIAN MEDICAL GAZETTE."

IN the January number of the *Indian Medical Gazette* it is announced that a special Ophthalmic Number will be issued in a few months. Everything will be done to make this forthcoming number representative of ophthalmic surgery in India at the present day, and circulars have been sent by the editor to ophthalmic surgeons throughout India inviting information on points of interest in connexion with diseases of the eye and its appendages, and especially on the subjects of cataract, trachoma, and errors of refraction. The replies to these circulars are to be addressed to Major W. J. Buchanan, I.M.S., Editor *Indian Medical Gazette*, Bhagalpur, E.I. Railway, or to the Editor, *Indian Medical Gazette*, care of Messrs. Thacker Spink and Co., Calcutta. On account of the great field for ophthalmic operations which exists in India our contemporary's collective investigation cannot fail to be of practical importance and will form an interesting contribution to ophthalmological literature. Last year the same journal brought out a special number devoted to the treatment of stone in the bladder, allusion to which has already been made in our columns.[1]

CREASOTE IN PNEUMONIA.

IN a paper read before the Central Texas Medical Association Dr. J. L. Van Zandt drew attention to the advantages to be obtained by the use of creasote or preferably creasotal in pneumonia. After giving his own experience, which he said was satisfactory, Dr. Van Zandt quoted several passages from the writings of other physicians, all speaking highly of this method of treatment. Dr. Van Zandt spoke in enthusiastic terms of the results he had obtained. At first he gave one drop of the drug every three hours, but latterly he had prescribed seven and a half minims of creasotal. This appears to be a large dose, but he states that "others give larger doses with possibly better results or no harm." He adds: "I have had cases in which the fever was gone in from 24 to 48 hours, and I am now somewhat disappointed if my patient is not ready for dismissal by the third or fourth day." In conclusion, Dr. Van Zandt expresses his opinion "that the use of creasote or carbonate of creasote in the treatment of pulmonary inflammation is one of the greatest life-saving discoveries of the century just ended." We cannot adopt Dr. Van Zandt's extremely laudatory attitude towards creasote, but in some affections, notably of the gastro-intestinal tract, it is undoubtedly a most useful drug. At one time it was extensively used in pulmonary tuberculosis, but is now not nearly so frequently employed; indeed, many authorities consider that its great advantage in cases of tubercle is not due to any selective action in the bacillus of tuberculosis, but to its preventing fermentative changes in the digestive tract, thereby greatly improving the power of digestion or absorption of food. With regard to its use in pneumonia we prefer to suspend our judgment. The recognised treatment of this affection is mainly expectant—to preserve the patient's strength as far as possible and to endeavour to lower the temperature should it continue raised too long. We think that creasote might be tried in this country more extensively than it has been, for the evidence brought forward by Dr. Van Zandt is certainly strong.

[1] THE LANCET, Jan. 19th, 1901, p. 193.

MILK-SUPPLY AT ASHTON-UNDER-LYNE.

AT the last meeting of the town council of Ashton-under-Lyne an important step was taken towards reducing one of the factors contributing to the high infant mortality so discreditable to our manufacturing districts. The sanitary committee have been recommended to purchase "two 'Wyvern' sterilisers complete, one milk receiver, one measuring and mixing tub, two cream cans, one bottling machine, one 3-h.p. boiler, and other apparatus." A shop is to be taken for sterilising and humanising milk, and a competent manageress is to be obtained. Mr. Shaw, in moving the adoption of the minutes, contended that the proposed scheme was closely related to the question of the infant death-rate, and the committee had adopted what they believed to be one of the best schemes in the country. The milk is to be called "modified," not "humanised," and it is to be sold not only in bottles for infants' food, but in pints and quarts for general use. The whole of the medical profession in the town are said to support the scheme. Mr. Shaw anticipated "that eventually it would become a source of profit." Indirectly it will almost certainly become profitable by diminishing sickness and lowering the death-rate, provided that it is efficiently carried out and made use of by the people, and we may wish for it every success.

PUBLIC HEALTH IN THE STRAITS SETTLEMENTS.

THE estimated population for the whole of the Straits Settlements for 1899 was 604,916, as compared with an estimated population of 592,587 for 1898. The number of births registered during 1899 was 14,537, and the number of deaths registered was 19,150, giving a birth-rate of 24·03 per 1000 of the population and a death-rate of 31·16 per 1000. In his "Annual Medical Report on the Straits Settlements Civil Hospitals for the year 1899," Dr. Max. F. Simon, the principal civil medical officer, says that small-pox was the only epidemic disease prevalent during the year, over 300 cases occurring in Singapore. The whole number of admissions to hospital during 1899 was 22,835, and the number of deaths was 3432. The five diseases under which the greatest number of admissions to all the hospitals was returned in 1899 were as follows: venereal diseases, 2523 (with 88 deaths); malarial fevers and cachexia, 2336 (with 148 deaths); beri-beri, 1793 (with 589 deaths); rheumatism (acute and chronic), 1137 (with two deaths); and dysentery, 913 (with 313 deaths). The hospitals in Singapore of which statistics are given are the General Hospital, the Prison Hospital, Tan Tock Seng's Hospital, the Leper Hospital, the Lunatic Asylum, and the Maternity Hospital. In Singapore the highest shade temperature for the year was 88° F. in May and the lowest was 71° in February. The total rainfall was 103·36 inches. A small outbreak of plague which happened in Penang during May, June, and July is reported on by Dr. T. S. Kerr, the colonial surgeon. There were 49 cases, including 46 Chinese, one Malay, and two Tamils; 39 died. A large proportion of

the seizures occurred in brothels and 19 of the Chinese patients were females.

BRITISH CONGRESS ON TUBERCULOSIS.

AT this congress, which is to be held in the Queen's Hall, Langham-place, London, W., in the week beginning July 22nd, 1901, it has been arranged amongst other matters for three public addresses to be delivered in the arge hall on Tuesday, Wednesday, and Thursday of that week. The first will be given by Professor Koch of Berlin, the second by Professor Brouardel of Paris, and the third by Professor J. McFadyean of the Royal Veterinary College.

CLINICAL SOCIETY OF LONDON.

ON March 8th the Clinical Society of London will hold a discussion at 20, Hanover-square, W., on the recent epidemic of enteric fever among the troops in South Africa. It will be opened by Dr. Howard H. Tooth with a paper on Some Personal Experiences of the Epidemic in the Orange River Colony. It is understood that Sir William Church, Sir Dyce Duckworth, and Professor A. E. Wright of Netley will speak at the meeting. The principal points to be raised by Dr. Tooth in his paper will be as follows:—1. The origin of the epidemics: In the camp at Modder river; relation of the Bloemfontein epidemic to that of Modder river. 2. The dissemination of the disease: (*a*) Water: At Modder river camp (the Modder, the Riet, and wells); at Bloemfontein (the spring, wells, and latterly the waterworks). (*b*) Sandstorms. (*c*) Flies. (*d*) Personal infection from man to man. 3. Precautions taken to prevent the spread of the disease: boiling and filtering of the water; the sinking of wells; latrine arrangements, the disinfection of evacuations. 4. Preventive inoculation: figures relating to patients admitted to the Portland Hospital; inoculated and non-inoculated compared in respect of severity of symptoms and mortality; general remarks on inoculation; probable value of the reaction as a measure of natural immunity. 5. Some remarks on treatment. It will be seen that Dr. Tooth's paper deals with matters that are of exceptional interest just now to the public as well as to the medical profession.

CASES OF SPINA BIFIDA TREATED AS OUT-PATIENTS BY OPEN OPERATION.

IN the present issue of THE LANCET we publish an account of three cases of spina bifida in the cervical region which were under the care of Dr. James H. Nicoll in the out-patient department of the Glasgow Royal Hospital for Sick Children. Dr. Nicoll treated them all, as he has treated many others, by the open operation and then sent the patients home to be looked after by their mothers. In all the cases the wounds healed by first intention, and the patients recovered completely and remained well. At the present time much more serious cases are treated in the out-patient department than formerly and this is chiefly to be attributed to the practical certainty of the asepsis of modern surgical wounds The advantages of a mother's care of a child are not to be denied, and in Dr. Nicoll's cases there was the safeguard of the superintendence of hospital sisters who visit at the patients' homes and see that the nursing is carried out satisfactorily. Without venturing to criticise the practice of treating cases of spina bifida as out-patients—for the results attained by Dr. Nicoll may be reasonably claimed to justify the method—yet we may point out that there is no region of the body in which sepsis is so fatal as it is in the brain and spinal cord, and that therefore a displacement of the dressing might easily prove fatal. The supervision by the hospital sisters of the nursing in the home goes far to obviate the risk of the occurrence of this danger, but it does not entirely remove it. It would be of interest to have a list of all the cases which Dr. Nicoll has thus treated. Such patients can, of course, be treated as well at home as in a hospital if the nursing is adequate, but that is the great difficulty experienced in dealing with patients of the class who attend the out-patient department of a hospital.

THE NEW SYDENHAM SOCIETY.

IN another column we publish a letter from Mr. Jonathan Hutchinson to which we would direct our readers' earnest attention. Although as Mr. Hutchinson says of the New Sydenham Society, the "*raison d'être* of the society has been to a large extent removed," it has done such admirable work in the past that it would be a thousand pities if its existence were to cease. The proposed "Atlas of Pictorial Aids to Diagnosis," an advertisement of which scheme appears in our present issue and a description of which is given in Mr. Hutchinson's letter, would undoubtedly be of great value. Pictures are the books of the unlearned and all of us are unlearned in some or other department of our profession. For every one of us there exists some disease or condition which he has never seen but which at any time he may be called upon to diagnose. The present membership of the New Sydenham Society is nearly 1400. To make the new scheme a success at least 2000 members are required. We trust that the additional 600 members will be obtained.

A LEAGUE AGAINST HOOLIGANISM.

THE Twentieth Century League held an inaugural meeting at the Mansion House on Friday, Feb. 22nd. The influential character and considerable size of the meeting show how deeply the object of this league—viz., to remedy the neglect that has led to the present condition of disorder among the young portion of the community in and around London—affects the public interest. That a condition of grave disorder largely exists none can doubt who reads a daily newspaper. That Hooliganism, to use a convenient and inclusive expression, is an inevitable accompaniment of the growth of great cities unless special steps are taken to repress or prevent the evil is no doubt true, and that such steps have in London been hitherto inadequate is, we are afraid, equally the case. The Twentieth Century League will have the sympathy of all our readers and perhaps the active support of younger members of the medical profession whose time permits them to take a part in such enterprises as these, for which their elders can spare only the support of goodwill or subscription. Among the best institutions for carrying out the class of work which the Twentieth Century League intends to foster and extend are settlements in connexion with the Universities and the great public schools, and among the best workers at such centres there are usually to be found a sprinkling of young medical men. Their close association in hospital work with the class to whose physical and moral welfare the settlements are devoted often gives men of our profession a sympathy with, and an influence over, young men and women of the poorer classes that are not usually accorded to the ordinary man of education. Moreover, to the youths for whom cricket, football, gymnastics, or boxing are not, for one reason or other, available, a class in the rudiments of first aid to the injured is often one of the most popular occupations for winter evenings. Such classes and similar instruction for young women in the elements of nursing and care of children are usually conducted by young medical men. The chief aim of the Twentieth Century League will be to get hold of boys and girls on leaving school and provide them with means for adequate exercise and rational amusement under proper conditions. The great difficulty, judging from what we know of present institutions with a like aim, is to find a large enough number of active supporters. Here,

too, the medical profession may, by turning into a useful channel the misspent energies of many a young woman and man who suffers from having much money and no aims, benefit both their own patients and the girls and boys of the poor and general public. It is obvious that the national welfare is largely bound up in the proper evolution of thousands of poor boys and girls into men and women sound in body and mind. To insure such a future for the younger members of the poorer classes of London is the object of the Twentieth Century League and it will meet with the support of every right-minded citizen and the especial sympathy of the medical profession.

THE GOVERNMENT AND THE LICENSING LAWS.

MR. WHITTAKER'S amendment to the Address led to a speech from the Home Secretary which goes far to remove the impression of indifference or helplessness on the part of the Government left by his previous speech to a deputation. We wait hopefully for the promised Bill. All other countries are alive to the importance of the drink question and neither the violence of faddists nor the interests of political parties ought to be allowed to interfere with reasonable legislation.

THE POOR-LAW MEDICAL SERVICE OF THE HIGHLANDS AND ISLANDS OF SCOTLAND.

WE have received a copy of a petition which the Poor-law medical officers of the Highlands and Islands of Scotland have addressed to the House of Commons asking the consideration of the House for the onerous and unfair conditions under which they hold office. The petition points out that the Local Government Board of Scotland have no powers to deal with the grievances complained of without further legislation. The board, for example, cannot ensure proper holidays for the medical officers by providing that the parish councils shall pay for substitutes to do the work during the absence of the medical officers on vacation, though the board has expressed its sympathy with such a reform. The Poor-law medical service of Scotland does not compare favourably with the similar services in England and Ireland, as we have pointed out often in our columns. In Scotland parish councils have the power to dismiss their medical officers with a few weeks' notice and without a reason, whereas in England and Ireland the approval of the respective Local Government Board of the country has to be obtained. The medical officers of the Poor-law districts in Ireland have been conceded the right to an annual holiday of reasonable length, the parish councils or boards of guardians being empowered to pay for qualified substitutes. No such just treatment has been extended to the medical officers of the poorer districts of Scotland. The medical officers of the Highlands and Islands of Scotland receive salaries which are completely inadequate to the work that is demanded of them, while the rise in the fees of locum tenents places any idea of their availing themselves of such services out of the question. The petition prays that the same fixity of tenure should be afforded to the Poor-law medical officers in Scotland as is afforded to Poor-law medical officers in England and Ireland; that during an annual holiday of reasonable length a substitute should be paid by the parish; that during illness contracted or accident met with in pursuance of professional duty the parish council should pay a substitute, or alternatively should insure the medical officer against sickness or accident; that a free official residence should be provided for the parish medical officer, an adequate salary, and a satisfactory superannuation allowance. There is not a word in this most reasonable petition which does not meet with our heartiest support. We have on previous occasions dwelt more upon the necessity of the tenure of these posts being fixed than upon other points, but to grant the medical officers fixity of tenure in posts where their arduous work is rewarded with no vacations, no pension, and little salary, is not a conspicuous kindness. We trust that the House of Commons will find time to right the grievous wrongs of the Poor-law medical officers in the Highlands and Islands of Scotland. The petition only asks for what is just.

UNCERTIFIED DEATHS.

A DEPUTATION from the General Medical Council had an interview on Thursday last on the above subject with the President of the Local Government Board. The deputation consisted of Sir William Turner, Sir Dyce Duckworth, and Dr. J. G. Glover. The Registrar-General, Dr. Tatham (Superintendent of Statistics at the General Register Office), and Mr. Power (Principal Medical Officer to the Local Government Board) were also present.

DRUG HABITS IN THE UNITED STATES.

THE New York School of Clinical Medicine has established a special department of neurology, of which Dr. T. D. Crothers of Hartford, Conn., has been elected professor—viz., the study of the neuroses and psychoses of alcoholism and of drug habits. Dr. Crothers is announced to deliver immediately a course of clinical lectures on inebriety from alcohol, opium, chloral, cocaine, and other narcotics. These lectures appear to be timely, for the diseases dependent upon or associated with the abuse of alcohol, opium, chloral, cocaine, and other narcotic drugs are steadily increasing in the United States of America, and the demand for special treatment in institutions and retreats is becoming more pressing every year. The last number of the *Quarterly Journal of Inebriety* has the following words in a leading article: "All the large public hospitals and asylums in the States have wards and rooms for alcoholics and drug-takers, and the same demand for treatment is seen in private practice in the increasing number and urgency of such cases." It is also important to notice that there is practically very little special literature dealing systematically and authoritatively with the nature and treatment of these neuroses. As a consequence this field is largely occupied by charlatans and irregulars, who, with innumerable specifics and secret drugs, claim the most marvellous results. We hope that the departure of the New York School of Clinical Medicine, in giving exact systematic instruction in these diseases, will be welcomed by the medical profession in the United States.

THE Executive Committee of the General Medical Council publish the following analysis of the voting at the election recently held in Ireland of a Direct Representative to be a member of the Council for the ensuing five years.

	Votes.
For Sir William Thomson	1130
For Mr. Thomas Laffan	245
Spoiled votes	21
Votes received too late	29
Papers returned by Dead Letter Office	51
	1476
Did not vote...	1283
Total number of voting papers issued ...	2759

IN our Manchester correspondent's letter last week reference was made to the memorial which it is proposed to establish of the late Professor Tom Jones. To-day we print in another part of THE LANCET a letter from the supporters of the movement together with a list of some of the contributions already promised. As it is desired that all who participate in the proposed tribute to the deceased

professor's memory should do so from the dictates of their hearts there will be no canvassing.

AT a meeting of the Council of Owens College held on Feb. 20th Mr. R. B. Wild, M.D., M.R.C.P. Lond., M.Sc. Vict., was appointed, subject to the approval of the court, Professor of Materia Medica and Therapeutics. The late Dr. D. J. Leech held the chair for 19 years with great benefit to the medical school and the council decided that his name shall henceforth be associated with it, so that the professorship will be called the Leech Professorship of Materia Medica and Therapeutics.

THE Society of Apothecaries of London have presented an address to the King expressing the Society's sincere condolence on the death of the late Queen "after a reign without parallel in history," congratulating the King upon his accession, and praying "that your Majesty's reign may be a long and happy one, and that every blessing may attend your Majesty and your Royal Consort, Queen Alexandra."

A TELEGRAM from the Governor of the Cape Colony, Sir Alfred Milner, to Mr. Chamberlain, received at the Colonial Office on Feb. 21st, states that the bubonic plague report for the week ending Feb. 16th notifies a total of 20 cases, the patients being one European and 19 coloured people. There were also three deaths and 104 "contacts," all coloured people.

A TELEGRAM from the officer administering the Government of Mauritius to Mr. Chamberlain, received at the Colonial Office on Feb. 22nd, states that for the week ending Feb. 21st 16 fresh cases of plague occurred, 10 of which were fatal. The total deaths from plague amounted to 13.

THE Goulstonian Lectures of the Royal College of Physicians of London, the delivery of which was arranged for March 12th, 14th, and 19th, are, owing to the illness of the lecturer, postponed to a later date, of which due notice will be given.

UPWARDS of £600 have already been subscribed towards the erection at Norwich of a memorial statue to Sir Thomas Browne.

HISTORY OF RENAL SURGERY.

BY DAVID NEWMAN, M.D., F.F.P.S. GLASG.,
SURGEON TO THE GLASGOW ROYAL INFIRMARY.

I.

THE classification of diseases of the kidney into surgical and medical was, not more than 15 years ago, questioned as being an arbitrary one, but now that the arrangement is accepted, the importance of a knowledge of renal surgery is fully recognised by the profession, and its special study is placed in the position to which it is entitled by the great advances which have been made during the period mentioned. Without invading the sphere of the physician the surgeon has come to his assistance and at the same time extended his own field of operation. But in order that the best results may be attained the physician and the general practitioner must work hand in hand with the surgeon, and endeavour to recognise the cases at an early stage in the disease that are likely to be benefited by surgical treatment. Only by such cöoperation can the highest achievement be gained.

Seeing that it is one of the internal organs that is affected the patient naturally looks to the physician for relief. The medical attendant who makes an early diagnosis renders to the patient a service as valuable as that of the surgeon who at a later date performs a successful operation. Doubtless many diseases of the kidney are difficult to diagnose in their incipient stages even after careful analysis of the symptoms and physical signs; therefore, anyone who desires to form a correct diagnosis, with the view to operative interference, must be familiar with the very intimate relationships existing between the various parts of the urinary system. In other words, the surgeon must not only be thoroughly acquainted with his own special department, but he must also have a knowledge of that sphere which has been conventionally assigned to the physician.

Although conceived at a very remote period in the history of our art, the birth of renal surgery, as we now know it, cannot be placed at a more distant date than 30 years ago, and therefore it must be regarded as one of the youngest branches of surgical outgrowth. Its early conception and its very slow development cannot fail to be of interest to those who have witnessed its rapid and vigorous growth in our own time. A study of the early history of the subject will show how far the highly developed surgery of the present day is indebted to the thought and labours of the ancient apostles of the healing art. Their early efforts are not now well known, and therefore have not been fully appreciated in our time. It is remarkable how much information can be gathered from a study of the writings of eminent physicians in the remote past. They, like the observers of the present day, gained their knowledge from practical experience with the phenomena of disease; they showed wonderful perseverance in collecting facts, in separating truth from error, and with these faculties they combined an extraordinary ability for generalising and or enunciating principles, and a power of publishing them *virum volitare per ora*. Francis Adams of Banchory, in Aberdeenshire, a man of great learning and most conversant with ancient medical lore, who translated from the Greek the seven books of Paulus Ægineta, as well as the works of Hippocrates, remarks in his preface (1833):

> It appears to me that, at certain periods of ancient times, the standard of professional excellence was such as would not easily be attained at the present day, with all our vaunted improvements in knowledge; and that many of those early masters of our art were distinguished for varied stores of erudition, an ardent love of truth, and an aptitude to detect the fallacies of error, such as few of us even now can lay claim to.

While their opportunities were hampered by a lack of the exact scientific knowledge and the methods and the means of investigation which we now possess, the acuteness of their observations is surprising, and their descriptions of symptoms, their prognoses, and their indications as to treatment are so clear that the individual diseases can now be easily recognised and placed in our nomenclature. Hippocrates (B.C. 460), who is rightly regarded as the "father of medicine," held that to become an eminent physician it was not only necessary for the student to cultivate an acquaintance with the structures and functions of the human subject, but also to be skilled in logic, astronomy, and the other sciences. 2000 years before Europe gave John Locke, philosopher, philanthropist, and physician, the credit of introducing the methods of inductive philosophy into this country, and before the great learning and superior judgment of his friend Sydenham advanced medicine, Hippocrates studied and taught according to the same strict principles. He says:—

> The physician must be able to tell the antecedents, know the present, and foretell the future—must meditate these things, and have two separate objects in view with regard to diseases—namely, to do good or to do no harm. The art consists of three things, the disease, the patient, and the physician. The physician is the servant of the art, and the patient must combat the disease along with the physician.

Hippocrates mentions diseases of the kidney in many passages of his works, and he recommends incision to be made in cases of abscess in order to furnish an outlet for the pus. It has been a matter of dispute whether Hippocrates advised the incision of the kidney or simply the evacuation of perinephric abscesses, but as abscesses of the kidney are much more common than collections of pus around the organ, the probability is that the earlier operations were performed for pyonephroses, and that in some instances calculi also were removed. In his treatise on internal affections four diseases of the kidneys are described.

> Four diseases originate in the kidneys. Under the first the patient suffers in the following way, violent pain arises in the kidney, the groin, and in the testicle of the same side. A frequent discharge of urine changes to stoppage; with the urine sand is discharged, which causes violent pain. After the discharge the pain ceases, and then returns in like manner. During the discharge of urine the pain is sometimes so severe that the patient has to rub the penis. Many doctors who are not acquainted with this disease think, when they see

the sand, it must be a vesical calculus, but this is not the case; it is more likely to be stones in the kidney. This disease is caused by mucus which the kidneys absorb, but do not give out again, and thus small stones like sand are formed. In such a case perspiration should be caused by the root or juice of Scammony, but an aperient must first be given. The following day another aperient should be given, administering at the same time a drink composed of 2 measures [equal to 7 litres] of a decoction made from chick-peas and salt. After this the patient should be treated with regard to drinks, food, and baths, as in a case of *strangury*, and the same medicines should be used. During the attacks of pain the patient should be bathed frequently and warm poultices applied. If however, a swelling should arise, it will be necessary to cut into the kidneys, remove the matter, and take away the sand by means of diuretics. After cutting, there is a chance of recovery, otherwise the disease generally ends in death.

Under the second disease, the pain is as violent as in the first case The suffering begins after great bodily exertion, which tears the small veins leading to the kidneys, and causes the latter to fill with blood. If this happens, the patient passes blood with the urine and afterwards matter. If the body is allowed to rest, recovery will be quick; on the other hand if it is moved ever so slightly the pain will last much longer. If the kidney fills with matter, a swelling will appear near the spine. Under such circumstances, the swelling must be cut, and if possible deep towards the kidney. If this succeeds there will be almost immediate recovery, but if unsuccessful, there is the danger of an abscess forming which will require longer treatment. Should the abscess close, the hollow in the kidneys will fill with matter. If the latter breaks through and goes off by the anus, there is hope of recovery; but if the other kidney be drawn into sympathy, there follows great danger of death. The same medicines, treatment and diet should be observed as in the foregoing case. The diseases are dangerous, and many fall, in the end, into phthisis of the kidneys.

Under the third disease, the urine resembles the bray of roast beef. The pain is caused by the black gall flowing into the small veins leading to the kidney, which causes ulceration of the veins and kidney. Matter is mixed with the urine. Immediately there arises pain in the groin, the bladder, the perinæum, and even the kidneys themselves. It soon relaxes, returning again violently, often going into the stomach Under these circumstances Epithymum or Scammony root should be given. If the pain lasts, and there is strangury, frequent warm bathing and poultices should be applied. Prescribe a drink made from boiled wheaten flour and honey, also a soothing diet, giving Mendes Wine with honey, or other sweet white wine suitably diluted. The disease does not easily give way. According to the time of year give whey or milk, the former till purgative action takes place; the milk cure, however, is continued for 45 days. Under this treatment the disease will be cured.

The fourth disease arises from the gall and mucus, chiefly in summer time, and also after sexual excess. The patient feels pain in the side, in the groins, and in the inguinal region, and in the muscles; he cannot lie on the healthy side, suffers fearful pain, and feels as if something were torn in the side. The feet and ankles are always cold, urine is passed with difficulty on account of the mucus, and if the urine is allowed to stand, a sediment is left like flour. If gall predominates the urine is slightly red, and if mucus, white and thick. The symptoms may last a year, and suffering during that time becomes more acute. If a swelling appears during suppuration, it should be cut. A purgative and warm baths should be given in the treatment of the disease, and the patient should be kept warm.

The first class here is easily recognised as renal calculus associated with repeated obstruction of the ureter, and with transitory hydronephrosis or pyonephrosis, while the second is a clear description of rupture of the kidney from severe strain or injury. The likelihood of an abscess following a traumatism is also fully recognised, and its prognosis and treatment clearly indicated. The third and fourth classes are not so easily recognised and are probably descriptions of infective renal diseases associated with vesical and urethral disorders.

While Hippocrates certainly advocated incision in certain cases it is evident that the practice was not followed by the ancients, and the Arabian writers only casually refer to it. Celsus, who lived and taught at the beginning of the Christian era, condemned operations upon the kidney, and this opinion prevailed almost universally until our own day. This retrogression from the teaching of Hippocrates undoubtedly retarded any progress in renal surgery. Celsus, who flourished during the reign of Augustus, writing on diseases of the kidney associated with hæmaturia and pyuria, is by no means clear in his descriptions and it is difficult to be certain if he distinguished between the symptoms of renal calculus and of stone in the bladder. He, however, paid attention to injuries and contusions of the kidney.

Ruffus Ephesus,[1] who lived in the time of Trajan, is one of the oldest writers on diseases of the kidney. He was probably prior to Galen (A.D. 130), and perhaps to Aretæus (A.D. 120) and certainly to Cælius Aurelianus. Francis Adams in his translation of Paulus Ægineta[2] says regarding Ruffus:—

As we have seldom occasion to meet with him in our researches, we shall give a fuller abstract of his opinions on this subject than we would otherwise have done. The symptoms of inflammation of the kidneys, as detailed by him, are pains below the loins, so that the patient cannot stand erect nor walk, but it obliged to lie upon his back, which position affords him most relief; the pains extending to the bladder and testicles; the extremities cold, more especially the legs and feet; frequent and painful desire to make urine, which is at first thin and watery, but afterwards becomes redder. These symptoms are followed by emaciation of the thighs and hips, debility of the limbs, and sometimes suppuration. His treatment is as follows: The patient is to be laid on a soft couch, and must abstain from food for one day, but long abstinence is forbidden. If the bowels require to be opened, this is to be done by means of emollient clysters, such as injections of hot water, decoctions of mallows, of linseed, or of fenugreek, to which may be added some oil. Large injections, however, are forbidden, lest they press upon the kidneys and occasion irritation. When the bowels are evacuated, and yet the pain does not remit, the parts may be wrapped in wool which is smeared with hot oil having rue, marsh-mallows, dill, or mugwort boiled in it. When the pain is acute, a vein at the elbow is to be opened after which emollient cataplasms and plasters are to be applied to the back when the kidneys are affected, and to the fore parts when the bladder. When these remedies fail to remove the pain, the loins and groins are to be cupped, and then sponges squeezed out of hot water are to be applied, and the patient put into a hip-bath of hot water in which poppies, chamomile, and the like have been boiled. Then, when the patient is laid in bed, let him be fomented with bladders half-filled with oil and water; and afterwards let cerates of the oil of privet, &c., or fragrant malagmata be applied. When the pain is excruciating, he directs us to give a decoction containing opium and the heads of poppies. In due time diuretics are to be administered, such as the root of acorus, ground-pine, cassia, spignel, parsley, sea urchins, radishes, carrots, and the like. When an abscess is formed, there is a discharge of tawny and more natural urine, there is swelling in the loins, strong heat in the kidneys, and the pain becomes duller with irregular fever. The abscess bursts either into the bladder or intestines. Praxagoras, he says, related a case in which there was pus voided by the anus for twelve years and probably longer. When it bursts into the bladder, pus is voided with the urine. Suppuration is to be promoted by frequent fomentations with sponges, by cataplasms of barley-meal with a decoction of figs in mead or wine, to which may be added pounded wormwood, spurge, &c. For promoting the rupture of the abscess, diuretics are prescribed, such as wild marjoram, mock dittany, and the like. When the abscess does not burst, acrid clysters containing black hellebore, radishes, garlic and the pulp of colocynth are to be given. To these oil may be added, and when thus taken they will promote the rupture of the abscess. However, fomentations with sponges and plasters are to be applied to alleviate the pain. When the ulcers are of a mild nature (which is shown by the abatement of the fever and pain, and from the substances which appear in the urine being white and inodorous), the milder diuretics are to be used for cleansing them, such as the seed of pompion, the decoction of dates, &c., or, when stronger things are required, galbanum, opopanax, turpentine, rosin, and the like may be added to mead or wine. When the ulcers are putrid, Æthiopian cumin with must, rue with honey and wine, and the like may be given internally; while cataplasms of bitter vetches boiled in wine and honey are to be applied externally. It is proper also, he says, to inject some of the medicines for dysentery, to give clysters of strained ptisan; and to place the patient in hot water. If the matter is thick, a decoction of fennel, parsley, or wormwood is to be given. With respect to food, he recommends milk, especially that of mares or asses, along with honey; also cucumbers, lettuces, the flesh of kids, lambs, and goats, almonds, and wine; but vinegar must be avoided. All motion is to be abstained from. When there are symptoms of repletion, emetics are to be given. When the abscess points outwardly, he seems to direct us to open and apply the cautery; but here unfortunately the text is incomplete.

Galen[3] (A.D. 130), who is looked upon by his admirers and followers as the *beau idéal* of an accomplished physician, and who is copious enough on diseases of the kidney, especially upon stone, does not refer to operations on the kidney as a means of treatment. In the "Isagoge," which is generally ascribed to Galen, he explains that calculus is due to viscid humours which have been much heated, and the heat acts upon them as on clay, rendering them hard and insoluble. He describes a case of bleeding from the kidney in a patient who fell, and without injuring his spine sustained a rupture of the kidney. After a preliminary hæmaturia the urine ceased to flow, and when a catheter was passed, while the instrument was blood-stained only a little urine escaped, showing that there was obstruction to the ureter and suppression of the excretion. He believed in internal rather than in external treatment, and in the matter coming away by the natural passages. This opinion was held until the eighteenth century, and it hindered also the further development of surgery.

This (he says) may of course cause ulceration and therefore great care must be taken in the healing. If this does not take place rapidly, it becomes serious. The continuation of ulceration is easily recognised. The patient has pain in the kidney, passes matter as from an ulcer, and at the same time little pieces of skin, and then blood appears in the urine.

Haly Abbas,[4] who wrote during the early part of the tenth century, says that old men are more subject to renal calculus, for in them the watery part of the urine passes down to the bladder, while the more solid material is retained in the kidney, and there forms a concretion, with heat of the part and a viscid humour. Rhases, upon the authority of Antyllus, who wrote after Galen and prior to

[1] De Vesicæ Renumque Affectibus.
[2] Sydenham Society of London, 1844, vol. i., p. 553.
[3] De Affect. Renumque de Loc. Affect.
[4] Theor. ix., 34; Pract. vii., 42.

Oribasius (A.D. 360), states that calculi are due either to drinking turbid water or to imperfect digestion.

Aëtius[5] (sixth century) gives a full exposition of the views of the ancient physicians and furnishes very exact details regarding treatment. He shows that abscess of the kidney is very liable to lead to fistula, and that it is difficult or impossible to heal. He indicates some of the causes of bleeding from the kidneys: "According as it arises in those who have lifted a heavy weight, or have jumped vigorously, or fallen from a height, or undergone some other similar violent shock."

During the dark ages the physicians satisfied themselves by learning what the Greek and Arabian authors taught until through time they came to believe that Hippocrates, Galen, Ptolemy, and Aristotle had finally settled all scientific questions and that to doubt their decisions was heresy. Respecting operations on the kidney Galen's teaching was believed in rather than that of Hippocrates or Ruffus, and consequently the surgical treatment of suppurative disease of the kidney dropped into obscurity. Little advance was made in the pathology of renal disease until the seventeenth century, when the practicability of operating upon the kidney again came to be discussed. The subject was approached, however, at that time more from the philosophical than from the scientific standpoint; later, pathological anatomy furnished new means of research.

(To be continued.)

AD TERRAM.

BY SIR FRANCIS SEYMOUR HADEN, F.R.C.S. ENG.

THE EARTH AND THE SOIL.

I HAD hoped, after the record which you were good enough to enable me to make in THE LANCET of May 27th, 1899, p. 1411, of my views as to the competency of the earth, properly treated, to deal effectively and harmlessly with all forms of organic decay returning in the course of nature to its surface, that I should not again have to trouble you on the subject; nor should I be doing so now if continued investigations had not satisfied me that we hold in our own hands a key to other equally great truths which in our engrossing pursuit of the microbe we have allowed to escape us—a key, also, which, if applied with a firmer faith in the ordinary operations of nature than we seem just now disposed to accord them, I would fain hope may one day win us back to those larger methods of Inductive Research which we associate with the name of Bacon, and to which, indeed, we owe, directly or indirectly, nearly every great discovery that we have made our own since his time.

It is, however, not alone to regret our growing tendency to break away, on grounds which I must think wholly speculative, from the surer methods of the Baconian philosophy, that I am again venturing to address you, but rather to invite the attention of the profession to the experiments we are making and the language we are employing to chronicle their results—experiments which, since we are making them not in the earth, but in the soil which covers the earth, do nothing to prove the latter the hotbed of infection which some would have us believe it to be, but rather suggest one of two things—either that we are failing to recognise the real nature of the medium we are employing in our investigations, or, which is even more likely, that we are taking it for granted that the soil and the earth are one and the same thing, whereas, from the point of view of the present article, not only are they not the same thing, but, in all but the equal and independent share which they have in the conversion of effete organic matter into its elements, two essentially different bodies—different in their origin, different in their nature, and different in the parts which they play in the world's economy.

Nor is there, I would respectfully submit, any room to doubt the prevalence of the additional oversight which we are thus making, since evidence of that tendency confronts us at every turn—in our choice of the soil as a medium in which to make our experiments, a medium in which we may, if so minded, cultivate anything from a microbe to a mushroom; in the adoption of a terminology, fast degenerating into a vernacular, which is intelligible only to those of us who are content to live under the exacting dispensation of the microbe; in our lectures, our correspondence, our reports, and even in our text-books, which, one and all so far as I can see, speak of the earth as a sort of composite body which they describe as "the soil," or it may even be, when put to it for a pseudonym, as the "subsoil." Thus, we are in no way surprised when so accurate an observer as Professor G. V. Poore[1] candidly tells us that when he speaks of "earth" he means "humus" (which *is* soil), or when so practical and conscientious an experimentalist as Dr. Klein[2] uses the term "earth" in the same sense as his equally careful fellow-reporter, Dr. A. C. Houston,[3] uses the word "soil"; or finally, since it is useless to recapitulate examples of the same thing, when my courteous critic and mentor, Sir Charles Cameron of Dublin[4] referring to "gravels and boulder clays" (which are *earths*) calls them "soils," and even goes out of his way to emphasise the kindly lesson he is reading me, by a formal record of his belief that "the cleaner the soil we live on the longer we shall live on it." But the soil which I am speaking of is never clean, never has been clean since the globe became populated, and never will be clean till it reverts to the sterility which there is every reason to believe at one time affected it.

The soil, in fact, according to experiments which have been now uninterruptedly carried on at Woodcote for 14 years, and which, though still incomplete on one or two points, I consider fully warrant the crude results I am now giving of them, *is* "soil" in the most ordinary acceptation of the word—organic refuse, that is, animal as well as vegetable, which having lived its life and served its purpose on the outermost confines of the globe has dropped out of existence and, in obedience to a law which neither it nor any other material body is able to resist, is already when we meet with it on its way towards its centre of gravity. Soil, in fact, according to my understanding of it, is *manure*—the very medium in which with so much confidence we are making our experiments—the one great fertilising agent without which the earth would starve, its populations die out, and the atmosphere itself—deprived as it would then be of its means of renewal and consequently without a purpose—not impossibly also cease to exist.

The earth, on the other hand, properly so-called (from my point of view), is the very opposite of all this. While the soil is organic the earth is inorganic. While the soil has its origin on the periphery of the globe, the earth has its origin in its own centre, and its earliest developments in the breaking up and gradual disintegration (by a variety of forces, the nature of which being well understood I need not here dwell upon) of its own primitive rocks, till at last they are reduced to the friable matter which we know as "earth." Again, as to the comparative age of the two bodies; while that of the soil can in no case exceed the age of the animal which produces it, or in the case of vegetables the duration of the seasonal intervals which mark the rotation of crops, the fall of the leaf, and so forth, the age of the earth is measurable only by the countless ages during which we know it to have been in course of formation. And yet, again, separated as the two bodies originally are by a space as great as that which separates the poles from the equator, and approaching each other—as, in a sense, they may be said to do—from opposite ends of the earth, they have, and can have, nothing in common till by a provision of nature (gravitation) they are brought into actual contact; a contact differing in nothing, so far as I can see, from that of any two bodies which, being chemically incompatible, give rise on their admixture to a change of their elements, and it may even be to the creation of a new force—such a force, for instance, as has its analogue in the production of the electric spark by the contact of the opposite poles of the voltaic pile. For the interposition of the microbe in changes and metamorphoses of this kind I must confess that I can see no necessity whatever, or, in fact, for that of any foreign body, saprophytic, bacterial, or otherwise cryptic and gratuitous.

The physical properties of the soil, again, its weight, its

[5] Tetrabiblos.

[1] First Milroy Lecture, THE LANCET, Feb. 25th, 1899, p. 491.

[2] Report (to the Local Government Board, 1898-99) on the Fate of Pathogenic and other Infective Microbes in the Dead and Buried Body (in "earth") pp. 344—360 et passim—372.

[3] Report (to the Local Government Board, 1898-99) on the Inoculation of the Soil with Particular Microbes, p. 413.

[4] The Soil as a Nursery of Pathogenic Organisms, June 3rd, 1899, p. 1374.

volume, and its extraordinary value as a fertilising agent, will, from what has been said of its nature and origin, be readily understood to be measurable only by the whole extent of the earth's surface (which it more or less entirely covers and overlies) and by the amount of organic life, animal as well as vegetable, which is its immediate source of supply. Then, as to its weight and the pressure which it exercises on the earth's surface (as to which I shall have more to say later) it is, of course, that of the atmosphere *plus* its own density and the weight represented by the pressure which it exercises on the earth's surface as the effect of gravitation. It is, however, its vast extent, its kind, and the irregularity of its distribution which, for the purposes of this communication, chiefly concern us

Experiments made in the laboratory have, meanwhile, told us nothing on these points, and herein must be my apology for the nonconformity of my views with those of the eminent men who—taking the microbe for granted and making it the basis of their inquiries—have been generally received as authorities on that part of the subject; the difference between us, however, depending, I think, mainly on the fact that while their investigations have for the most part been founded on experiments made within doors, and on the strength of pre-arranged lines of inquiry, mine have been made wholly out of doors and on lines suggested simply by what I have met with and seen there during a continuous succession of observations which have engaged much of my attention for 25 years and pretty nearly the whole of it for the last 14 years.

So much for a theory merely in outline and as yet with such proofs only of its stability as may reasonably be read between the lines of the present communication. Nothing will be easier than, at the proper time, to multiply such proofs, at all events to the extent of largely extending and strengthening the ground on which that stability rests. On the other hand, points have yet to be cleared up which, though by no means obscure, require time for their elucidation, and which make me unwilling to go to print with them till I have had that time at my disposal. A single example of such points will suffice to explain this indisposition on my part. Though I have long been aware that nitrification is a more rapid process than I once believed it to be, I had no idea till lately how much more rapid a process it really is; nor, though I have now no doubt of the fact, have I yet been able to arrive at anything like its exact measure.

Again, though I have been making my graves under various conditions as to depth and the contiguity of their contents with the earth enclosing them—beginning with a depth of four feet, as that prescribed by the Local Government Board, and ending by simply laying the body on the ground and covering it over with a single foot of earth—my examinations of the whole of these graves have only been made once a year and the results of such examinations only recorded in print once a year; I now know that if I had examined them every half-year I should have found, I will not say the same astonishing results, but evidence of a far more rapid progress towards a return of the body to its elements than I had then believed possible, as well as arrived at a more exact knowledge of the rate and kind of change undergone by the body in the interval.

The solution of such a moot point is, of course, of the highest practical importance, and I am led by it to the conclusion that, rather than present such a point in an imperfect form, I shall do well to let the present paper go to press as it is and return to it later.

THE NEW OPERATING THEATRE FOR THE ROYAL INFIRMARY, PRESTON.—The new theatre which by the generosity of Dr. R. C. Brown, of Preston, has just been completed and equipped at a total cost of £2654 is in many respects a model building. It is situated in the centre of the infirmary blocks and is built of iron, glass, and tiles. Every precaution has been taken to dispense with corners and angles and the building is so constructed that it can be effectively cleansed with a hose. It is surmounted by a double roof in order that an equable temperature may be obtained at all seasons of the year. The theatre is well lighted by electric light and there is a specially large north window eight feet wide and six feet high. Nothing that could be done has been left undone to make the new operating theatre, of which Preston must be proud, as perfect as possible from every point of view, and the inhabitants of that town owe a deep debt of gratitude to Dr. Brown.

THE ROYAL COMMISSION ON SOUTH AFRICAN HOSPITALS.

(Continued from p. 575.)

II.

PART III. of the Commissioners' report is taken up with a detailed investigation of the various complaints made as to the care of the sick and wounded during the campaign and the conclusions arrived at in respect of such complaints. The subject is studied in the following order as regards the care taken and the various complaints which have arisen, Natal and all places not in Cape Colony, the Orange River Colony, or the Transvaal being excluded from consideration here.

(A) At the front, including some places which are conveniently dealt with under this head, such as Kimberley, Modder River, Driefontein or Abram's Kraal, Bloemfontein, Kroonstad, Johannesberg, and Pretoria; (B) in the conveyance of patients to and from fixed hospitals on the lines of communication and at the base; (C) at the hospitals on the lines of communication; and (D) at the hospitals at the base, including the hospital transport ships. .....

A.—AT THE FRONT.

The details of this class group themselves and can be best dealt with under the following heads:—(1) the advance of Lord Methuen to the relief of Kimberley; (2) the advance of Lord Roberts to Kimberley and to Bloemfontein; (3) Bloemfontein during Lord Roberts's stay there before his subsequent advance and afterwards; (4) the advance from Bloemfontein to Kroonstad; (5) Kroonstad; (6) Johannesberg and the advance from Kroonstad; (7) Pretoria; and (8) concluding remarks as to the care of the sick and wounded at the front. Outside these groups there are but few matters relating to the condition of affairs at the front which require attention beyond our general observations in Part II., and so far as these few matters appear to us to need special mention we have dealt with them at the end.

The present article only deals with the first three sections of sub heading A, the hospital question being, as all our readers know, particularly acute at Kimberley.

METHUEN'S ADVANCE TO KIMBERLEY.

With regard to A (1) the Commissioners say that Lord Methuen began his advance to Kimberley on Nov. 22nd, 1899. Between this date and Dec. 11th there were four severe engagements, ending with the disastrous one at Magersfontein, all of which were productive of many wounded. Lord Methuen's force, according to the evidence of Surgeon-General Wilson, was accompanied by the full complement of bearer companies and field hospitals, each with a complete equipment, and before the advance Surgeon-General Wilson was told by the chief of the staff that the advance was only for the relief of Kimberley, which being accomplished the force would immediately return to its base. After the battle of Belmont, however, the principal medical officer, recognising the serious state of matters, telegraphed for some of the staff of No. 3 General Hospital and got up tents and equipment. No. 3 Stationary Hospital was sent up to De Aar and after Magersfontein two hospitals of the nature of stationary hospitals were established at Orange river and Modder river. These hospitals, which were more on the scale of field hospitals, were for a short time insufficiently supplied with certain articles such as bed-pans, and there was a shortage of orderlies. The hospital trains, however, soon took the wounded down to Cape Town, so that there was never any considerable degree of pressure. The army remained at Magersfontein for two months—namely, from Dec. 11th, 1899, to Feb. 11th, 1900.

ROBERTS'S ADVANCE TO KIMBERLEY AND BLOEMFONTEIN.

Lord Roberts left Ramdam on Feb. 12th, 1900, and Kimberley was relieved on Feb. 15th. Cronje's flight and eventual surrender at Paardeberg took up the time from Feb. 16th to Feb. 27th. The advance to Bloemfontein commenced on March 6th and after fighting at Poplar Grove and Driefontein Bloemfontein was reached on March 13th. What happened during the advance from a medical point of view was as follows:—

When the advance of Lord Roberts's force for the relief of Kimberley was contemplated it was obvious that success depended on the mobility of the column of relief, and in order to ensure mobility the transport had to be reduced to a minimum. The force was very deficient in mules and forage. The ordinary allowance for moving a division is 1666 mules and 416 oxen, whereas all the transport animals available for this column during its advance at this time were 946 mules and no oxen, and only four days' forage was available for the horses, mules, and oxen for the force. Sufficient forage even for the cavalry and mounted infantry could only be obtained by reducing the daily allowance from 12 lb. to 8 lb., and of course the force had to provide for

carrying food and ammunition for the column as the line of communication was threatened. Food and ammunition were of necessity the first things that had to be considered. A minimum of 12 days' food for the army alone could be collected and carried. Under these circumstances the military authorities had to take steps to cut down the ordinary transport of the column and they found it necessary to do so rigorously, even to the extent of leaving the ordinary baggage of the column behind at Modder river and the men had to advance without any change of clothing. Amongst other transport to be cut down was that of the bearer companies and field hospitals. Accordingly the ambulances for the bearer companies were cut down from 10 to two and the transport wagons for the field hospitals were cut down from four to two, a water-cart being added because of the difficulty of obtaining water during the march. The order under which this was done is dated Jan. 29th, 1900, and is set forth in the Appendix (*vide* Appendix—*Bedford* 4). As the wagons to the field hospitals had to carry all the tents, blankets, waterproofs, buckets, &c., as well as the medical and surgical necessaries, the effect of this order upon the condition of the field hospitals was of course serious, though no doubt the two wagons left with each field hospital were loaded up to their utmost capacity by essentials, and tents and heavy materials of secondary importance were the items which were chiefly left behind, the evidence showing that requisites—such as drugs, dressings, splints, &c.—were taken in very nearly sufficient quantities. We have also already pointed out that the unit allowance of field hospitals had been greatly reduced—namely, from nine or 10 to six per army corps. The three infantry divisions engaged in the operations in the advance on Bloemfontein—namely, the 6th, under General Kelly-Kenny; the 7th, under General Tucker; and the 9th, under General Colville—were each supplied with the brigade field hospital alone, the divisional field hospital in each case not being available. In the operations at present under consideration the sick and wounded were, therefore, through the absence of the divisional field hospitals in three infantry divisions, deprived of the services of 12 medical officers, three quartermasters, and 105 men, and also of the field hospital equipment necessary for the treatment of 300 patients.

Even the *personnel* of the bearer companies and of the field hospitals was not maintained at its full strength during the advance, inasmuch as a few officers and men had to be left at Kimberley and at Jacobsdal.

Surgeon-General Wilson, when the advance to Kimberley was contemplated, was consulted as to the cutting down of the transport. When the matter was broached to him he said that he could not carry out the medical arrangements for the advance with less than the minimum of transport allowed by the army regulations, but afterwards, when the position of affairs was explained to him, he recognised the military necessity and accepted the decision of the Commander-in-Chief, as, indeed, he was bound in duty to do.

It follows that the advance had to be undertaken with the ordinary provisions for the sick and wounded gravely reduced. Nothing but military necessities would have justified the reduction. It is not for us to question the decision of the military authorities, but we may say that we are convinced that the necessities justified the step taken by them and that the suffering thereby occasioned was part of the price that had to be paid for success in the campaign. When the advance to Kimberley was commenced, it was, of course, not known for certain by the military authorities what might follow. It was considered as most probable that after Kimberley was relieved the column would be again in touch with the railway, and that the railway could be used for conveying the sick and wounded to the stationary and base hospitals. But the unexpected movement of General Cronje's army, and its pursuit, changed the nature of the campaign. The British army had to pursue, and then followed the remarkable advance which resulted in the surrender of Cronje's force at Paardeberg, and the advance to and capture of Bloemfontein. That advance had to be made under the conditions as to field hospitals, bearer companies, and transport already indicated. The transport originally allotted to the field hospitals and the allowance of ambulances to the bearer companies could not be increased during the advance, for, owing to a convoy being attacked by the enemy, the advancing army lost three days' supply of food. As it was not known where the army might ultimately have to go, or, if it went to Bloemfontein when that place would be reached, all available transport had to be utilised for the purpose of bringing up food and ammunition to the army. When Paardeberg was reached, communications were opened with Kimberley, and in that way sufficient food was obtained for the army to allow half rations being given to the troops. Up to Paardeberg the only way of dealing with the sick and wounded was by sending them back by ox-wagons which had been emptied of food, to Modder river or Kimberley. These wagons are of necessity rough, and the suffering occasioned by the journey in them over the veldt to many of the patients must have been severe, especially on cold nights, as the men were in their summer clothing with no change, and but few extra blankets could be obtained.

The stationary hospital at Modder river was only intended to act as a base hospital for the advance to Kimberley, but as a matter of fact, owing to the unexpected movement of General Cronje it became one of two base hospitals employed in the first part of the advance on Bloemfontein. Kimberley was used as the second base hospital for this advance. During this time it is admitted that a general hospital at Orange river would have relieved the strain considerably.

Major Bedford, with regard to this advance, says: "The work was done under considerable pressure and we should have been glad to have had more help; but it was not more pressure than one expects on a campaign. We should have been much more comfortable if we could have had a general hospital at Orange river."

The reasons given for failing to plant a general hospital at this point are two: (1) it was not known to the Surgeon-General that the western line—that is, the De Aar to Kimberley line—would be occupied for so long a period, or that it would assume such importance in this part of the campaign; and (2) when the troops left Ramdam the immediate objective was Kimberley and the advance to Bloemfontein which followed was unexpected.

At Paardeberg there were many wounded. For 11 days, from the 17th to the 27th February, the troops occupied a position on both sides of the Modder river in the neighbourhood, and the chief casualties occurred on the 18th February, when an attempt was made to force Cronje's position from all sides. The field hospitals were placed along the bank of the river on sloping ground on which there were some trees which afforded a certain degree of shelter from the sun. There were no houses in the neighbourhood which could be used for the reception of the wounded, and in addition to the tents there was only one stable which was available for this purpose.

Owing to the cutting down of the transport the tents were greatly reduced in number and the wounded were much in excess of the accommodation they afforded. Large numbers had to lie in the open air under the shelter of the trees. This was more particularly the case on Sunday, 18th February, when over 800 patients were brought in as a result of the action on that day. Fortunately the nights were warm, although undoubtedly much discomfort was caused by two or three wet days. Everything possible, however, was done to obviate this difficulty, and Mr. Kendal Franks in his evidence states that the engineers endeavoured to improvise shelters for the wounded men by means of branches covered by rushes.

Very important in connexion with this is the statement of Mr. Watson Cheyne. He says: "I do not think that the fact of the patients being in the open affected them a bit," and again, "I think the hardship at Paardeberg was of very little consequence." Some evidence rather conflicting with this view was given by Major Barrett-Lennard, a volunteer officer attached to the Army Service Corps. But his evidence is opposed to the evidence of several witnesses, and is, on the whole, we think, exaggerated. Still, it cannot be doubted that the treatment of the sick and wounded was carried on at Paardeberg under very great strain. Short in regard to *personnel*, short also in appliances and equipment, the powers of the Royal Army Medical Corps were taxed to the utmost. Mr. Watson Cheyne states he had a difficulty in obtaining water which had been sterilised by boiling for the operations he had to perform owing to a deficiency in kettles, and further, that he was somewhat short of dressings. This difficulty arose from the cutting down of the transport, but it was soon relieved by getting what was necessary from the stores at Modder river. Notwithstanding the pressure at Paardeberg the arrangements which were made for the comfort of the sick and wounded appear to have been satisfactory. The Rev. J. Blackbourne, an army chaplain, speaks in the highest terms of the services rendered by the medical men, and one interesting incident which he narrates (*vide* Minutes of Evidence, question 7279) renders it evident that the same treatment was given to everyone, both officers and men, irrespective of rank. Mr. Hands, the correspondent of the *Daily Mail*, likewise bears testimony to the attention which was paid to the sick and wounded. He says: "At Paardeberg I saw a good deal of the hospital arrangements because the main hospital camp lay between the head quarters, where I had often to go, and my own camp"; and he goes on to state that "the arrangements and everything were excellent ..... the men seemed to be most comfortable in their tents and quite satisfied with the arrangements."

In addition to the large number of wounded who had to be taken care of at Paardeberg, considerable sickness was developed there, partly due to the hardships of the campaign and partly to the bad water which was drunk by the troops. The sick and wounded men could not be kept at Paardeberg, for there were no tents or proper accommodation for them there, and, moreover, they could not have been supplied there, especially as the enemy were threatening the position. They had, therefore, to be sent down to Kimberley or the Modder river. The evacuation of the field hospitals to these places had to be effected rapidly.

To effect this convoys left every day and had to go a distance of about 25 miles to Kimberley or to the Modder river. Kimberley had the advantage of being able to afford house accommodation to the wounded, but this was counterbalanced by the fact that as the line of communication with the Cape was at that time broken by the destruction of the bridge over the Modder river the ambulance train could not reach it and the patients who were sent there had to remain. Ambulances for the transport of the wounded from Paardeberg were not available, the ox-wagons which were employed being those that had brought up food and other stores from the Modder river and which would otherwise have returned empty. It was during the journey of these convoys over the veldt that the hardships borne by our sick and wounded soldiers were chiefly manifest, and Mr. Watson Cheyne stated he thought that some patients had died as the result of the journey. Sad as this is, there can be no doubt that the evacuation of the hospitals was a military necessity. A stationary hospital could not have been established at Paardeberg because, as already pointed out, when the army moved on the hospital would have been left exposed to the enemy, who would in all probability have looted its stores. Every provision that was possible appears to have been made to lighten the sufferings of those carried by these convoys. Except in a few instances the convoys were accompanied by a medical officer and by orderlies. Those going to Modder river stopped at the guards' field hospital at Klip Drift. They were there fed, and their wounds dressed. The convoys passing through Jacobsdal were attended to there, the wounded men had their wounds dressed, and all had medical comforts administered to them, the worst cases being detained at Jacobsdal and attended to at the German Hospital there. Occasionally, owing to the deficiencies of staff, some of these convoys not conveying the more severe cases had to go unaccompanied by a doctor or by trained orderlies. In these cases the necessary food and medical comforts were put in charge of some responsible non-commissioned officer. We should perhaps add that at Paardeberg the difficulties of the medical authorities were increased owing to the British having to take over the care of the Boer sick and wounded, extra labour being thus cast upon the already diminished staff and field hospital equipment. It was probably owing to this that for two or three days there were insufficient dressings for some of the wounded.

KIMBERLEY AND MODDER RIVER.

As will be seen from the above statements, the pressure on the hospitals at Kimberley and Modder river after Paardeberg was very great. In one day there arrived at Kimberley 523 patients, and at Modder river also in one day 779.

DRIEFONTEIN OR ABRAM'S KRAAL.

At Driefontein there were 361 wounded, some of whom had to be left on the field all night, though this must not be taken to mean that they were unattended. Owing to lack of transport it was impossible to take the wounded along with

the army, and a hospital had to be established at Driefontein. The hospital consisted of two houses and some tents. There was no want of necessaries for the patients, and they were transferred to Bloemfontein about March 23rd.

BLOEMFONTEIN.

Bloemfontein was occupied on March 13th, the force bringing with it between 200 and 300 patients. Some 10 days after the sick and wounded arrived from Driefontein, being about 400 in number. Enteric fever broke out with startling suddenness and a very larger number of men were attacked. Three general hospitals, the Irish Hospital, and No. 5 Stationary Hospital had been got ready to be moved up as soon as the advance to Bloemfontein was determined upon. But owing to the cutting of the railway and the lack of transport the three general hospitals did not all arrive until April 29th. The Langman, the Portland, and the Irish Hospitals also arrived in April, from April 2nd to April 12th. No. 5 Stationary Hospital arrived on March 28th. Thus the field hospitals had for some time to be used as if they were and had been properly equipped as fixed hospitals, and the rest of the hospital accommodation consisted of sundry buildings in the town. There was undoubtedly for a time a deficiency in both equipment and staff.

Condition of the Town after the Advance to Kroonstad.

In the beginning of May the army began its advance from Bloemfontein towards Kroonstad. The field hospitals had then to be cleared in order to accompany the troops and their patients had to be discharged, principally into the general hospitals. As the advance continued the sick and wounded of the force were sent back to Bloemfontein, with the result that throughout May there was great overcrowding, especially in General Hospitals Nos. 8 and 9, into which practically all the patients were poured who could not be taken into the buildings or private hospitals. The private hospitals only took a comparatively small increase over the numbers for which they had been originally equipped. The effects of this influx upon Nos. 8 and 9 General Hospitals will appear when we come to deal more particularly with those hospitals, as we do later on. There were also during April, and still more during May, undoubted deficiencies of bedsteads, mattresses, commodes, bed-pans, feeding-cups, and such-like utensils, and there was a lack of hospital clothing for the patients, at any rate in the early part of May. Further, there was an insufficient number of Royal Army Medical Corps surgeons, trained orderlies, and nurses. The principal medical officer, Surgeon-General Wilson, appears to have had available in South Africa some civil surgeons to assist in the treatment of the sick and wounded; but, as already pointed out, it was not practicable to use them except to supplement the surgeons of the Royal Army Medical Corps and in hospitals in which the latter formed a substantially large part of the staff.

In June the condition of things greatly improved. The authorities were in a position to send down patients who were able to bear the journey to the hospitals on the lines of communication and at the base, and by the time this Commission arrived at the town the accommodation for the sick and wounded was more than sufficient and the patients were in every respect being well cared for.

Difficulties of Dealing with the Sick and Wounded.

Before dealing in detail with the condition of the hospital at Bloemfontein at the times when complaints have been made with regard to them, it is right that we should point out the difficulties which were in the way of the authorities in dealing with the sick and wounded in the town owing to military exigencies and the impracticability of getting sufficient hospital equipment and necessaries up from the lines of communication and the base. These difficulties are clearly set forth in the evidence given before us by the principal military authorities, and in particular in that of Lord Roberts.

On his arrival in the town Lord Roberts found himself cut off for a time entirely from his base. He had with him very little supply for his army. He had hoped to get trucks up from Naauwpoort by rail, but up to the 28th March, owing to bridges being broken, no truck could cross the Orange river, so that he was unable to obtain any supply of food for the troops except a little which he commandeered between Bloemfontein and Norval's Pont and carried into Bloemfontein by ox-wagons. The first railway truck did not arrive until the 29th March, and until then nothing could be got by rail. The food for the army at Bloemfontein alone required 40 trucks a day. Between the 29th March and the 7th April Lord Roberts was only able to obtain 286 truck-loads, and between the 8th April and the 17th inclusive only 503 truck-loads, a shortage for the month which prevented even full and sufficient food being obtained for the army. Between the 29th March and the 17th April the army at Bloemfontein had never more than one day's reserve of food accumulated, though a reserve of food was urgently necessary for a speedy advance towards Pretoria.

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The care of the sick and wounded was not disregarded by the military authorities, and (speaking generally) so far as it was possible under the circumstances they transported up to the town what was required for the patients. Throughout the period of difficulty the officers of the Royal Army Medical Corps did their best to urge upon the military the necessities of their patients and the importance of providing for them, and by the 17th April there were brought up by rail into the town 62 truck-loads of hospital and medical stores and comforts and 461 truck-loads of ordnance, mostly for the sick.

We think it right to state here that the condition of things in the town in the early days would have been much worse than it was had not the railway and military authorities done such extraordinarily good work with their single line—work which stands out as especially good when it is considered how hampered they were by broken bridges and culverts, and breaks in the lines of communication made by the enemy. This is made apparent by the following short statement of material, &c., sent up to Springfontein and Bloemfontein by rail between the time of the opening of the railway to Bloemfontein on the 29th March, and Lord Roberts's advance towards Kroonstad about the 3rd May (*vide* Appendix—*Nathan*):—Truck-loads: 3684 supplies, 861 ordnance, 1138 horses, 842 troops, 118 hospital and medical traffic, 487 military wagons, 445 coal for railway, 100 ammunition, 45 railway and telegraph material, 351 baggage, 841 livestock, 87 general, 140 various, and 159 ambulance coaches; or 9298 truck-loads and ambulance coaches in all. It was owing to this good work, and only by great effort, that by the 3rd May a reserve of 45 days' food and sufficient equipment were obtained to enable the army to advance.

Notwithstanding the difficulties of transport, doctors and nurses were sent up by the authorities to Bloemfontein, but not, in the early days, as many as were required. Nurses started for the front as soon as the railway officials notified that they could safely cross the Orange river. On the 18th March a telegram was transmitted from Bloemfontein to the principal medical officer at Cape Town for 30 nurses. This was promptly attended to, for 20 left on the 19th, and 12 a few days afterwards. These were sent up even before the railway was opened and only reached Bloemfontein with considerable difficulty. By the end of March 56 nurses altogether were at work in the various buildings, 24 having been obtained locally, and the number was still further increased in April, when the principal medical officer was informed by telegram from Bloemfontein that more nurses must not be sent up for some time as there was then no more accommodation for them available. By the end of April there were 123 nurses altogether at Bloemfontein (*vide* Appendix—*Bedford* 5).

The Condition of the Hospitals at Bloemfontein.

The report goes on to consider in detail the condition of the hospitals during the periods when causes of complaint existed. The field hospitals are dealt with first and especially that of the 12th Brigade. The first half of this hospital arrived well equipped on April 4th with accommodation for 50 patients. On May 4th the other half arrived. On its arrival on April 4th the hospital had 15 double circular tents and five single tents and it took over from the 18th Brigade field hospital with their sick and wounded—

seven single tents and 22 double circular tents, the latter including one bearer company marquee. On the 26th April two more marquees were added. Being a field hospital, in its ordinary tents it had, as usual, no beds, mattresses, or change of clothing, and but few stretchers, and nurses were of course not employed. Although this condition of things was normal, it is difficult to understand, seeing the length of time that this particular field hospital was detained at Bloemfontein, and that it was used to a certain extent as if it were a fixed hospital, why beds and stuffed mattresses could not be procured or extemporised for use in the tents. As already mentioned, this hospital soon became overcrowded, and the doctors attending were too few to properly cope with the number of patients, and were overworked. In the marquees, matters were somewhat better. It was contemplated that no severe cases should be allowed to remain in the bell-tents, but that they should be moved into the hospital buildings in the town, or into the marquees. But owing, as time went on, to the large increase of sick and wounded, in some instances even severe cases had to be and were left in the bell-tents, inasmuch as room could not be obtained for them elsewhere. Some patients passed through the whole course of their illness in these tents, but such cases were neither numerous nor very severe in type. As there has been some dispute with regard to the exact numbers treated in this hospital, we may state that according to Colonel Gubbins's evidence and return (*vide* Appendix—*Gubbins* 2), the maximum number was 455, of which 247 were enteric fever cases. This maximum number was reached on the 18th May. It must, however, be remembered, in considering these figures, that this hospital received all kinds of cases. Soldiers not capable of performing their duties at the front, though not severely ill, were taken in, and a large proportion of the patients in the bell-tents, probably about half, were quite able to look after themselves.

In the distribution of the patients in the tents and marquees, a classification according to the nature of the disease, and as between the wounded and sick, was to a certain extent carried out, but this classification was not perfect. Some bell-tents had six patients in them, and perhaps occasionally more, but not, we think, severe cases. With very few exceptions there would not be more than four enteric fever patients in one bell-tent. For some days the number of trained orderlies was wholly insufficient, and it was probably owing to this that one or perhaps two cases occurred at this hospital of men wandering away during the night. During April, when the largest number of patients treated in the hospital at one time appears to have been about 320, there was a staff of three surgeons and 48 orderlies. Of these orderlies 15 were of the Royal Army Medical Corps, 11 men of bearer companies, 10 of the Cape Bearer Company, and 12 ordinary regimental orderlies. Those of the bearer company, as well as of the Royal Army Medical Corps, were trained men. On the arrival of the second half of the hospital on the 4th May two more doctors were added to the staff. In the bell-tents, owing to the want of change of clothing and the other circumstances to which we have called attention, men brought into the hospital in their khaki had to lie in it without change, and of course could not, and did not, have their bodies properly washed. Mrs. Franklin, an inhabitant of the town, says in her evidence that she offered pyjamas to a field hospital to enable the men to have a change of clothing, but that the offer was refused on the ground that the men in the bell-tents could not, without risk, be stripped of their clothing. But she could not name the particular field hospital to which she referred, and it is therefore not clearly identified with that which we are now dealing with. Dr. Wm. C. Scholtz of the Langman Hospital in his evidence also gives an instance where a proffered gift of pyjamas and other articles was, in the beginning of May, refused by the medical officer of a field hospital (apparently that of the 12th Brigade) on the ground that there was already a sufficiency of the articles in the hospital (*vide* Minutes of Evidence—Questions 5379, 5380). There was a deficiency of bed-pans and night commodes, both in the bell-tents and in the marquees. The effect of this deficiency would undoubtedly be prejudicial to the treatment of severe enteric and dysenteric fever cases and the cause of discomfort to many patients.

There was much conflicting evidence as to the condition of the bell-tents after rain. On the whole, we come to the condition that though

after heavy rain there was some damp in some of the tents, the tents inside could not fairly be called wet, and the men inside could not properly be described as lying in the mud. There were not many days on which it rained in Bloemfontein during the period we are now considering, but when the rain did come the downfall was heavy. However, we do not think the dampness to which we have referred caused any material suffering or annoyance to the patients. A few of them may have been for two or three days in some of the bell-tents without sufficient blankets, but with these exceptions the men had a proper supply of blankets and waterproofs.

This hospital suffered, in common with all others in Bloemfontein, from a deficient supply of fresh milk, but we think the resultant ill effects have been much exaggerated. It is true that a few patients do not like tinned milk, especially if sweetened, but the majority are perfectly satisfied with tinned or preserved milk if it be of good quality, and that supplied to the troops in South Africa generally came within that category. Some of the patients who complained of condensed milk only did so after they were told that it was not fresh milk, not having noticed the difference before. So far as concerns the health of the patients, in a country like South Africa, where fresh milk was so liable to turn sour before it could be got to the patient and to contamination before it reached the hospitals, the patients who had the condensed milk did not suffer in contrast with those who received the fresh. As a matter of fact, the enteric fever patients in No. 9 General Hospital who for some time were fed almost exclusively on the former did as well as those who received the latter. Opinions, however, may differ as to the relative advantages, even in South Africa, of fresh and condensed milk, and no doubt, as a rule, it is advisable that the first-mentioned should be used where it can be obtained of good quality. In the field hospital we are now considering, the bad cases of enteric fever appear, generally speaking, to have obtained a sufficient allowance of it. With regard to medicines, medical and surgical appliances, stimulants, and food, there was, practically speaking, no deficiency.

As appears from the above summary of the condition of things, this hospital was in many respects unsatisfactory, but the results upon the patients were not so bad as might have been anticipated. The deaths up to the 4th May have been ascertained to have amounted to only 4 per cent. of the total number of patients received, and up to that time there were only four deaths in the bell-tents altogether, of which but one resulted from enteric fever, the immediate cause being sudden perforation.

Before passing from this hospital, we should perhaps refer to a suggestion that four men died in consequence of being improperly removed to the Portland Hospital. We have investigated this, and believe it to be unfounded.

Other field hospitals.—**With regard to the other field hospitals their condition was similar to but rather better than that of the 12th Brigade.**

No. 8 General Hospital.—**With regard to this hospital the Commissioners say that in its early days it was in an unsatisfactory condition. Between May 2nd and 3rd nearly 500 patients arrived. The hospital was soon overcrowded and always understaffed, and in the opinion of the Commissioners there was "some want shown of energy and of proper administrative and organising power on the part of the principal officers." Further, friction arose between the civil surgeons and the members of the Royal Army Medical Corps, and even between the senior members of the Royal Army Medical Corps themselves. To the Commission it is a matter for surprise that more vigorous steps were not taken by Surgeon-General Stevenson and by Colonel Exham to put an end to a condition of affairs which could only result in disorganisation. The report proceeds:—**

Referring again to the overcrowding of this hospital, we may point out how great it was, especially in May. Originally the equipment was, as is usual in hospitals of the kind, for 520 beds. It subsequently got some further equipment, but not sufficient for the large number of patients it had to deal with. During the whole of May there was an average of 1200 patients in the hospital, and on one day the number reached was 1398 men and 21 officers. The doctors and orderlies were too few in number to properly cope with such a condition of things, and matters were made worse by their not being properly looked after and supervised. The deficiency of orderlies was increased by sickness amongst them. Doctors and orderlies alike were all overworked and, possibly as a result of this overwork, some of the orderlies appear to have been inattentive, and a few cases of drunkenness occurred amongst them. For some weeks the orderlies were kept working 36 hours out of 48. Again, the supply of nurses for some time was very insufficient. For several days after the hospital started it had only three nurses fit for active duty. Then some more joined, but a few of these were ill, and the numbers were not large; in fact, there were not sufficient nurses until quite the end of May. This scarcity of nurses does not appear to have been the fault of the head medical authorities at Bloemfontein, for Lieutenant-Colonel Beamish, the principal medical officer of this hospital, says in his evidence that he, generally speaking, got all the nurses he asked for (*vide* Minutes of Evidence—Question 8297). A few of the nurses in this hospital were themselves not wholly satisfactory.

There was also a deficiency until the beginning of June of many important things, such as hospital clothing and bed utensils, and there appears to us to have been a want of energy shown in doing anything towards improvising temporary utensils, or taking steps to remedy the defects caused by the absence of proper commodes and bed-pans. The lack of bed utensils, of course, had the usual effect upon the patients' health and comfort, and on account of the deficiency of hospital clothing patients were compelled to lie in their khaki without change, and without being properly and thoroughly washed. We find complaints accordingly with regard to this hospital, which we think in some cases were well-founded, that men were not properly nursed, that typhoid patients, though probably not of a severe type, had in some instances to wash and tend themselves, that night-stools were not properly emptied, and beds not always kept as clean as they might have been. The linen used has been the subject of some complaint, for it appears that in this hospital the washing was not properly done, although at that time the other hospitals in the town succeeded in getting their washing properly attended to. The want of proper management of the hospital was further shown by the delays that occurred in making a thoroughly proper selection of the cases for the purpose of distribution amongst the tents. The charge was also made that for some time the latrines were not properly covered up, and that evil smells resulted therefrom. There was also considerable delay at times in serving the patients with their food. The cook, Corporal H. Sheridan, says that this arose partly on account of the difficulty experienced in getting good water in sufficient quantities, and partly because the hospital was deficient in its supply of cooking utensils and of assistant cooks. In this connexion it should be remembered that the hospital kitchen was of the ordinary camp type and therefore liable to be interfered with by the weather and was originally intended for the supply of only 520 patients. The patients in the marquees did not suffer so much from the state of things above indicated as those in the bell-tents, their main wants being in respect of bed-pans and night commodes. Some complaints were also made as to there being at times a deficiency of blankets in this hospital. Undoubtedly there was a shortage under this head in some of the bell-tents for a few days on the arrival of large convoys; otherwise we do not think the patients suffered from lack of either blankets or waterproofs. As regards the patients in the bell-tents arriving without a proper supply of blankets it is difficult to understand why they were not at once furnished with more blankets. For, though the evidence is somewhat conflicting on the point, we come to the conclusion that there was at all times in this hospital a sufficient store of blankets, and beyond all question there was a sufficient supply in the principal headquarters' stores in Bloemfontein. We think that the fact of there being in the cases we have indicated a deficient supply (though only for a few days) for some of the patients arriving is explained by the want of arrangement in the hospital. Those who noticed the deficiency do not appear to have known to whom to apply to get the blankets that were in store.

As an instance of the lack of organisation we may mention that when deficiencies were noticed some officers seemed not to know to whom to apply. We have also to note that properly qualified officers of this hospital did not attend to meet the large convoys arriving.

Amongst other results we find complaints that some patients, who ought not to have been allowed to do so, had to walk from the place where they arrived in the hospital to the tents into which they were to be received. No doubt Lieutenant-Colonel Beamish, the principal medical officer, owing to the crowded state of his hospital had many things to attend to and great difficulties to meet with, and this probably accounts for the fact that he was so seldom seen in the tents of the hospital or amongst the patients.

On the other hand, we have to state, as complaint was made about it, that in our opinion the site of the hospital was a good one, and further, in favour of this hospital, we must add that considering the circumstances the mortality in it was comparatively small, as will to a certain extent be apparent from the following short list collected from Lieutenant-Colonel Beamish's return (*vide* Appendix—*Beamish*):—

Dates.	Average daily number of patients.	Total number of deaths during the period covered.
23rd April to 30th April, inclusive...	188	5
May	1198	121
June	866	66
July	641	18
August	526	6

From April to the end of August 234 wounded soldiers were treated in this hospital without the loss of a single case.

No. 9 General Hospital.—**The condition of things in this hospital was similar to that existing in No. 8 General Hospital, although with the exception of its first principal medical officer it had upon the whole an excellent staff, the members of which worked well together throughout. Owing to its being near the railway station it was often greatly overcrowded, as it had to be used as a receiving station for cases brought down from the front. Many of the orderlies were untrained and several were rough and inattentive at night. The milk-supply was deficient as in No. 8 and at times there was a scarcity of rugs and blankets. The average daily number of patients was: in May, 1276; in June, 860; in July, 502; and for the first six days of August, 399. The total number of deaths was, from April 19th to the end of September, 279, which the Commissioners consider very small under the circumstances. Concerning the milk the report says:—**

With regard to one statement in particular concerning the milk an erroneous impression about it might be gathered from some of the evidence unless the true facts be stated. One witness spoke about the condensed milk being mixed in baths, as if no care was taken and as if the product was likely to be contaminated or affected. As a matter of fact we have seen these so-called baths. They are tin utensils called ablution tins and quite suitable for the purpose of mixing condensed milk with water and have been kept solely for that purpose, and the milk has been properly and efficiently mixed in them, the water used being good.

Private hospitals.—These were well managed and the Commissioners say but little about them. The Portland Hospital was not flooded nor was the Langman Hospital overcrowded.

Hospitals in the buildings.—With regard to these the Commissioners found but little to complain of. There was at first a deficiency of mattresses and the complaints made as to the Raadzaal Hospital that there was no proper separation of the wounded and those suffering from enteric fever and that convalescents were sent away under circumstances in which they should not have been allowed to depart are considered to have been not established.

CAUSES OF THE DEFECTS IN HOSPITAL ADMINISTRATION ON THE ADVANCE.

Generally speaking, the causes of the defects were mainly two: difficulties of transport and the extent, suddenness, and virulence of the enteric fever epidemic which, however, could not have been foreseen. It was mainly due to the conditions existing at and after Paardeberg. As to delays in bringing up hospitals the report points out that they were got up as soon as they could be. The *personnel* of No. 9 General Hospital was sent up before the equipment and was not idle before the hospital opened as Mr. Burdett-Coutts thought.

Delay in bringing up staff.—On this point the Commissioners say:—

In the beginning of April Surgeon-General Wilson, seeing the condition of things in South Africa, telegraphed to England for four more general hospitals and for more civil surgeons, and on arriving at Bloemfontein on the 23rd April, seeing the position of affairs there then, he sought for and obtained more doctors and nurses in South Africa itself. But these steps came rather late. We think the deficiencies of the staff at Bloemfontein were not thoroughly realised as soon as they might have been and that more doctors might have been obtained and sent up so as to supply these deficiencies earlier. We cannot think that the difficulties of transport, which we are fully aware of, could have prevented doctors being obtained and sent into the town. The lack of sufficient nurses gives rise to similar comments. And with regard to the point that at one time there was no sufficient accommodation for more nurses, it appears to us that though under the circumstances it was right on the part of the authorities not to convert the hotels into hospitals, yet one or more of the hotels might have been employed to afford accommodation for nurses.

As to the deficiency of orderlies, all we can say is that what were really required were properly trained orderlies. These were not forthcoming, and we think the medical authorities did their best in employing as they did such partly trained or untrained men as they could obtain.

Delay in supplying deficient articles.—The Commissioners think that commandeering was not enough resorted to. The deficiency in bed-pans should have been more quickly met by supplies from the base than was the case. Heavy articles were difficult to obtain from the base, but, says the report:

Some witnesses were apparently under the impression that there was no difficulty in sending even heavy articles up by the railway to Bloemfontein. Mr. Burdett-Coutts, M.P., in his evidence illustrates the point by reference to the fact that his own horses were sent up; but at that time horses were being sent up because remounts were urgently needed at the front, and his horses were forwarded because they were consigned as remounts to an officer at the front (*vide* Appendix—*Price* 2).

In conclusion, though we have pointed out in what respects in our opinion there has been some delay or mistake in not providing further supplies of requisites for the hospitals in the town, we think it right, in considering and estimating the difficulties in the way of the principal medical officer in the town, to call attention to the fact that, in addition to the multitudinous affairs with which he had to deal, the medical officers under him did not always bring to his notice the true condition of things in their hospitals.

Delay in removing patients from the railway station.—As to this complaint, which the Commissioners say is in some degree justified, the report proceeds:—

From and after its first occupation the town was used as a base to which were consigned the sick and wounded from the front, especially after Lord Roberts's advance to Kroonstad commenced. These patients were generally brought into the town by railway and on reaching the railway station, unless they were consigned to No. 9 General Hospital after its siding was made, they had to be taken from the station by ambulances to the various hospitals into which they were to be received. For some time the number of ambulances available for the purpose was very small and it was a matter of difficulty always to have a supply at the station immediately on the arrival of the train. The duty of the medical officers at the stations on the line from which the sick and wounded were sent was to notify by telegraph to the principal medical officer at Bloemfontein the dispatch of the train and the probable hour of its arrival. But owing to the condition of the line, and the interruptions due to the pressure of the traffic and the acts of the enemy, the trains very often arrived at the station hours after the time fixed or at which they were expected. The ambulances being few and much in request could not be kept permanently at the station and so on several occasions some two to four hours elapsed between the arrival of the trains and the removal of the patients to the various hospitals. Moreover, the telegraph line was often cut or out of working order and even when in proper condition was often blocked by urgent military messages, and it is said that sometimes the medical officers sending patients by train forgot to telegraph in time to the principal medical officer at Bloemfontein. In those cases (which, however, we think were few) the sick and wounded would arrive without the authorities at Bloemfontein being made aware of the fact and still greater delay might arise before they could be removed to the hospital. In these various ways the patients were sometimes delayed at the station and in some few cases had to remain for some time without being attended to by a doctor or obtaining any refreshment or medical comforts, such as milk, beef tea, or stimulants. Indeed, on occasions, owing to the train having occupied a longer time on its journey than had been anticipated, and for which it had been supplied, the men may have been without refreshment for some time, and suffering must necessarily have been thereby caused, especially to such of the patients as could not look after themselves. These occurrences were prevented after a time by the establishment by Colonel Exham of a telephone from the railway-station to the principal medical officer's quarters in the town, and also by a medical officer being always kept at the station with medical comforts ready. Moreover, as time went on more ambulances became available for the removal of the patients. But the attendance of a medical officer at the station was not arranged for until the end of May. It is said that before that time the staff of doctors in Bloemfontein was so small in comparison with the work to be done that a medical officer could not be spared for the purpose. We think, however, there is good cause for complaint in the fact that steps were not taken earlier to remedy the evils we have referred to, although after Colonel Exham's arrival at Bloemfontein we are satisfied he was constantly at the railway-station, and that he discharged his duties very zealously.

One incident of the kind has been the subject of much evidence, and was particularly referred to by Mr. Murray Guthrie, M.P., and Mr. Burdett-Coutts, M.P., the latter of whom, however, only spoke from information given to him by others. As it has been considerably commented upon, we inquired into the details. The facts, which apparently were not fully known to Mr. Murray Guthrie, are not so bad in several particulars as they were in the first instance represented. We think it right to state them fully. The train, which contained 179 patients in all, consisted of several trucks, which were at the time the only means of transit available. It left Zand river on the 22nd May, at noon, and arrived at Bloemfontein at 6 A.M. on the 23rd. One of the trucks contained eight patients suffering from fever, which subsequently proved to be enteric. This truck was next to the engine, and immediately behind it came some empties, and then followed the trucks containing all the other sick and wounded men. As the train was expected to obtain refreshment at Smaldeel, only a little was served out at Zand river, that duty being committed to a soldier who was sufficiently well to be able to undertake it. At Smaldeel, owing to the hour of arrival and the disorganisation incidental to the then condition of the campaign in that neighbourhood, the men appear to have received no further comforts, but a little later, before reaching Bloemfontein, two nursing sisters came on board the train and gave the men some milk, brandy, and extract of beef. Arrangements had been made at Bloemfontein for the reception of this train, which was to be drawn up on the line opposite No. 9 General Hospital, in order that the patients might be easily conveyed there. But when it reached Bloemfontein, by a mistake of the railway shunters, who did not notice that the truck with the eight men in it was between the empties and the engine, and who thought that all the patients were contained in the trucks at the other end, two empties with the trucks in question attached were shunted on a siding, as forming no part of the train from which the patients were to be removed. The consequence was that when, in due course, the 171 patients were taken opposite No. 9 General Hospital and detrained, the truck with the eight men in it remained for some time unnoticed on the siding. The authorities at No. 9 were of course unaware of the fact. The railway staff officer noticed the men, but was under the impression that the authorities of No. 9 General Hospital knew that they were there and would send for them shortly. Consequently, he did not inform Colonel Exham of the circumstance as quickly as he should have done. Finding, however, that they were not sent for, he at last communicated with Colonel Exham, who thereupon at once went to the station and saw the men. This was about 11.30 A.M. In the meantime, about 9 or 9.30 A.M., Mr. Murray Guthrie had noticed the men and spoken about them to the railway staff officer. Assistance was obtained by them and the eight men were removed from the wagon and put on the platform under shelter, with their blankets and great coats. A little later Mr. Murray Guthrie kindly obtained some bovril and milk from his store, and had it given to the men. On his arrival at 11.30 Colonel Exham was informed of the patients having been attended to in the manner stated, but after visiting them again half an hour later, he at once went to No. 9 General Hospital and arranged to have warm milk and beef-tea provided, which was promptly done. As all the ambulances at his disposal were that morning engaged he obtained a spare ambulance from the Irish Hospital and sent it to the station. The eight patients were then removed to the Irish Hospital, the last one arriving about 2 P.M. or a little later. They were neither in a state of collapse nor dying, as one of the witnesses seemed to fear. When Colonel Exham saw them at 11.30 he found them mostly asleep, and he says that none were in such a condition as to make an early removal an urgency. This is not in accordance with the testimony of some other witnesses, but it seems to be corroborated by the facts which have been ascertained. The men have been traced, and it appears that none of them died at the Irish Hospital, although the contrary has been alleged. Four were transferred from the Irish Hospital to the base and the remaining four were transferred to No. 9 General Hospital. Only one out of the eight died. He became convalescent from the attack of typhoid fever, but about the first week in July, during the wet weather, contracted pneumonia, from which he died on July 13th. The facts of the case speak for themselves.

Care of Convalescents and Others sent from Bloemfontein.

As regards sending down patients to the base the Commissioners consider that the authorities did their best under existing conditions. It was very desirable that the pressure should be relieved by sending down such as were able to bear the journey, and on the whole the selection of cases was wisely made, though here and there mistakes were made.

One deficiency should be noticed. For a time some trains had a deficiency of buckets sent with them by the authorities at Bloemfontein. This deficiency caused much discomfort, and the oversight is to be regretted as it was easily remediable, and as a matter of fact was set right on attention being called to the matter by Dr. Conan Doyle.

Sanitation in the Town.

This was not wholly satisfactory, but the great outbreak of typhoid fever was not due to preventable causes.

Some Special Complaints.

There were some special allegations made by certain witnesses which we ought to refer to before we leave the subject of Bloemfontein. It is said that on one occasion 20 typhoid patients were improperly removed to the Portland Hospital. We have inquired into this allegation and as a result we have to state that in our own opinion the removal was necessary in the interests of the patients.

A gruesome story of a corpse being stuffed into a lavatory was mentioned by Mr. Burdett-Coutts, M.P., but he states that he only spoke of the matter from information given to him. Inquiry has been made in all quarters to find out whether there is any foundation for this allegation. No such case can be found to have occurred either at Bloemfontein or elsewhere in South Africa, and we are satisfied that Mr. Burdett-Coutts was misled by his informant.

Some observations have also been made with reference to the dead at Bloemfontein, as if the corpses, owing to their great number, were dealt with in a hurried or neglectful way. This is not the fact. In the first place the numbers of men dying in Bloemfontein have been overstated by some witnesses. There were not 50 deaths a day; the maximum was 40, and that only for one day. Each body was buried separately and with every respect and care, and each grave was numbered and the number and name of the dead man registered.

As to Certain General Charges.

As regards certain general charges, we think it only right to say that a false impression is conveyed of the state of things existing at Bloemfontein by such statements as those to the effect that in particular hospitals there were thousands of men in deadly disease, or that thousands of men were left unnursed, or that men were dying against convalescents in the tents (though no doubt in a few cases men may have died next convalescents), or other like general statements. The substantial grounds of complaint at Bloemfontein we have sufficiently pointed out above, and there is nothing in them to justify any charge of inhumanity or of gross or wilful neglect, or of disregard for the sufferings of the sick and wounded on the part of the medical authorities or others having the duty of looking after them.

Lastly, we should add that some few particular complaints and statements affecting Bloemfontein have been made which have not been particularly dealt with by us. With regard to these, we need only say that our silence is to be taken as indicating that, in our opinion, those complaints and statements are not well founded.

(To be continued.)

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6718 births and 4804 deaths were registered during the week ending Feb. 23rd. The annual rate of mortality in these towns, which had been 19·7 and 19·5 per 1000 in the two preceding weeks, rose again last week to 21·2. In London the death-rate was 20·8 per 1000, while it averaged 21·6 in the 32 provincial towns. The lowest death-rates in these towns were 11·7 in Burnley, 13·3 in Huddersfield, 13·6 in West Ham, and 14·7 in Croydon; the highest rates were 25·4 in Salford, 25·5 in Birmingham, 26·2 in Manchester, 27·3 in Liverpool, and 36·7 in Plymouth. The 4804 deaths in these towns included 387 which were referred to the principal zymotic diseases, against 397 and 348 in the two preceding weeks; of these 126 resulted from whooping-cough, 94 from measles, 17 from diphtheria, 33 from diarrhœal diseases, 31 from "fever" (principally enteric), and 26 from scarlet fever. No death from any of these diseases occurred in Wolverhampton, in Norwich, in Halifax, or in Gateshead; in the other towns they caused the lowest death-rates in Croydon, Oldham, and Huddersfield, and the highest rates in Bristol, Liverpool, Blackburn, and Preston. The greatest proportional mortality from measles occurred in Liverpool, Bolton, and Hull; from whooping-cough in Bristol, Cardiff, Nottingham, and Preston; and from "fever" in Derby. The 77 deaths from diphtheria included 27 in London, nine in Leeds, six in Leicester, four in West Ham, and four in Salford. No fatal case of small-pox was registered last week in any of the 33 towns, and only one small-pox patient remained under treatment in the Metropolitan Asylums hospitals on Saturday last, Feb. 23rd. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1834, against numbers decreasing from 2535 to 1876 on the eight preceding Saturdays; 162 new cases were admitted during the week, against 178, 145, and 142 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 323, 397, and 420 in the three preceding weeks, had further risen to 493 last week, but were 60 below the corrected average. Influenza was certified as the primary cause of 32 deaths in London last week, as compared with 15, 12, and 16 in the three preceding weeks. The causes of 59, or 1·2 per cent., of the deaths in the 33 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Salford, Oldham, Bradford, and in nine other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Blackburn, Sheffield, and Newcastle.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 23·2 and 22·6 per 1000 in the two preceding weeks, rose again to 23·7 during the week ending Feb. 23rd, and exceeded by 2·5 per 1000 the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 15·0 in Leith and 18·5 in Perth to 23·0 in Edinburgh and 27·0 in Glasgow. The 742 deaths in these towns included 36 which were referred to whooping-cough, 19 to measles, 16 to diarrhœa, 15 to small-pox, six to "fever," four to diphtheria, and three to scarlet fever. In all, 99 deaths resulted from these principal zymotic diseases, against 103 and 106 in the two preceding weeks. These 99 deaths were equal to an annual rate of 3·2 per 1000, which was 1·5 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 43, 37, and 33 in the three preceding weeks, rose again last week to 36, of which 25 occurred in Glasgow, five in Dundee, and three in Edinburgh. The deaths from measles, which had been 14 and 25 in the two preceding weeks, declined again to 19 last week, and included 10 in Edinburgh, four in Glasgow, two in Dundee, and two in Aberdeen. The fatal cases of diarrhœa, which had been 27, 18, and eight in the three preceding weeks, rose again last week to 16, of which five were registered in Glasgow, two in Edinburgh, two in Dundee, two in Aberdeen, and two in Greenock. The deaths referred to small-pox, which had been 24, 11, and 20 in the three preceding weeks, declined again to 15 last week, and included 13 in Glasgow, one in Aberdeen, and one in Paisley. The fatal cases of "fever," which had been 10 and four in the two preceding weeks, rose again last week to six, of which two were recorded in Glasgow, two in Edinburgh, and two in Dundee. The four deaths from diphtheria showed a marked decline from the numbers in recent weeks, and included two in Glasgow, where two of the three deaths from scarlet fever were also registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 158 and 153 in the two preceding weeks, rose again last week to 177, but were 185 below the number in the corresponding period of last year. The causes of 38, or more than 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 27·4, 34·0, and 34·3 per 1000 in the three preceding weeks, declined again to 33·7 during the week ending Feb. 23rd. During the past four weeks the death-rate in the city has averaged 32·4 per 1000, the rates during the same period being 18·7 in London and 21·1 in Edinburgh. The 224 deaths belonging to Dublin registered during the week under notice showed a decline of four from the number in the preceding week and included 11 which were referred to the principal zymotic diseases, against 18, 16, and 10 in the three preceding weeks; of these, four resulted from "fever," four from diarrhœa, and three from whooping-cough. These 11 deaths were equal to an annual rate of 1·6 per 1000, the zymotic death-rate during the same period being 1·5 in London and 3·2 in Edinburgh. The deaths referred to different forms of "fever," which had been three, five, and two in the three preceding weeks, rose again to four last week. The fatal cases of diarrhœa, which had been two in each of the three preceding weeks, increased last week to four. The deaths from whooping-cough, which had been 12, nine, and three in the three preceding weeks, were again three

during the week under notice. The 224 deaths in Dublin last week included 35 of children under one year of age, and 79 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons showed a slight increase over the number in the preceding week. Three inquest cases and six deaths from violence were registered; and 73, or nearly a third, of the deaths occurred in public institutions. The causes of 19, or more than 8 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE under-mentioned surgeons have been promoted to the rank of Staff Surgeon in His Majesty's Fleet:—Lawrence Bidwell, Edward Henry McSherry, Walter James Bearblock, William Hackett, Charles Geskie Matthew, Thomas Austen, and Joseph Chambers.

The following appointments are notified:—Staff Surgeon W. J. Bearblock to the *Archer*. Surgeons: O. Rees to the *Gibraltar*, R. F. Clark to Plymouth Hospital, and B. Ley to Royal Marine Depôt, Deal. Civil Practitioner: A. J. Sharpe to be Surgeon and Agent at Whitby.

ROYAL ARMY MEDICAL CORPS.

Major S. O. Stuart holds himself in readiness to embark for South Africa at an early date.

The undermentioned surgeons-on-probation to be Lieutenants: Albert John Walton Wells, George Faber Sheehan, Henry Harold Scott, Henry Arthur Bransbury, Mervyn Winfred Falkner, Richard Nason Woodley, Eugene Ryan, Edward Ernest Parkes, James Valentine Roche, Alfred John Hull, Reginald Vionnée Cowey, James Conway, John Humphrey Barbour, Frederick England Robinson, Samuel Mason, John Southey Bostock, and Arthur Henry McNeil Mitchell.

INDIA AND THE INDIAN MEDICAL SERVICES.

The King has approved of the appointment of the undermentioned surgeons-on-probation to the Indian Medical Service:—To be Lieutenants: Charles William Melville, Robert McCarrison, James Masson, Norman Septimus Wells, William Maurice Anderson, Edmund Hamilton Blake Stanley, William Hugh Leonard, William Douglas Pringle, Andrew Watson Cook Young, James Graham Goodenough Swan, Robert McLauchlan Dalziel, James Jackson Robb, Abdur Shaik Ruzzak, and Robert Basil Boothby Foster.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant Thomas F. Devane, 1st Volunteer Battalion the Queen's (Royal West Surrey Regiment), to be Surgeon-Lieutenant.

VOLUNTEER CORPS.

Artillery: 1st Banff: Supernumerary Surgeon-Captain F. W. Grant to be Surgeon-Captain on the Establishment. *Rifle:* The Queen's Rifle Volunteer Brigade the Royal Scots (Lothian Regiment): The undermentioned gentlemen to be Surgeon-Lieutenants:—Alexander Aitken Ross and James Scott. 1st Hertfordshire Volunteer Battalion the Bedfordshire Regiment; Surgeon-Captain R. Odell resigns his commission. 2nd Volunteer Battalion the Cameronians (Scottish Rifles): Surgeon-Lieutenant-Colonel B. Goff resigns his commission, with permission to retain his rank and to wear the uniform of the battalion on retirement.

THE COST OF MAINTENANCE AND TREATMENT IN MILITARY HOSPITALS IN THE LEVANT.

Dr. Barthélemy of the French navy, in the course of an interesting article in the *Archives de Médecine Navale* for November last on the sanitary condition of a battalion of marine infantry recently quartered in Crete, gives an account of a notable experiment which was carried out under his orders with a view of determining the cost of maintenance and treatment in improvised hospitals for troops at outposts or in camps remote from headquarters. Owing to the isolation of Halepa, where the battalion was encamped, it was decided that all hospital supplies were to be procured locally under the supervision of the regimental medical officer, and in order that the expenditure might be conclusively established Dr. Barthélemy took steps to find out the value of the medicaments and other necessaries which were obtained from France. The rent of the building where the improvised infirmary was installed, amounting to 140 francs per mensem, was also included in the accounts, as well as every other item that could legitimately be imputed against the upkeep of the establishment. Throughout the whole of 1898, says Dr. Barthélemy, we devoted ourselves to this work after a very conscientious fashion, with the following result. After all expenses were paid it was found that each patient cost the State the sum of 2¼ francs per diem. It is a very low charge, he continues, by comparison with the sums exacted from military and naval patients in the civilian hospitals of these regions. At Smyrna, for example, every individual admitted is made to pay 12 francs per diem. The simple facts here related demonstrate with great clearness the expediency of organising self-contained infirmaries for troops, wherever they may be stationed, whether it be in the colonies or in foreign countries. These sanitary institutions can be installed everywhere under regimental auspices alone. The administration they demand is extremely simple, while the *personnel* required is less numerous and also less expensive than is the case in hospitals properly so-called. The surgeon-major of the regiment or of the battalion can himself supervise and control the arrangements. He can send his sick in at the most opportune moment, can follow their fortunes during the course of their diseases, and is able to apply the treatment most suitable to each man's case and constitution, for he knows them all well. When these infirmaries are well installed, which can always be the case, the patients are just as well off with regard to hygiene and comfort as they would be in a civil or colonial hospital, and this notwithstanding the important circumstance that the cost of their upkeep in the latter would be at least three times as great.

MILITARY EFFICIENCY IN WAR.

The debate in the House of Commons on Mr. Lambert's proposed amendment to the address *à propos* of the number of surrenders of British troops and the loss of guns during the present war had the effect of drawing an explicit declaration from Mr. Brodrick on the part of the Government. Mr. Brodrick promised that the whole subject would be promptly and firmly dealt with, in order to ascertain all the information possible in regard to the many "regrettable occurrences" that had taken place during the campaign in South Africa. It seems that in future the practice in the army will be more assimilated, and rightly so, to that of the navy in the case of loss of or accident to one of His Majesty's ships. In addition to the dispensation of punishments that has already taken place in connexion with the present war the Government will bring to trial by court-martial all those who were *primâ facie* responsible for surrenders. Where, for want of a *primâ facie* case, it is impossible to deal with specific individuals, the cases will be made the subject of general investigation at the end of the war. It is quite possible that in some instances where troops had had little or no previous military training it was no lack of courage but an absence of corporate discipline and experience on their part that led to their surrender.

HONORARY PHYSICIANS AND SURGEONS TO THE KING.

The following appointments have been made:—Honorary Physicians to the King: Dugald McEwan, M.D. Glasg., Inspector-General (retired); Sir James J. L. Donnet, K.C.B., M.D. St. And., Inspector-General of Hospitals and Fleets; Sir John Watt Reid, K.C.B., M.D. Aberd., LL.D., Director-General of the Medical Department of the Navy (retired); Adam B. Messer, M.D. Edin., Inspector-General of Hospitals and Fleets (retired); and Henry C. Woods, M.V.O., M.D. St. And., Inspector-General of Hospitals and Fleets (extra). Honorary Surgeons to the King: Sir James Jenkins, K.C.B, M.D. Glasg., Inspector-General of Hospitals and Fleets; Timotheus J. Haran, Inspector-General of Hospitals and Fleets; Sir James N. Dick, K.C.B., Director-General of the Medical Department of the Navy (retired); William H. Lloyd, M.D. St. And., Inspector-General of Hospitals and Fleets; Alfred G. Delmege, M.V.O., M.D. R.U.I., Deputy Inspector-General of Hospitals and Fleets (extra).

THE WAR IN SOUTH AFRICA.

There has been great activity recently in the prosecution of the war, and the news is of a much more satisfactory and

encouraging nature. According to an official return recently issued the total effective strength of the British forces serving in South Africa at the present time amounts to 204,949 men. Upwards of 20 cases of plague have occurred at Cape Town since the outbreak of that disease was first notified. The cases have been mainly among the native population, but several Europeans have also been attacked. The disease does not appear to have spread rapidly or to have been of a very virulent type, for the mortality has not so far been great; the worst feature perhaps about it is that the cases have not been confined to one or two, but have occurred in several, districts of the town. Very active measures have been adopted by the local authorities with the view of limiting the spread of the infection. As regards the British forces in the field enteric fever continues to occupy by far the first place in the casualty returns.

SOUTH AFRICAN NOTES.

Lieutenant W. M. Power, R.A.M.C., Lieutenant E. B. Knox, R.A.M.C., Captain N. Faichnie, R.A.M.C., and Civil Surgeons A. Young and S. H. White have returned to England from South Africa.

Captain F. S. Brereton, R.A.M.C. (invalided), and Civil Surgeon M. W. Renton are returning home in the *Simla*.

Lieutenant Forbes Winslow, R.A.M.C., and Civil Surgeon Mowatt are reported improving (Pretoria, Feb. 20th).

Major J. S. Edye, R.A.M.C., Lieutenant J. M. Buist, R.A.M.C., and Civil Surgeons W. J. Moir and E. L. Mansel Renton have been discharged from hospital to duty.

The military hospital at Stoke has proved of great value during the South African War. Military invalids from the seat of war were first received there on May 8th last. Some 2200 have been received for treatment. On Feb. 18th 76 invalids remained in the hospital, but a fresh party of 150 arrived on Feb. 23rd.

THE NEW PERMANENT UNDER-SECRETARY AT THE WAR OFFICE.

Mr. Brodrick is to be highly congratulated on the appointment of Colonel E. W. D. Ward as the successor to Sir Ralph H. Knox. Colonel Ward is a thoroughly capable man and has had ample opportunities for showing his quality in peace and war, and the appointment of "the best commissariat officer since Moses," as Sir George White was justified in speaking of him after the siege of Ladysmith, will commend itself to all. Colonel Ward is a capital organiser and, like men who really know their work, he has foresight, self-reliance, and no fussiness. His appointment is an earnest of the sincerity of the War Minister's expressed intentions as to army reform.

LUMSDEN'S HORSE IN CALCUTTA.

On the return of Lumsden's Horse to India from their war service in South Africa they met with an enthusiastic reception. The Viceroy, in the course of a speech at Calcutta welcoming the corps, congratulated Colonel Lumsden and his officers and men on their record in South Africa. Lord Curzon dwelt on the fact that besides the loss of their gallant second in command, Major Showers, only five others were killed, while two only died from disease in the entire campaign. The total casualties were less than 24, which in a force of over 250 men was, Lord Curzon considered, a remarkable result.

DENTAL SURGEONS FOR THE SERVICES.

In a paper read by Mr. Browne-Mason of Exeter at a recent meeting of the Western Branch of the British Dental Association, the author urged the appointment of dental surgeons in connexion with the army and navy. In June, 1900, Mr. Browne-Mason examined 151 soldiers invalided from South Africa at the Station Hospital, Devonport, and found that only four had sound sets of teeth. The author holds that early attention to the teeth would be of great benefit to the army and navy, more especially the latter on account of the earlier age of joining the service.

SOME STATISTICS OF WAR CASUALTIES.

Apropos of the losses in the present war in South Africa it may be interesting to refer to the casualties in some other wars. Dr. Ryerson of the Canadian Medical Staff, in his address at a meeting of the Toronto Clinical Society last year, stated that of the British Army in the Crimea 4602 were killed, while 17,580 died from disease; in the American Civil War, on the Union side, 93,969 were killed and 186,216 died from disease; in the Spanish-American war 454 were killed and 5277 died from disease.

THE OGADEN SOMALIS EXPEDITION.

A telegram from Mombasa, dated Feb. 26th, states that the expedition which was sent to punish the murderers of Mr. Jenner was attacked on Feb. 19th. Among the killed was Lieutenant-Colonel Maitland, I.M.S. (Bombay), and among the wounded Dr. Mann.

MENTIONED IN DESPATCHES.

In a despatch from Sir Redvers Buller, dated Camp Springfield, Feb. 8th, 1900 (omitted from the despatches published in the *London Gazette* of Feb. 8th, 1901), Lieutenant J. J. W. Prescott, R.A.M.C., is "specially mentioned for his care of the wounded in despite of a heavy fire."

ARMY MEDICAL SCHOOL, NETLEY.

The summer session of the Army Medical School commences to-day, Friday, March 1st. The session is to be attended by 35 surgeons-on-probation who have entered the school by competitive examination—28 for the Indian Medical Service and seven for the Royal Army Medical Corps.

Correspondence.

"Audi alteram partem."

"THE DUMMY CORPSE" CASE.

To the Editors of THE LANCET.

SIRS,—As it may be of some interest to the profession I have pleasure in placing before you the story of this extraordinary case.

William Charles Browning, 35 years of age, called upon me on Jan. 14th of this year complaining of difficulty in micturition. I prescribed for him but did not see him again until the 25th, when he once more visited me. On the 29th I was summoned to his room at 253, Vauxhall Bridge-road, S.W., where I found him in bed in a very weak condition with a temperature of 103° F. He complained of severe pains in the loins and constant headache and said that his feet and legs swelled when he was out of bed and that for some time he had been passing very frequent but very small quantities of urine which had been porter-coloured but was then clear, although the smallness of quantity and frequency of micturition still continued. He remained in bed for the following eight days, during which I visited him regularly, receiving samples of his urine each day. It was acid, specific gravity 1025, and always contained considerable quantities of albumin. On one occasion I obtained the reaction for blood, and on microscopic examination there were numerous hyaline and some granular tube casts. Uric acid crystals were present in very large amount. I treated the case in the usual way as one of acute nephritis. On Feb. 4th the albumin had largely increased in quantity, and I went to see Browning earlier than usual and found him very collapsed, deadly pale, almost pulseless, and suffering from a severe rigor. He explained to me that a fire had occurred in the adjoining room during the previous night, that he had jumped out of bed, and almost naked had assisted in extinguishing it. He then said that he should send for his brother, and gave his landlady the letter, which she posted. On the following day (Feb. 5th) Browning appeared to be very drowsy and there were convulsive movements of the limbs. Fearing uræmia I at once took measures accordingly and saw him again at night, at 10 o'clock. Though free perspiration had been induced the drowsiness continued and it was with difficulty that any reply could be obtained to questions.

Next morning (Feb. 6th) at 10 o'clock a man called upon me and I was struck by his general resemblance to my patient, but this was speedily explained by his stating that he was the brother of Browning, who, he informed me, died at four o'clock that morning. He said that he had arrived shortly after my departure the previous night and had found his brother sleeping heavily, but that he awoke at midnight, just recognised him, and then relapsed into deep sleep. "At four o'clock my brother had a fit in which he died." Upon my inquiring into the nature of the "fit"

he gave me the symptoms of uræmic convulsions and I remarked that I could not express surprise considering the grave condition of the patient. In reply to my questions the "brother" explained that he was the only living relative of the "deceased," who had lost his wife two years previously through accidentally taking poison. He wished the "body" to be removed from Vauxhall Bridge-road lest it should be an inconvenience in the house, and I suggested that a respectable undertaker would take charge of it. He paid my account, saying that he wished to take the receipt to his brother's solicitors. I filled in the certificate of the cause of death in the usual way. He supplied me with the necessary details. Owing to his description of the "fit" in which death had been said to occur I certified to uræmia consequent upon acute nephritis. A little later the landlady called upon me and explained that she had admitted the "brother" the previous night and had expressed surprise to him the next morning that he had not summoned her or sent for the medical man when Browning died, but had been told that it was of no use, as death had supervened almost immediately. She was concerned because the "body" was locked up and no one had been to "lay it out." I told her that although neither required by law nor the custom of the profession I should carry out my usual habit of inspecting the corpse, and that she need not worry further.

Some two hours later I called, and the "brother" being still absent I asked if a key could not be found for the folding-doors which separated Browning's room from that wherein the fire had occurred. I said that I did not wish to have to pay a second visit, and that if any difficulties were made as to the room being entered in the "brother's" absence I would be responsible, as he could have no objections to my seeing the body of my patient. On opening the door a seal was broken and this first aroused my suspicions that there was something wrong; but on looking at the bed there was dimly to be seen in the darkened chamber the outlines of a human body covered by a coverlet. Upon removing the latter I found the corpse to be a "make up." Fearing foul play to my patient I at once searched the room, but finding nothing to corroborate my suspicion I locked the door and immediately went to Gerald-road police-station and reported the facts. Thence I proceeded to the registrar's office, and ascertaining that the certificate had not been registered, I left instructions that if anyone presented it the police should be communicated with at once.

Later in the day, accompanied by Detective-Sergeant Bedford of the B Division, I went to the house, and a search revealed that Browning was a senior medical student and that he held a policy in the Pearl Insurance Company for £200. Whilst we were in the house the so-called "brother" arrived, and being confronted with the detective and myself confessed that he was at once the patient, the corpse, and the brother, and that he had done all this to make his relatives believe him dead, as he had just come out of prison. He said that he had no intention of making an improper use of the certificate, and handed it back to me. Questioned as to his illness he replied: "I have been ill, very ill, and am still ill, but I made the most of my symptoms, and I added albumin to the samples of urine sent to you for examination. My temperature was genuine" He further stated that after my last visit on the night of the 5th he had got out of bed and shaved off his moustache, and that disguised he had slipped out of the house and re-appeared as the "brother." Like myself the landlady did not recognise him either that night or on seeing him the next morning, so clever was the change in his appearance. The evidence before Mr. Sheil at Westminster Police-court and the subsequent trial before Mr. McConnell, K.C., at the Clerkenwell Sessions, whereat Browning was charged with making a false statement and obtaining a certificate of death by false pretences, ended in a sentence of nine months' imprisonment.

In conclusion, Sirs, may I be allowed to draw a moral from this strange case? That moral is, the desirability of legislation whereby it shall be made necessary that after death from natural causes in a case that has been attended by a duly qualified medical man the dead body shall be seen by a registered practitioner before the certificate is given, and that such practitioner shall certify, not merely as at present the *cause* of death, but also the *fact* thereof. The State should be responsible to the medical man for this visit and for giving the certificate. If I understand rightly, the desirability of such a change in the law was pointed out to a Government Commission some years ago but nothing was done in the matter.—I am, Sirs, yours faithfully,

GIDEON W. B. MARSH,
L.S.A., B.A. Lond., F.R.Hist.S.

Tachbrook-street, S.W., Feb. 25th, 1901.

MEDICAL MEN AND LIFE INSURANCE PROPOSALS.

To the Editors of THE LANCET.

SIRS,—Doubtless in common with all other practitioners, I am constantly receiving letters from life insurance offices asking for information concerning friends or patients wishing to have their lives insured. The questions often look simple enough, but probably include one which to a medical man who has known his friend or patient for a few years, and his family for more, is not so simple as it looks—"Is there anything else in the history of the patient or his family which the office ought to know?" The actuary is kind enough to add that any reply to such a communication will be regarded as confidential; in other words, that you may give away your friend's or your patient's chances of insurance at ordinary rates without the risk of his knowing that you have done it. There is something in this assurance which shows that the offices are conscious that they are acting, to say the least, questionably. I have long absolutely objected on principle to give such information to offices. They have their own experts to investigate the medical facts of cases and are quite capable of getting all the information necessary for their own protection from the applicant or his lay friends without putting his medical friend or adviser into the false position of serving two masters. The offices have only one excuse—that the proposer often quite innocently gives them a reference to his medical friend or medical adviser, and as far as I know the medical profession has not, as a whole, or through any of its principal authorities, objected to this use of medical men.

I write in the hope that a little ventilation of this point will show the unreasonableness of the practice and lead to its discontinuance by the offices. No fee which they could pay would alter the ethical aspect of the case—except for the worse. I am, Sirs, yours faithfully,

Highbury-place, Feb. 26th, 1901. J. G. GLOVER.

PERFORATION OF THE BOWEL IN TYPHOID FEVER.

To the Editors of THE LANCET.

SIRS,—Professor Osler's plea for the prompt surgical treatment of perforation of the bowel in typhoid fever and your leading article thereon, both of which were published in THE LANCET of Feb. 9th (p. 386 and p. 413), should appeal with great force to all members of the medical profession. It is not too much to say that the entire profession is under deep obligation to Professor Osler for speaking his mind so emphatically on this subject through your widely-read columns, and also to you, Sirs, for your earnest endorsement of his important recommendations. It surely now behoves every medical man in attendance on a typhoid fever patient at once to take steps which will enable him, should the necessity arise, to give his patient the benefit of prompt surgical treatment, and a heavy responsibility will attach itself to the individual who fails to follow Professor Osler's advice.

There is one point in Professor Osler's paper to which I should like to draw attention, and this is the remark that perforation of the bowel as a complication of typhoid fever is liable to occur in severe examples of the disease, or in cases associated with delirium, diarrhœa, hæmorrhage, or other abdominal symptoms. Having once lost a patient from a perforating typhoid ulcer who was the subject of the so-called ambulatory form of the disease and who, until the rupture occurred, which took place whilst at stool, was going about his daily work, I am in a position to bear testimony to the oft-repeated statement that this disease, in apparently its mildest form, may terminate fatally from perforation. Bristowe in his work on Medicine points out that perforation not infrequently occurs in patients who have never taken to their beds, and Taylor asserts that in some cases the illness is so slight that patients go about their ordinary occupations until, perhaps,

the use of aperients leads to a fatal perforation, while Professor Osler himself states that in rare instances typhoid fever is unsuspected until perforation occurs. I need not, perhaps, quote any other authorities in support of this well-known insidiousness of typhoid fever. My object in mentioning it at all is to urge upon those concerned the circumstance that skilled surgical aid should be made available *in every case* of typhoid fever, and not only in cases which, from their clinical symptoms, are deemed to be of a serious nature.

Professor Osler divides cases of perforation into three groups. The first group comprises cases which, setting aside the exploratory laparotomy, are found to be inoperable; the second embraces all cases successfully operated on which end fatally from the disease itself; and the third consists of those cases which recover from the disease after successful operation. It seems probable that in the hands of skilful surgeons recovery would be the rule in all cases in which the symptoms, apart from the perforation, were slight in degree.

Attention is drawn in Professor Osler's communication to the difficulty occasionally experienced in the diagnosis of perforation of the bowel, and in this relationship I would point out the advisability of an examination of the chest in all doubtful cases. On one occasion, now some years ago, I omitted to take this precaution and believing my patient was suffering from peritonitis treated him with hypodermic injections of morphia every four hours combined with rectal alimentation. On the third day of this treatment the patient hawked up a pellet of blood-stained mucus, and it was then discovered that he had pneumonia of the base of the right lung, of which disease, apart from acute and sudden abdominal pain with quickened respirations, he had previously shown absolutely no symptoms.

I am, Sirs, yours faithfully,

OSWALD BAKER, M.D. DURH.

Welbeck-street, W., Feb. 17th, 1901.

"LEGISLATION AGAINST NATIONAL INTEMPERANCE."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Feb. 23rd, p. 578, Mr. Aspinall Marsden asks whether some effort cannot be made to establish in our profession a common doctrine on the temperance question. I fear that he cannot have studied your columns very carefully during the past few years and cannot be acquainted with recent literature on this subject. Perhaps, also, he is unaware of the work which has been undertaken by the Society for the Study and Cure of Inebriety. It seems necessary to inform your correspondent that a great effort *is* being made to establish a common doctrine on scientific grounds, but scarcely on the lines suggested by him.

I take leave to object to his suggestion that the modern view regards alcoholism as "a defect of will in relation to intoxicants," and that "the predisposing cause of alcoholism is nervous instability of all kinds." The defective will-power which is supposed to make a man unable to resist the craving for alcohol must be part only of a generally weak will. Does your correspondent deny that the Italians are more sober than the Scots? If he does not will he kindly give us his proof that the Italian is the stronger-minded race of the two? Or, to bring the subject nearer home, does he mean to assert that his teetotal friends tell him that they conquer the desire to imbibe by exerting will-power? Is the explanation not simpler—the teetotaler does not drink because he has no desire? To receive an answer to the question, "Why has the teetotaler no desire?" I refer your correspondent to Dr. Archdall Reid's writings. Then what is this "nervous instability"? What are the causation, pathology, and symptoms of it, if it be a disease? Or is it merely a revived "astral body" or "elementary spirit" of the mystics, or some curious re-christened survival from the iatro-chemical or the vital-fluid school? Or can it be part of some magic diffused from some great man in the profession? It would be well if Mr. Marsden would bring us to closer quarters with this "nervous instability."

The statement that "the children of parents with physical weakness take to narcotics like ducks to water" is far-reaching and awe-inspiring. Does Mr. Marsden mean seriously that parental drinking causes filial drunkenness—that the acquired effects of alcoholism are transmissible? Has he the proof long sought by the scientific world in his keeping? If so, Sirs, may your columns soon be thrown open once more to the exposition of a great discovery.

Your other correspondent "M.D., B.Sc. (Lond.)" is of the serious opinion that some publicans are genuine temperance reformers. Perhaps this is more true than either he or his publican patients imagine. But what are their principles? Do they distribute temperance tracts across the bar? or have they only been reading (and have misunderstood) Dr. Reid's "Present Evolution of Man"? May I tell "M.D., B.Sc.," that I know a wealthy brewer's wife who is a strong and conscientious and active temperance reformer? She collects and preaches to wayward men by the hundred; but the only noticeable effect is that her husband's tied houses are deserted for neighbouring bars, to the undisguised joy of the rival brewery. Are "M.D., B.Sc.'s" publican friends as unselfishly philanthropic?

I am, Sirs, yours faithfully,

Honor Oak-road, S.E., Feb. 25th, 1901. H. LAING GORDON.

THE NEW SYDENHAM SOCIETY.

To the Editors of THE LANCET.

SIRS,—I shall be much obliged if you will allow me a little space in order to direct the attention of your readers to an advertisement which appears in your pages and to explain its bearing. The New Sydenham Society is now in its forty-third year and its last volume was numbered 172. It has a members' list of nearly 1400. In spite, however, of the indications of prosperity which these facts may serve to afford there are others which have made its council of late years somewhat anxious. Its members' list in its palmy days numbered for many years in succession more than 3000, and the decline which has of late been steady has been yet more definite during the last year. This is probably explained by the conclusion last year of its Lexicon of Medical Terms. The council believes that this decline has arisen from perfectly natural causes. The conditions of medical journalism and of the publishing trade have during the society's lifetime been greatly changed. The supply of medical literature is now very liberal and works of real merit published abroad do not now wait long for translation. The machinery of the society is such that it cannot possibly compete in promptitude with private enterprise, nor is it in the least desirable that it should attempt to do so. In brief, the *raison d'être* of the society has been to a large extent removed and the functions which it proposed to itself are now fulfilled by others. Of late the council has encountered increasing difficulty in finding works for translation which should fulfil the two needful conditions of being at once of great and permanent value and likely to be acceptable to a wide circle of readers. Works such as those of Trousseau, Hebra, Charcot, and Hirsch are no longer available. There are plenty of valuable monographs on special subjects, but they would interest only a few and their publication by the society would certainly lead to resignations of members. The works which it undertakes must be of general interest, or its numbers, and with its numbers its efficiency, will increasingly decline.

Under the circumstances described it will not cause surprise when I state that the council has had under its serious consideration the propriety of winding up the society's affairs. It possesses sufficient funds in hand to complete last year's issue of books and it has also property of considerable value in back stock. It could therefore close its life with dignity, and the present year appears to some of us a very suitable time for doing so. There are, however, not a few members of its council and other friends of the society who are strongly averse to the idea of closing its career. It need not be said that prior to any such procedure a public meeting of its members would be called with whom the final decision would rest. Before, however, taking any further steps the council has decided to submit a proposal to the profession at large, and it is in order especially to explain this that I now trespass on your space.

It was during the years in which the "Atlas of Skin Diseases" was in course of issue that the members' list was best maintained. The "Atlas of Pathology" since undertaken has not perhaps proved equally acceptable and its issue has been impeded by want of funds. The council's present proposal is to widen the scope of this latter work and to make it an "Atlas of Pictorial Illustration of all Subjects relating to Diagnosis in Medicine, Surgery, and

Obstetrics." The materials for such an atlas already collected (from all sources) are abundant, and in their selection the council would have expert knowledge at its disposal. The cost of the production of illustrations of this kind has been much reduced of late years, and from estimates which have been obtained it is calculated that if a sufficient number of subscribers could be secured four or five fasciculi of from eight to 10 plates can be produced annually and the work completed in five years. During that time the council proposes to abstain from undertaking the publication of any printed volumes with the single exception of one a year to consist of a collection of papers or lectures from foreign sources translated as promptly as possible after their publication. It may also, if funds allow, publish one or more supplements to its Lexicon. In order to ascertain the amount of support which might be expected for the proposed work a somewhat detailed prospectus has been prepared and has been distributed to all members of the profession resident in certain cities and towns. Dublin, Brighton, Manchester, and Glasgow, with a few others, have been selected. Our agent, Mr. Lewis, 136, Gower-street, will be glad to supply this prospectus to anyone applying for it (post free). In the meantime the council will be glad to receive communications from those interested in the proposal. It will be needful that a members' list of at least 2000 should be secured.

I have only to add that in case the society should not be encouraged to continue its existence and undertake the proposed atlas that it is possible that the latter may be published independently of it. There would, however, be obvious advantages in its being done by the New Sydenham Society. The present organisation would be kept going and, further, an annual volume of translated monographs would be secured.—I am, Sirs, yours faithfully,

JONATHAN HUTCHINSON,
Hon. Secretary to the New Sydenham Society.

Feb. 26th, 1901.

"GASTRIC HÆMORRHAGE AND ITS SURGICAL TREATMENT."

To the Editors of THE LANCET.

SIRS,—I am very sorry that my attention has only just been drawn to a letter on the above subject from Mr. J. Basil Hall in THE LANCET of Feb. 16th, p. 510, too late for my reply to reach you in time for insertion on the 23rd. If Mr. Hall will re-read my paper I think he will find that particular care is taken to mark the difference between so-called chronic and acute hæmorrhage, and that all my arguments are employed to try to elucidate the question of what is the best method of arresting the hæmorrhage in acute gastrorrhagia, it being taken for granted that surgical treatment is nearly always demanded in chronic but only occasionally in acute bleeding from gastric ulcer. If Mr. Hall will refer he will also notice why the second case was reported, though the bleeding was dependent on injury and not on ulcer; the reason being that I wished to give "a brief description of all the cases of hæmatemesis on which I had operated."

With regard to the facts of the case, I was sent for to operate on a perforating wound of the stomach, this diagnosis having been made because of the vomiting of blood directly after the accident. When I saw the patient I thoroughly investigated his case and personally made careful inquiries as to the hæmatemesis, both at the time, while the patient was being prepared for operation, and subsequently; so that there is no need to alter in any way the abstract in THE LANCET, taken by me from the report of the case given by my house surgeon, Mr. Levi, in the *British Medical Journal* for 1897, page 77, where occurs the following:—

> The nature of the injury is remarkable in that the perforating instrument, being somewhat blunt at the end, must have pushed aside the stomach and colon instead of perforating them, though the fact of blood having been vomited shows that the stomach must have received the impact of the file, and have suffered injury to its internal coats.

The interest of the case lies in the fact of there being no further hæmorrhage after the abdominal lavage without any operation on the stomach itself, as is stated fully in the abstracted notes. The fact of the first patient on whom pylorectomy was performed for a chronic ulcer of the pylorus that had been bleeding for some time having subsequently suffered from cicatricial contraction of the opening between the stomach and pylorus is no argument against pylorectomy having successfully combated the bleeding from a chronic gastric ulcer, on which account simply an abstract of the case is given. The subsequent history of this case is included in my statistics of gastro-enterostomy, now almost ready for publication.

Had I described, under operations for chronic hæmatemesis, the cases of slight coffee-ground vomiting so common in chronic ulcer and in cancer of the stomach, on which I have operated the list would not have been limited to the few cases given at the end of my paper; but Mr. Hall, despite his criticisms, must be fully aware that very serious bleeding, leading even to a fatal termination, may occur under the form of so-called "coffee-ground" vomit.

I see no need, therefore, because of these criticisms to alter my opinion as to the desirability of such cases of chronic hæmorrhage being considered in a paper treating of gastrorrhagia, and in this view Mr. Hall will find, if he studies the literature of the subject, that I am supported by authorities whose views are not to be lightly set aside.

I am, Sirs, yours faithfully,

Park-square, Leeds. A. W. MAYO ROBSON.

"PERSISTENT METRORRHAGIA."

To the Editors of THE LANCET.

SIRS,—Dr. J. Inglis Parsons[1] has done well in bringing forward the treatment by electricity of what he calls "persistent metrorrhagia," but as it might be supposed from his remarks that the treatment is new for such cases I think it right, in justice to the memory of Dr. Apostoli, to say that of the 24 patients I saw treated by him in Paris in May, 1887, five were cases such as Dr. Parsons describes, two being complicated by retroversion. I have found electricity most satisfactory for this condition for the last 13 years and can corroborate all Dr. Parsons says in its favour. I find, however, that shorter sittings and apparently fewer applications are sufficient. I advocate, as Apostoli did, the strongest doses that can be borne without pain and begin if possible with 100, as against Dr. Parsons's 50, milliampères.

I am, Sirs, yours faithfully,

Feb. 25th, 1901. SKENE KEITH.

"ISOLATION HOSPITALS."

To the Editors of THE LANCET.

SIRS,—You challenge me to produce any memorandum of the Local Government Board, however antiquated, which may afford some grounds for the "stamping-out" thesis. The disillusionment came too early to permit of the Board's falling into any such blunder. The attitude of the officials of the Local Government Board of that day is well exemplified by the evidence given before the Commission on Small-pox and Fever Hospitals by Dr. Thorne Thorne, the report of which Commission was presented as early as August, 1882. The Hastings Bill was then being wriggled through the House of Commons, urgency being claimed for it on the ground that, with such powers as would be obtained under its provisions, the "stamping out" of certain infective diseases—notably scarlet fever—would only be a question of time. The same brilliant promises had been, or were being, made in Huddersfield, Oldham, Bolton, Nottingham, and elsewhere, not by enthusiasts (from whom I am supposed to have borrowed my idea), but by steady-going and sometimes highly qualified medical men who had no other end in view than the stamping out of infective diseases. The evidence in question is very significant and it forms very interesting reading to-day. Here is an excerpt. Seventh day of the Commission, Jan. 6th, 1882.

> Lord BLACKFORD: You would say that whenever compulsory notification and isolation hospitals co-existed the effect has been to considerably facilitate the isolation of infectious diseases?
>
> Dr. THORNE THORNE: Yes, the effect has been considerable where there has been a good hospital and the Act was properly administered. I can give two instances which I think will be typical of that, and the first I would quote would be Leicester. In 1870 an epidemic of scarlet fever occurred, when there was no hospital, no system of registration of infectious diseases, and between the middle of September and the end of December 217 deaths resulted. The next epidemic was in 1875. A hospital had been provided, but it was only in partial use and still there was no registration of infectious diseases. Between the middle of September and the end of December in that year 31 cases were admitted to the hospital, and the deaths in the borough were 94. In 1879 the Notification Act came into operation; it unfortunately came into operation after an epidemic of scarlet fever had commenced, but it was immediately put into operation in the middle of September and between that date and the end of December 159 cases were admitted to the hospital and the deaths in the borough were only 65. A more striking case is that of Warrington. A similar Act came into operation in 1879, and towards the end of June, 1880, isolated cases

[1] THE LANCET, Feb. 23rd, 1901, p. 547.

of scarlet fever began to appear in the town, and between that date and December of that year 52 scarlet fever patients had been removed to the hospital as the result of this Act. They had been removed from 44 houses, some containing more than one family, and in those houses there were 101 children who had not had scarlet fever, yet in only one house did a second attack occur, this result being attained by the fact that notification led to immediate removal.

Now come we to Dr. Thorne Thorne's recantation. On March 24th, 1882 Question 5321, we find the Chairman asking: "I believe you wish to make some qualification of the evidence you gave upon a former occasion?"

Dr. THORNE THORNE: Yes. Referring to my evidence given in January last as to the measures taken at Leicester and Warrington I have thought it right to add some more recent evidence. ... .. I feel that the evidence I gave as regards Leicester and Warrington is open to the inference that in those boroughs the joint operation of a system for the compulsory notification of infectious diseases and the provision of a hospital for the isolation of those diseases did successfully check the spread of scarlet fever. More recent information does not, in my opinion, bear out that view to the extent I had anticipated. As regards Leicester, for example, a diminished scarlet fever mortality during the epidemic prevalence of 1879 was compared with that occurring during similar epidemics in 1870 and 1875, but the returns of the Registrar General for 1880 and 1881 point out that, notwithstanding the joint operation, since September, 1879, of a system for the notification of infectious diseases, and of a hospital for their isolation, *there has been a very long continued prevalence of scarlet fever*, and when the whole period of the latter prevalence is compared with that of the two former ones it would appear that the later epidemic has mainly differed from its predecessors *by being spread over a longer period*. Then the other instance was the case of Warrington. When I was in Warrington in 1881 I found that the epidemic appeared to have been all but checked, there being only three, four, and three cases of scarlet fever respectively admitted to hospital during the months of January, February, and March, 1881, and only four, four, and three cases notified in the borough during those several months. Since then, however, there has been a marked increase in the disease. I felt that this result did not bear out the inference which might be drawn from my previous evidence.

Question 5323: Are you aware of any sufficient reason why scarlet fever should have increased?

Dr. THORNE THORNE: No.

Dr. CARPENTER: I should like to ask if notification was carried out in Warrington to its full extent?—It would be difficult to find any place where notification had been so effectually carried out.

Question 5329: Notification has failed to "stamp out" disease at Warrington?—Yes.

On March 21st was taken the evidence of Mr. George W. Hastings, M.P., whose Bill, as I have already said, was then before the House of Commons.

Question 5112 (Dr. Carpenter): You believe that notification is required for the purpose of repressing and "stamping out" infectious diseases?

Mr. HASTINGS: Yes.

It is perfectly evident, then, that "stamping out" was the end and aim of those who originated this movement, and the idea that infectious diseases could and would be "stamped out" by such means was held largely notwithstanding the fact that there were not only no data to go upon but all previous experience (e.g., the prevalence in many hospitals of *hospital gangrene*) pointed to the fact that the aggregation of the sick—infective and other—was a mistake.

You make me say, Sirs, that "vital statistics are the third degree of comparison of unveracity." I respectfully point out that I neither said this nor anything like it. What I did say was that these were the only statistics upon which any sort of reliance could be placed. Like Mr. Jonathan Hutchinson "I distrust all statistics—no one more than I." I am not going to traverse the statement quoted from Whitelegge's book. Any man who knows and has worked with Dr. Whitelegge as I have would think twice before he tried to controvert his carefully collected facts. That "epidemics occur at more or less irregular intervals in most of the large towns" cannot, I submit, be received as a satisfactory explanation as to why preventive institutions when dealing with an infective disease each case of which can only have arisen from a previously existing case are impotent in the discharge of the functions for which they were established, even when isolating 90 per cent. of the cases.

You accuse me, Sirs, of changing my ground. Not so. If you hold that, before condemning these institutions *in toto* I ought to have backed up my condemnation by the publication of data, I shall cry *peccavi*. I hope shortly to bring before the profession the question as to what has been the effect on diphtheria of "isolation." I shall show that if hospitalism has blocked the way of sanitary progress so far as scarlet fever is concerned its effect has been infinitely worse in the case of diphtheria. I shall endeavour to prove that the way to prevent disease does not lie in the direction of aggregating the diseased. Sirs, the isolation hospital is the record achievement of misdirected effort in our time. To my certain knowledge this fact is known and recognised by many who are in the public health service. Why have so few the courage of their convictions? In what danger from what quarter does a man stand for the fearless expression of his opinions? What is the mystery?

Your readers will be interested, Sirs, in learning what views are beginning to prevail in Germany on this important question. The distinguished writer, Hueppe, hits off the situation admirably when he says (speaking of the central authority): "Instead of being always prepared to act in the spirit of preventive hygiene for the most part plods on in the good old way with 'fresh emendations to the appendix of the modified supplement of the most recent provisional administrative instructions.'" I give the views of this distinguished bacteriologist with the more pleasure because isolation hospitals had their inception in a crude and unscientific conception of the lessons to be learned from discoveries which had been made in the field of bacteriological research during the Pasteur-Tyndall-Miguel epoch. The sanitarian, impatient of tried methods—which, by-the-bye, had by no means been found wanting—and always on the *qui vive* for short cuts to the accomplishment of the ends he had in view, imagined that the royal road to disease prevention ran through that *inextricabilis error* which the bacteriologist had prepared for the medical scientist to wander in and get lost. Hueppe, in the last edition of his "Principles of Bacteriology," 1899, claims that the way to prevent the dissemination of disease germs is by improvement in the water and soil, control of the food-supply, and works of sanitation generally.

"Works of sanitation," says this writer, "act upon saprophytes and interfere with the dangerous forms of proteid putrefaction which play a rôle in intoxications and are of importance in the ontogeny and phylogeny of parasites. ..... Again, in the separation of the sick from the healthy we often overshoot the mark and the compulsory conveyance of the sick from the dwelling-place to the hospital is frequently very injurious. ..... The psychic disadvantages, also, are frequently quite considerable, and the abolition of humanity by bacteriology seems to me a step backwards. ..... Cholera convalescents, even after they have perfectly regained their health, may harbour germs for weeks ..... diphtheria convalescents may carry about bacilli for months. On this account compulsory isolation upon the basis of bacteriological findings may lead to the greatest injury. .. ... The imprisonment of healthy and convalescent individuals is an inadmissible restriction of personal freedom. ..... In diseases, too, of the character of scarlet fever we have, to the delight of martinets, done too much in the last decade in the matter of isolation. ..... The prevention of infective diseases is to be attained by combating the cause of disease," &c.

In conclusion, Sirs, let our friends of the public health profession be certain that the value of these institutions is being appraised by the intelligent section of the British public and it is a force they will not be able to resist. The individualist has been long weary of the sacrifice of the individual for the questionable good of the rest. The economist, who sees in an institution like ours a threepenny rate with no equivalent advantages, is fretting under the imposition of useless burdens, while the politician is standing aghast at the enormous growth of the municipal debt of this country in which he sees the setting in of the rot in our commercial prosperity.

I am, Sirs, yours faithfully,

Nottingham. EDWARD DEAN MARRIOTT.

*** We publish Mr. Marriott's lengthy communication because we feel it incumbent upon us to afford him an opportunity of replying to a leading article largely dealing with his views, but we do not see that he introduces any new matter quite pertinent to the controversy. He does not refer us to any memorandum of the Local Government Board which would justify the importance which he has attached to the stamping out thesis. He disclaims having written that "vital statistics are the third degree of comparison of unveracity." We refer him to the bottom of page 19 of a pamphlet which he sent us. He will there find these words, "Statistics are being pressed into the service—statistics which are notoriously the third degree of comparison of unveracity."—ED. L.

THE LIFE-SAVING STATION AT WATERLOO BRIDGE.

To the Editors of THE LANCET.

SIRS,—In the year 1872, at my suggestion, the Royal Humane Society established this station and appointed me medical officer thereto. About two years subsequently the station was, by arrangement, handed over to the Thames

Police, whose floating station was near at hand, and I was succeeded by the then divisional surgeon, Mr. Mills, of Southampton-street, Strand. I now, with much pleasure, inclose you a "return" from the superintendent of the Thames Police, showing the excellent work the station has done during the years it has been established. Having regard to the great number of suicidal and accidental drownings annually occurring in other parts of the Thames—notably Battersea, Putney, Hammersmith, &c.—I would ask you to urge the further provision of similar institutions at other parts of the river in the metropolitan area.—I am, Sirs, yours faithfully,

ARCHER FARR. L.R.C.P., L.S.A., &c.,
Late Medical Officer of Health, Lambeth,
Dip. Pub. Health (retired).

High-street, Putney, S.W., Feb. 21st, 1901.

[INCLOSURE.]

THAMES DIVISION.

Return of the Number of Cases Treated at Waterloo Pier Station during the Years 1897-8-9 (Vide Corr. No. 322034).

Year.	1 No. of persons accidentally immersed and brought to the station for treatment.	2 No. of persons who attempted suicide and were brought to the station for treatment.	3 No. of persons who were brought to the station and in each case life was pronounced extinct.	4 Total number of cases brought to the station for treatment.	5 No. of persons apparently drowned and restored to life by artificial means.
1897	8	22	10	40	1
1898	8	16	5	29	—
1899	7	13	16	36	—
Totals for three years	23	51	31	105	1

In a number of cases which cannot be included in column 5, "apparently drowned and restored to life," as there were evident signs of vitality, the sufferer would probably have succumbed to shock and immersion but for the prompt treatment by police. It is not possible to give the number of these cases from the records with accuracy.—WM. C. ROBINSON, Superintendent.

"CONCERNING CERTAIN APPARENTLY INJURIOUS CONSTITUENTS OF POTABLE SPIRITS."

To the Editors of THE LANCET.

SIRS,—In an article by us in THE LANCET of Dec. 8th, 1900, p. 1643, under the above title the statement occurs that "we made experiments upon cats, dogs, and rabbits." This statement we wish to correct in that our own experiments were only made upon cats and dogs. At the time of writing we had really in our minds not only our own experiments but those of a previous worker—viz., Cohn.[1] Our paper was intended only as a preliminary communication and experimental details will be given fully and compared with the results of others in a subsequent paper.

We are, Sirs, yours faithfully,

LAUDER BRUNTON.
F. W. TUNNICLIFFE.

Devonshire-street, Portland-place, W., Feb. 25th, 1901.

THE COVENTRY DISPENSARY.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Feb. 2nd, p. 353, under the head of "The Battle of the Clubs," there are some remarks concerning the Coventry Dispensary which the staff will be glad if you will allow them to correct. It is untrue that the reply which the staff received to their memorial was that "if they were not satisfied with their position another staff could be procured to take their places." Nothing whatever was said in the reply which could be thus construed. It is also untrue that the committee do "not hand over all the money received and thus exploited them" (the staff). All the money is divided amongst the staff after the working expenses have been paid. The number present at the meeting was 108, not 160, and so far from being unanimous there was a very large proportion who refrained from voting either for or against the resolution.

I am, Sirs, yours faithfully,

W. J. PICKUP,
For the Staff of the Coventry Dispensary.

Swanswell, Coventry, Feb. 23rd, 1901.

[1] Archiv für Experimentelle Pathologie und Pharmakologie, vol. xxxi., p. 40.

MEMORIAL TO THE LATE PROFESSOR TOM JONES.

To the Editors of THE LANCET.

SIRS,—It is proposed to establish some memorial of Professor T. Jones in the Owens College, and it is thought that his personal friends, and perhaps others, may wish to take part in providing the necessary funds.

No appeal will be made, but the treasurer or secretaries will be glad to receive contributions from those who desire to honour Professor Jones's memory.

The exact form the memorial will take necessarily cannot be settled till the amount of the fund is known, but it has been suggested that an exhibition or prize would be a suitable record of Mr. Jones's work.

It is not desired to limit in any way the amount of individual subscriptions, and it is hoped that those who may see this letter will bring it to the notice of other friends.

Subscriptions may be sent to either the honorary treasurer or the honorary secretaries.

Among the amounts already promised are the following:—

	£	s.	d.		£	s.	d.
D. Lloyd Roberts... ...	25	0	0	R. Bowen Hogg (New Zealand)...	5	5	0
Walter Whitehead... ...	25	0	0	W. Thorburn	5	5	0
G. A. Wright	25	0	0	Henry Ashby	5	0	0
Edward Roberts	21	0	0	Joseph Collier...	5	0	0
Alfred Hopkinson... ...	10	0	0	H. R. Hutton	5	0	0
J. E. Platt...	10	0	0	W. P. Montgomery ...	1	1	0
F. A. Southam	10	0	0				

The complete total promised is over £600.

We are, Sirs, yours faithfully,

HENRY ASHBY. D. LLOYD ROBERTS.
JOSEPH COLLIER. EDWARD ROBERTS.
ALFRED HOPKINSON, K.C. ALFRED SIMPSON.
F. A. SOUTHAM.
A. MCLAREN. W. THORBURN.
JOHN D. MILNE. WALTER WHITEHEAD.
W. P. MONTGOMERY. A. H. YOUNG.

G. A. WRIGHT, Hon. Treasurer,
16, St. John-street, Manchester.

J. E PLATT,
14, St. John-street, Manchester.
F. J. H. COUTTS,
Cromar, Plymouth-grove, Manchester.
} Hon. Secretaries.

January, 1901.

"THE TEACHING OF ANÆSTHETICS."

To the Editors of THE LANCET.

SIRS,—Dr. Frederic Hewitt's letter in THE LANCET of Jan. 19th, p. 212, in reply to that of Lieutenant-Colonel E. Lawrie in the number of Jan. 5th, p. 64, is chiefly characterised by the fact that it is in no way the answer it purports to be. If I may venture to sum up the letters it would be in some such way as this. Lieutenant-Colonel Lawrie says essentially that chloroform administered in a definite way may be given with safety by the ordinary man; while Dr. Hewitt says that chloroform as given in Britain by the ordinary man is very fatal (an undoubted fact, but scarcely an answer), and he hints that this is the effect of climate and not of the method of administration—or, at least, that is what I take his reference to "sunny Hyderabad" to mean. The intention of this letter is to lay stress on Lieutenant-Colonel Lawrie's statement that the effect of the London teaching is to tend to make the anæsthetist incompetent through fright, for I can testify from personal experience as well as from personal observation of the terror with which many recently qualified men in London approach the administration of chloroform, believing as they do that death may occur suddenly and inexplicably from syncope. My own experience was distressing until I realised that if chloroform could be given in India and in Edinburgh with confidence and safety by using a particular

method, it would be my own fault if I could not give it equally confidently and safely in London by using the same method; and so far as it went (some 300 anæsthetics only in London) the experiment, I believe I may say with entire truth, was a complete success.

Dr. Hewitt's observation on the number of deaths in Scotland is irrelevant, for he produces no proof that the drug was administered by Syme's method. *The method is everything.* By all means let the present scandal of sending out men to practise as fully qualified without practical knowledge of the giving of anæsthetics cease, but at the same time do not expect the present rate of mortality from chloroform to drop in Britain so long as the method of administration is that now in vogue. For several years I have been looking in the columns of THE LANCET for the description of a case of death from chloroform poisoning due to heart failure, but although many have purported to be so not one has borne investigation. If this is solving the chloroform problem clinically there are some who may differ from Dr. Hewitt in considering the solution final at present.

I am, Sirs, yours faithfully,

CLAYTON LANE, M.D. Lond.,
Captain, I.M.S.

Calcutta, Feb. 7th, 1901.

THE ORGANISATION OF THE PROFESSION.

(FROM OUR SPECIAL COMMISSIONER.)

(*Continued from p. 582.*)

The Demand for an Increase for Family Contracts.—The Appointment of a Solicitor as General Secretary.—The Systematic Method of Proceeding.—The Strike and its Success.

THE incident which acted as a special stimulant in bringing about the formation of the Northumberland Medical Association was the fact that the Backworth colliery surgeons had of their own initiative demanded 9*d.* instead of 6*d.* per family per fortnight. In answer to this large bills were put into circulation announcing that "The Backworth and District Medical Coöperative Association" were going to give advice from fully qualified medical practitioners with medicines of the best quality procurable, that the time of attendance at the surgeries would be arranged to suit the convenience of the public and to prevent patients having to wait, that in serious cases expert advice would be obtained on the recommendation of the medical officer of the association entirely free of cost, that water-beds, air-cushions, and other appliances would also be provided, and that there would be a trained and certificated nurse at the disposal of the members. All these multifarious advantages were to be secured by the modest payment of 6*d.* per fortnight, not for one individual, but for a whole family. It is true that 6*d* per fortnight per family is generally the sum paid by miners for medical aid in this district. But this sum is very often paid direct to the colliery surgeon. There is no organisation, no coöperative society or medical aid company, no lay committee of management acting as intermediary and sometimes taking upon itself to reprimand its medical officer. The more general arrangement is that the cashier who pays the wages to the miners deducts the sum they consent to pay to their medical attendant. But here was a coöperative society stepping in between the surgeon and his patients and proceeding to advertise in a tradesman-like manner. Though at that time the Backworth practitioners had no organisation to support them they determined to resist, and they sent in notice that they would not undertake to attend a whole family for less than 9*d.* per fortnight. The Backworth and District Medical Coöperative Association at once concluded that they would be able to import a medical officer, and they advertised in several papers. But by the time these advertisements appeared the Northumberland Medical Association had been formed and it immediately inserted counter advertisements advising that no one should go, but should first communicate to the association for information as to the dispute at issue. Also, considerable pressure was brought to bear to prevent anyone taking the place of the Backworth practitioners. The Backworth and District Medical Coöperative Association were able to import a medical practitioner, but before they achieved this they had been several weeks without any medical men working under contract. When a case of illness occurred the patients were obliged to seek the advice of a practitioner in the neighbourhood and were treated as private patients and charged the usual 2*s.* 6*d.* fee. The patients, however, did not pay this fee; it was the committee of the Backworth Coöperative Society that undertook to settle these accounts. In one case the amount due reached a considerable sum, but the account was purposely reduced to £50 so that the matter might be brought before a county court. The Northumberland Medical Association financially supported the Backworth practitioner to whom this sum was due, for in the meanwhile he had become a member of the association and the verdict was in their favour, and the miners had to pay the account and the legal costs. This verdict and the unsatisfactory result of importing an outsider finally broke up the Backworth and District Medical Coöperative Association. The miners now consented to pay 9*d.* instead of 6*d.* per fortnight for each household, and thus the medical men, after a struggle that did not last very long, were completely successful.

While this struggle was proceeding the Northumberland Medical Association amalgamated, as already described, with the Newcastle Medical Ethical Society and began to shape out its policy. One of the first points agreed upon was that throughout the county the fortnightly subscription should be 9*d.* and not 6*d.* for a family. Then circulars relating to the Broomhill medical aid organisation showed that there was a good deal of advertising practised in that locality. A deputation from this body was brought to Newcastle and they promised to cease advertising and canvassing. As for paying 9*d.* this they were also willing to do, but they wanted to provide a nurse and for this purpose proposed to deduct 1*d.* from the 9*d.* Then they were in the habit of taking 25 per cent. from the remaining 8*d.* and providing the drugs themselves. Doubtless this meant no loss as the drugs would probably cost 2*d.* out of the 8*d.*, but the objection is to intermediaries between the medical man and his patient. In the mining districts there is no need of societies to organise medical aid and, generally speaking, to manage the medical man's business for him. The paying cashier at the pit's brow collects the subscription as he pays the miners their wages and the colliery surgeon can quite well attend to all the rest himself. In regard to the particular case at Broomhill the matter for the moment stands in abeyance; canvassing and advertising have been abolished, the 9*d.* is paid, but subject to the deductions mentioned.

In regard to the miners in general, the first step has been to secure unanimity, not only among the colliery surgeons concerned, but also throughout the neighbourhood. Thus in six colliery districts on the north bank of the Tyne the 18 surgeons engaged were hesitating, but the President of the Northumberland and Newcastle Medical Association wrote personally to each surgeon and called upon some of them and by persistent personal effort induced them to sign and promise to observe the rules of the association. Counting the practitioners of the outlying districts who might have come in and done some of the work of the 18 colliery surgeons 36 signatures in all were obtained for this neighbourhood. All being now ready the 18 colliery surgeons were not exposed to the unpleasantness of entering upon a dispute with the miners among whom they live. It was from Newcastle that the communication was made and by the general secretary, Mr. Garforth Drury, who is a solicitor. The appointment of a solicitor as the secretary of a medical union is a new departure, but there is a great deal to be said for it. In this the Northumberland practitioners followed the example of the County of Durham Medical Union and the work is likely to be done in a business-like manner and there is less chance of committing some legal blunder. Then there are the office, the clerks, and everything necessary available every day. The communication made was worded as follows: "We have been requested by the council of the Northumberland and Newcastle Medical Association to apply on behalf of their members for a fortnightly payment from the members of"—here followed the names of the miners' organisations or collieries—"of 9*d.* from all householders and married men for medical attendance. The members of our association in your districts are," and here followed the names, not only of the 18 colliery surgeons, but of all the surgeons in the outlying districts, making 36 names in all. After this display of unanimity the notification continued: "And we are

requested to give you a fortnight's notice from the date hereof, after which time they will, as members of this association, be under an obligation to us not to accept less than the above rate. The reasons we advance for this rise in fees are: (1) the illegality now of employing any but qualified and registered medical men as assistants; (2) the increased cost of medical education, which now takes five years to complete instead of two and a half years; (3) the increasing difficulty of obtaining, and greater cost of, assistants' services; (4) the greater cost of drugs and surgical dressings; and (5) the increasing use of expensive instruments."

It will be seen that the whole responsibility is assumed by the medical union. The local practitioner who gives in his resignation is but a pawn in the game; he refers the miners' committees and all their deputations to the Medical Association. It is Mr. Rutherford Morison who, as President, has to answer all the objections and to receive all the abuse; but, generally speaking, the miners have recognised that the demands made were fair and just. In two places, however, on the north bank of the Tyne there has been opposition. In the first of these the resistance was very virulent. The men would not pay the 9*d*. and the colliery surgeons had to request the cashier at the colliery offices not to accept any men under 9*d*. Thereupon a deputation was sent to Mr. Morison asking him to put off the matter for a month, and after much discussion he consented to a postponement for a fortnight. This delay terminated with the end of last year and then another fortnight's prolongation was accorded so that Mr. Morison might go to the district and address a meeting of miners so as to explain the matter to them. Here he was pretty sharply heckled and the next thing that occurred was the publication in various newspapers of an advertisement inviting medical men down to the district. The Medical Association at once published counter advertisements urging medical men not to go to this district. Nevertheless, some applications for the vacant post were made and the miners accepted two medical men. The first candidate, however, failed to put in an appearance; the second had settled upon the day of his arrival, but Mr. Morison succeeded in obtaining his address and wrote to him at length. According to the answer received this medical man had been misinformed as to the true state of affairs and now promised not to go. Subsequently another practitioner accepted the offer, but telegrams were sent to him by the President of the Medical Association and his arrival was also stopped. Now it is reported that someone else is coming and letters and telegrams have been despatched to warn him off. but the result is not yet known. This local strike has lasted some three weeks and Mr. Drury has written to the local practitioners to say that he will support them in county-court actions against their patients who do not pay the 2*s*. 6*d*. fees. Thus the method of action is first thoroughly to blockade the district and to prevent the arrival of any outside help, and then to county court all patients for 2*s*. 6*d*. fees till such time as they consent to contract for 9*d*. instead of 6*d*. per fortnight per household.

In the second district where resistance has been offered the miners, as explained above, offered to pay the 9*d*., but wanted to provide the drugs themselves and to deduct a portion of the money for that purpose. Here the objection is against the formation of lay committees acting as intermediaries between the practitioners and their patients. Altogether and up to this date applications have been made in 17 collieries, and in 13 cases the increase of remuneration was acceded to without demur. In at least three out of the four other cases the Northumberland and Newcastle Medical Association has succeeded in preventing any outside practitioners answering the advertisements published and taking up the vacancies. Thus the efforts made have been, on the whole, very successful, a success in which the miners themselves have largely contributed by the reasonableness and fairness which they have shown in the vast majority of the cases.

Newcastle, Feb. 25th.

PREVENTION OF PHTHISIS.—A public meeting of the Gloucester, Somerset, and Wilts Branch of the National Association for the Prevention of Consumption and other Forms of Tuberculosis will be held at the Guildhall, Bath, on March 6th, under the presidency of the mayor, when an address will be given by Sir James Crichton Browne.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Health of the City.

THE report of the medical officer of health, Dr. Alfred Hill, for the fourth quarter of the year 1900 presents some interesting details, among others an exceptionally low birth-rate and an unusually satisfactory death-rate, the former being 29·4 per 1000, the latter 18·2 per 1000. Certain parts of the city show marked contrasts. Dr. Hill points out that the value of the zymotic death-rate has been greatly depreciated in recent years by the use of the term "enteritis" as a synonym for diarrhœa and expresses the hope that in future the complaint will be certified as due to "zymotic" or "epidemic enteritis." The cases of diphtheria were less numerous; 30 of those reported occurred in the Blue Coat School, the scholars having to be disbanded. A recurrence took place among a few scholars on their return. Advantage was taken of bacteriological knowledge for no less than 455 specimens from the throats of the scholars were examined at the University laboratory. Certain sanitary defects in the school were remedied and no more cases happened.

The Mond Gas Scheme.

Questions of health and comfort are closely connected with purity of the atmosphere. This depends largely on the commercial undertakings in manufacturing areas. In and around this city are many large works and manufactories which contribute greatly to the vitiation of the surrounding air by pouring forth dense volumes of smoke and emitting fumes of a noxious and disagreeable character. Some of these evil results, it seems, may be combated and rendered far less detrimental by the aid of scientific discoveries of recent date. The subject was discussed on Feb. 21st at an important meeting of those interested in the industrial life of the Midlands. The object of the meeting was the consideration of the Bill now before Parliament for conferring powers upon the South Staffordshire Mond Gas (Power and Heating) Company. It was stated upon high authority that the introduction of this gas into the district would be an enormous benefit and advantage, because the gas could be made cheaply and the sulphate of ammonia contained in the fuel could be preserved instead of being thrown away as it has been for so many years. It would be suitable for driving machinery and would save all cost of stoking and clearing away ashes, besides being free from tar and dust. It was stated by Sir Alfred Hickman that the use of Mond gas as compared with ordinary gas was analogous to the use of charcoal as compared with coal. Principal Lodge of the Birmingham University expressed his opinion that so long as they continued to burn crude coal in a fashion which he condemned as barbarous and half-civilised so long would the chimney shed its sombre shadow on our industrial existence. It may be the beginning of an evolution in our town life if the promoters of this scheme realise their aspirations in the project before them.

The Value of District Nurses.

The twenty-ninth annual meeting of the friends of the Birmingham District Nursing Society was held on Feb. 19th under the presidency of the Lord Mayor (Alderman Edwards). The report showed that during the past year 2501 cases were nursed and 57,432 visits were paid by the society's nurses. The expenditure had increased and an adverse balance of £40 was shown. The value of the work done was pointed out in forcible terms, and also that while the work had greatly increased the number of nurses had not been increased in proportion owing to the want of adequate funds. The comparison with other large towns, such as Manchester and Liverpool, in this particular kind of nursing showed that Birmingham was much behind. Thus in Manchester and Salford there were 55 nurses and five homes, while in Birmingham with much the same population there were 17 nurses only. The subscriptions in the two places were notably different, Manchester raising some £3000 per annum, while Birmingham secured only £579 for the same purpose. Various remedies were proposed which may be successful in placing this useful institution upon the better footing which it deserves.

Feb. 26th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Liverpool School of Tropical Medicine: Health and Sanitation in West Africa and the Tropics.

A LARGE and influential meeting was held at the Town Hall on Feb. 12th under the presidency of Mr. Alfred L. Jones, in connexion with the School of Tropical Medicine, "to consider the subject of health and sanitation in West Africa and the tropics in the light of the researches of the three malaria expeditions of the School of Tropical Medicine." Among those present were Sir William S. Church, Bart., the Lord Bishop of Liverpool, Principal A. W. W. Dale of University College, Dr. F. W. Mott, F.R.S., &c. Sir William Church said that two years ago he had the pleasure of being present at the inaugural gathering of the School of Tropical Medicine, and he was pleased to find himself at the present meeting. Referring to the enthusiastic manner in which the movement had been taken up alike by members of his own profession and by leaders of the commercial interests it naturally followed that success was assured. Sir William Church congratulated the school upon its wisdom in sending out three expeditions to the West Coast of Africa and a fourth was now engaged in studying a not less dreadful foe to mankind than malaria in its own haunts. Professor R. W. Boyce said in justification of the wisdom which had originated the movement that three West African expeditions had come back heaped up with results which were now becoming classical. Commercial schemes would have a far greater chance of success from the results of the researches which had been, and were yet to be, undertaken. Speaking of the untimely death of Dr. Walter Myers at Parà in Brazil he said it came to himself as a great shock, particularly as he was responsible for Dr. Myers becoming a member of the expedition. He hoped that they would have not only a thoroughly well-endowed chair of tropical medicine in memory of the late Dr. Myers, but also scholarships connected with it. The Bishop of Liverpool also addressed the meeting and paid a handsome tribute to the citizens of Liverpool for their enterprise in establishing a school of tropical medicine. Major Ronald Ross, late I.M.S., in an interesting address dealt with the three expeditions to the West Coast of Africa. He advocated the importance of Europeans living at a distance of at least half a mile from the huts of the natives, and effectual surface drainage around the European quarters. He also pointed out that the only safe supply of water in the country was the rain. He hoped some day to see tracts of West Africa rendered by careful sanitation as healthy as India.

The Health Committee and the Lady Sanitary Inspectors: the Voluntary Notification of Phthisis.

From a report of the proceedings of the Health Committee it would appear that some members of the committee are sceptical of the value of the services of the lady sanitary inspectors. Alluding to a shocking case of child neglect and domestic squalor reported in the local papers, Alderman Ruddin, J.P., asked what the lady inspectors were doing. He understood that the female inspectors were intended to take notice of such cases. Alderman Roberts said that he thought when these ladies were appointed they would go into the houses of the poor and that the city would get rid of all squalor, crime, and child neglect. The chairman said that there were only eight lady sanitary inspectors. They visited the houses of the poor in the lower parts of the city and gave instructions in domestic matters and the care of children. They reported daily to the medical officer of health. It was an important but difficult work and the ladies were working very hard and, thanks to their tact and kindness, they were now generally well received. Their efforts had already had a good effect on the health of the poorer localities. The cost of the lady inspectors is about £12 per week.—The medical officer of health (Dr. E. W. Hope) has issued a circular letter stating that in future a fee similar in amount to that payable under the Infectious Diseases (Notification) Act will be paid in respect of all cases of phthisis notified in which disinfection of rooms or clothing, or other action on the part of his department, is indicated as desirable. Hitherto no fees have been paid for the voluntary notification of cases of phthisis.

The Lord Mayor's Hospitals Century Fund.

The Hospitals Century Fund initiated by the Lord Mayor for the liquidation of the debts upon the hospitals of the city has now reached £10,016 9*s*. Upon the receipt of a further sum of £130 it is the Lord Mayor's intention to distribute to the charities at the rate of 10*s*. in the pound.

Bequests to Liverpool Charities.

By the will of the late Mr. William Henry Shirley of Allerton, retired steamship owner, who died on Jan. 31st, 1901, the following Liverpool charities will benefit: the Royal Infirmary, £5000; the Liverpool Dispensaries, £4000; the Infirmary for Children, £1000. The David Lewis Northern Hospital, the Royal Southern Hospital, and other charities are also included as legatees.

The Hospital for Cancer and Skin Diseases: an Unenviable Situation.

IN THE LANCET of Feb. 6th, p. 513, reference was made to the friction which again unfortunately exists at this hospital. Further developments, following upon the rejection at the annual meeting of Colonel John Pilkington, the chairman of the committee, have now taken place. As a protest against the exclusion of a gentleman who had used every endeavour to further the interests of the charity, Dr. W. T. Blackledge and Dr. S. Mathews, two of the assistant medical officers, have resigned their appointments. Four members of the committee, including Alderman Grindley and Colonel Frank Walker, have also resigned, as well as the matron, the sister, and all the nurses. Even the domestic servants have declined to be further connected with the institution. Colonel Pilkington, the late chairman, took a great interest in the management of the hospital and was chiefly instrumental in framing new rules and regulations based upon those of the principal hospitals in Liverpool, London, and Dublin. Dr. W. T. Blackledge's name is specially mentioned in the report recently issued to the subscribers at the annual meeting for the creditable manner in which he had performed the additional duties imposed upon him by the absence of his senior at the seat of war. As this charity receives subscriptions and donations from the public an independent and searching inquiry into the whole question is urgently called for.

Feb. 26th.

WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Isolation Hospital at Pontypridd.

AS long ago as May, 1895, Dr. William Williams, the medical officer of health of the county of Glamorgan, in a special report upon the isolation hospitals within the county urged the necessity for such an institution at Pontypridd, and from time to time during the subsequent years the urban district council have been reminded of their responsibilities in this direction. In the report referred to Dr. Williams advised that the urban and rural districts might with advantage combine in the erection of a joint hospital. The area of the combined districts is 25,000 acres, with a population of about 50,000 persons. As there appeared to be no prospect of any satisfactory arrangement being made between the two district councils, the urban council have at last decided to build a hospital to serve their own district alone where there is a population approaching 42,000. The Local Government Board have been asked to sanction a loan for £7930, a sum which it is estimated will cover the cost of the site of the hospital, the buildings, and furnishing. There will be an administrative block, two ward pavilions with 10 beds in each, and a laundry and disinfecting block. It is not proposed to erect an observation block and as provision is only made for the treatment of two diseases at one time the accommodation can hardly be said to be adequate for the needs of the district, which is essentially of a working-class character.

Merthyr General Hospital.

The Merthyr General Hospital was established in 1887 with 29 beds and has always been in the fortunate position at the end of each succeeding year of having a balance upon the right side, so that a sum of nearly £600 has accumulated. In 1899 the balance of income over expenditure was £92 and last year it was £39. The total income for 1900

amounted to £1400 and the weekly cost per bed is said to be under £1. During last year 222 cases, including 81 accidents, were treated in the hospital. At the annual meeting of the supporters of the institution held on Feb. 20th Sir William Thomas Lewis was elected president in succession to the late Marquis of Bute, who had during his lifetime contributed from time to time sums amounting to £3000 towards the erection and establishment charges of the hospital. It is proposed to increase the accommodation in the nursing home and to light the entire buildings with electric light.

Health of Aberystwith.

The medical officer of health of Aberystwith states in his annual report that there were only 19 cases of infectious disease notified to him during last year, but he considers that the circumstances surrounding some of the cases showed the need of an isolation hospital. At Llandudno a fever hospital was established in 1881 and in 1897 was enlarged to accommodate 26 patients. It is quite as necessary for a health resort which desires to hold its own among its rivals to provide an isolation hospital as it is to erect a pier or a promenade, and the Aberystwith Corporation will be well-advised if they speedily give effect to the recommendation of their medical officer of health.

Swansea Workhouse.

Upon the resignation early in the year by Mr. D. Howell Thomas of his Poor-law appointments in Swansea the board of guardians decided to divide his district into two portions and to appoint for the town portion and the workhouse a medical officer at a salary of £250 per annum. This combination is not viewed with favour by the Local Government Board. The Board think that it will not permit of systematic attendance at the workhouse and suggest that an assistant medical officer shall be appointed for the workhouse alone who shall reside in or near the establishment and devote his whole time to his duties, while the medical officer for the town district shall act as medical officer for the workhouse for consulting purposes only. The board of guardians have not yet come to any decision in the matter.

Devon and Exeter Hospital.

The annual meeting of the subscribers of this institution was held on Feb. 21st. The medical report stated that 1219 in-patients had been admitted, against 1322 in 1899. The out-patients numbered 5067, compared with 4303 in the previous year. The average daily number of in-patients was 141. The financial statement showed that the total receipts amounted to £12,781 and the expenditure to £14,555. The total deficit of the hospital at the end of 1900 amounted to £2402. The President (Mr. W. Buckingham) made a strong appeal for increased support to the institution and added that the unfavourable balance would be met by realising a legacy from the late Miss S. Northcote of £3000.

Feb. 25th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh Asylum for the Insane.

THE annual meeting of the corporation of this institution was held in the City Chambers on Feb. 25th, Sheriff Rutherford presiding. In their annual report the managers referred to the fact that Queen Victoria was for 60 years patroness of the corporation, and that in 1841, when her Majesty bestowed on them this honour, there were only 39 patients. During the year 1900 the number of patients under treatment in the asylum averaged 940, including 377 private patients, for whom various scales of charges existed, and 563 patients chargeable to parochial authorities. The ordinary revenue amounted to £57,139, and after all payments were made there remained a free surplus of £3601. The cost per head of the pauper inmates during 1900 was £31 14*s.*, against £32 11*s.* for the year 1899, the greater part of the decrease being due to the distribution of the fixed charges over a larger number of patients. The number of pauper patients at Morningside was greatly in excess of that for which the asylum was designed. It was probable that more than a year must elapse before the new district asylum was ready for occupation, and the managers could not without anxiety contemplate the prospect of having to find accommodation for the ever-increasing number of paupers. Dr. Thomas S. Clouston, the superintendent, in submitting his annual report said that the past year had been a record one for admissions, the number being 38 over the average of the past five years. The increase had been entirely in rate-paid cases, chiefly from Edinburgh, of whom 400 were admitted during 1900, a number which was 68, or 20·5 per cent., over the average for the past five years. In seeking for an explanation of such an increase of insanity among artisans and labourers he was inclined to think that the excessive use of alcoholic liquors during prosperous times was to a great extent the exciting cause. The new Inebriates Act was almost a dead letter. On the general question of the increase of mental disease in the country Dr. Clouston said that in the 20 years 1880–1899 the accumulated aggregate of patients paid for from private sources had increased only 378, or 16 a year, over what the increase of population would account for; but in the case of the rate-paid patients the increase in the accumulated aggregate had been 2646, or 124 a year, over what the increased population would account for. In the northern and Highland counties, which were either rural or bordering on the sea, the increase had been 80 per cent.; while in the rest of Scotland it had been 42 per cent., and in Edinburgh there had been a slight decrease relatively to the augmentation of population.

Glasgow Royal Infirmary.

IT is understood that negotiations are proceeding between the managers of the Jubilee Committee regarding the financial obligations of the reconstruction scheme. In the meantime the Glasgow Archæological Society, influenced, presumably, by the verdict of the Institute of Architects, has passed a resolution protesting against the adoption of any design likely in any degree to impair the æsthetic effect of the neighbouring cathedral. The society expresses the opinion that the present elevation of the infirmary is "dignified and suitable to the locality." Apart altogether from the question of the practical value or otherwise of the new plans it is felt in many quarters that it would be a mistake to remove the front elevation of the present building. This possesses both historic and architectural value and its loss would be inadequately compensated for by the substitution for it of a brand new Jubilee porch.

The Small-pox Epidemic in Glasgow.

In consequence of the reduction in the number of cases of small-pox in Glasgow an official statement will in future only be issued once a week. The latest bulletin appeared on Feb. 23rd, when the cases in hospital numbered 355. Dr. A. K. Chalmers in his report attributes the shrinking of the epidemic to the widespread recourse to revaccination which has occurred during recent weeks. He warns the public that the danger is not yet over and commends the action of the corporation in recommending revaccination as a condition of service in the various departments. The report also contains a fairly plain hint that the standard of domestic and personal cleanliness in many districts of the city falls far short of what is necessary both for individual and public well-being.

Microscopical Society of Glasgow.

At a meeting of this society on Feb. 21st Professor John Glaister lectured on "The Intercommunicable Diseases common to Man and the Lower Animals." The lecture dealt with the principal diseases capable of being transferred from animals to man and was illustrated by an excellent series of preparations and micro-photographs. On the motion of the chairman, Dr. Rankin, Professor Glaister received a cordial vote of thanks.

Success of Glasgow Students.

Much satisfaction is felt in medical circles at the announcement that at the recent examination for the Indian Medical Service the first place on the list was gained by Mr. Anderson G. M'Kendrick who is a Glasgow graduate and a son of the popular professor of physiology. Dr. Norman Scott, who gains the fifth place in the competition, is also a graduate of Glasgow University.

Unusual Legal Case.

A case of a somewhat unusual character recently came before the Glasgow Police-court. It appears that three adults residing in a house from which a man suffering from small-pox had been removed to hospital refused either to be revaccinated or to go to a reception house. The police authorities therefore applied to the magistrate for a warrant to authorise their detention and this was accordingly granted.

Dr. Chalmers, who gave evidence, said that the house consisted of only two apartments and could not be properly disinfected while people were occupying it.

Medical Officer for Paisley.

Dr. Alexander Robb of Hamilton has been appointed medical officer of health of the burgh in succession to Dr. William Robertson, who has received a similar position at Leith.

Feb. 26th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal University of Ireland.

AT a meeting of Senate of the Royal University of Ireland, held on Feb. 21st in Dublin, among other matters the following resolution was unanimously adopted:—

That, in the opinion of the Senate, the relations of the University with its own colleges and students and with other colleges and students are unsatisfactory, and that it is most desirable that a Royal Commission should be issued to inquire into the working of this University as an examining and teaching body in relation to the educational needs of the country at large, and to report as to the means by which university education in Ireland might receive a greater extension and be more efficiently conducted than it is at present.

If the Government, acting on this suggestion, appoints a Royal Commission the whole question of Irish university education will again be thrown into the melting-pot, and if only some stable condition of affairs arise instead of the present uncertainty the inquiry will do good. I understand that the Senate have also taken action on another important question. There have been constant complaints about the character of the examinations in medicine not only in the Royal University, but in its predecessor, the old Queen's University. The examiners are now instructed to confine their examinations to the subjects treated in the text-books in common use in the medical schools of the kingdom and to the cases met with in ordinary hospital practice. Clinical examiners will not be allowed to examine candidates on cases under their own care. In addition to these excellent instructions the Senate passed resolutions unanimously to appoint for the October examinations extern examiners in surgery, midwifery, ophthalmology, and pathology. It is obvious that these examiners must be men of standing and experience not connected with any of the Irish medical schools.

Londonderry Infirmary.

Mr. Lee Hogg has proposed to fit out at his own expense the waiting room and extern department for the infirmary in Londonderry.

Feb. 26th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Impure Water-supply to Hospitals.

AT the Hospitals Medical Society, a meeting of which was held on Feb. 1st, M. Troisier remarked that as hospital reform was in the air it was interesting to note that the water laid on to the Paris hospitals was in many cases drawn from impure sources. Close to his own wards there were three taps. Two of these delivered water from the Seine and one water from the Dhuys. It was quite certain that only too often the patients and even the nurses drew water from the tap nearest to hand without looking at the labels over them. One of M. Troisier's patients had to have his stomach washed out. This was done with impure water and on the thirty-sixth day of his stay in the hospital he developed typhoid fever. M. Ballet replied that typhoid fever could be caught in the most unexpected ways. Thus a delirious patient of his used to have baths. Sometimes she would disappear under the water dragging with her the nurse. They both developed typhoid fever on the same day. M. Letulle said that the matter was worthy of the strictest attention. At the Boucicaut Hospital, which is quite new, seven cases arose. Of these three were patients, two being pregnant women and one a case of tuberculosis. Besides these there were four nurses, two from the lying-in wards and two from the medical wards. Of these women five could not have been infected from outside—namely, the three patients and the two lying-in ward nurses, for they had never seen a case of typhoid fever. Only the two medical nurses could have been infected directly. Thus five out of seven cases were probably due to the impure water.

Hæmatemesis during Appendicitis.

At the meeting held on Feb. 12th M. Dieulafoy read a paper before the Academy of Medicine on the cases of a certain number of patients who had suffered from hæmatemesis during attacks of appendicitis. M. Dieulafoy said that the complication must be fairly frequent, as he himself had seen six cases in less than a year and various other observers had published accounts of the same thing. The hæmatemesis is always ushered in by nausea and bilious vomiting; it attacks children as well as adults and commonly recurs two or three times at short intervals. Moreover, it is very often fatal. The quantity of blood brought up at each attack is very considerable—namely, 200, 300, or as much as 800, grammes. It sometimes comes up in a liquid condition and at other times as clots of a deep black colour. The attacks occur almost without exception in persons who have been operated upon too late and is as a matter of fact a manifestation of a general infection. That this is so is proved by the fact that the attack is preceded by other symptoms of toxæmia, such as jaundice, urobilinuria, albuminuria, and the like. It is the discharge of this toxic principle by the gastric mucous membrane which gives rise to the hæmorrhage, the immediate cause of which is small ulcers which are generally situated in the neighbourhood of the pylorus. The conclusion which M. Dieulafoy drew from these facts is that appendicitis is an infection which is a menace to the whole organism. The chances of a cure are greater in proportion to the early removal of the focus of infection.

The Therapeutics of Lecithin.

M. A. Gilbert and M. L. Fournier communicated a paper to the Society of Biology at the meeting held on Feb. 9th on the Therapeutics of Lecithin in the Human Being. Most observers agree in attributing to this substance a considerable rôle in the process of nutrition and as favouring the assimilation of nitrogen and of phosphorus. The lecithin which M. Gilbert and M. Fournier employed was obtained from the yelk of eggs. Given to animals in the laboratory, whether by the mouth, by subcutaneous injection, or by injection into the peritoneal cavity, in doses of from two to five grammes at a time or in small doses such as 0·10 to 0·20 of a gramme, long continued, it appeared to be absolutely devoid of any toxic quality. The animals gained rapidly in weight, a fact which was very noticeable in young animals which rapidly overpassed the controls in weight. M. Gilbert and M. Fournier gave lecithin to patients by the mouth in the form of a pill in doses of from 0·05 to 0·15 of a gramme every two days. In the case of some patients with advanced tuberculosis either on one or both sides they obtained the following results. The appetite and strength improved and the weight went up in spite of high fever which existed in one case. In two cases the cough became less frequent, the expectoration lessened, and the quantity of bacilli in the sputum diminished. M. Gilbert and M. Fournier have also given lecithin to patients suffering from neurasthenia and other forms of nervous disease but found it difficult to draw any definite conclusion from the results obtained. In general, however, they thought that the appetite and general health improved. They finally concluded (1) that the prolonged administration of lecithin is no more harmful to man than to the lower animals; and (2) that the therapeutic results so far obtained, although not complete, are yet encouraging and justify the use of lecithin in the human being.

Carbonic Oxide Poisoning.

A defective stove has again been the cause of a terrible catastrophe. Nearly all the inmates of a hospital ward have been poisoned by the emanations from an apparatus of this kind. One of the wards in a private asylum at Noisy le Sec, near Paris, contained nine beds. Of the occupants of these seven were found in the morning to be dead, and of the two who were still alive one has since died. The inquest showed that, according to the evidence of the survivor, the fault lay entirely with the patients. The stove was always put out at 8.30 P.M., but the patients who had been complaining of the cold smuggled in some charcoal during the day and charged the stove afresh after the departure of the nurse. They filled it so full that they raised up the lid of the stove and so the gases escaped into the room with lethal effect.

Feb. 26th.

Obituary.

WILLIAM JAMES FLEMING, M.D., F.F.P.S. GLASG.

WE regret to announce the death of Dr. W. J. Fleming of Woodside-terrace, Glasgow, which took place on Feb. 25th. The deceased, who was only in his fifty-second year, received his medical education at the Universities of Glasgow and Edinburgh. In 1872 he became qualified as M.B. Glasg. and L.F.P.S. Glasg. In 1875 he was admitted F.F.P.S. Glasg. and in 1879 he proceeded to the degree of M.D. An industrious and energetic worker, he made several contributions to medical periodicals, one of them being an article on the Treatment of Disease of the Spinal Column, which appeared in THE LANCET of April 27th, 1889.

Our Glasgow correspondent has sent us the following appreciative notice of Dr. Fleming's work and character: "During the whole of his professional life Dr. Fleming has been well known in medical circles and has taken a prominent part in hospital work and medical teaching. Commencing his career as a lecturer on physiology in the Royal Infirmary School of Medicine, he afterwards became surgeon to the infirmary and at the end of his term of service was elected to be one of the managers of the institution by the Faculty of Physicians and Surgeons. In this latter capacity he took deep interest in the proposed scheme of reconstruction, and his influence in securing a sounder recognition of the position of the visiting staff was much appreciated by the profession. Besides teaching clinical surgery at the Royal Infirmary he was at various times lecturer on surgery at Queen Margaret College, examiner on the same subject in the University, and surgeon to the Royal Hospital for Sick Children. He was also for a number of years a member of the examining board for the Scottish triple qualification. Personally, Dr. Fleming commended himself to his friends by a gentleness of heart which from the stranger was concealed by a manner that seemed to be free from all sentimental leanings. But his practical kindliness was as sincere as it was unostentatious. To all his *confrères* he was known for his undeviating straightforwardness and honesty of purpose. He has left behind him in many hearts a sense of personal loss which will not readily be extinguished and more than one medical institution is his debtor for public service rendered with resolute courage and unquestioned rectitude of motive."

JAMES NICOL, M.D. GLASG., J.P.

BY the death of Dr. James Nicol, which occurred on Feb. 20th, Llandudno has lost one of its oldest and best known residents. Dr. Nicol was born at Carnwath, Lanarkshire, in 1815, studied medicine in Glasgow and Edinburgh, and graduated as M.D. of Glasgow University in 1839. He commenced practice in Carnwath, but in 1858 removed to Llandudno where he made a special study of the climate and instituted systematic meteorological observations which have been carried on continuously up to the present time. For about 20 years he held the appointment of medical officer of health and in this capacity he was able to accomplish much in the way of improving the sanitation and the water-supply of the place. The building of the pier and the laying out of the road round the Great Orme were also largely due to his energy and public spirit. Dr. Nicol was the author of small treatises "On the Climate of Llandudno," "Bathing, its Principles and Practice," and "Llandudno as a Health Resort." He was a Member of the Scottish Meteorological Society, a Fellow of the Royal Meteorological Society of England, and a Justice of the Peace for the county of Carnarvon.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Hermann Pfeiffer of Darmstadt, formerly Director of the hospital there and author of many memoirs on Hygiene. He was 71 years of age.—Dr. R. B. Cole, Professor of Midwifery and Gynæcology in the University of California, San Francisco.—Dr. H. Shapiro, Professor of Medical Diagnosis in Helena Pavlona Clinical Institute, St. Petersburg.—Dr. Augusto da Rocha, Professor of Clinical Medicine in the University of Coimbra, Portugal.—Dr. Leopold Weiss, Professor of Ophthalmology in Heidelberg.—Dr. Theodor Husemann, Professor of Pharmacology in the University of Göttingen, at the age of 67 years. He was a voluminous contributor to medical literature.—Dr. Julius Homann of Hamburg, one of the Assistants in the Kiel Hygiene Institute, has died from enteric fever which he contracted while engaged in the study of pure cultures of virulent typhoid bacilli.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—In February the following candidates passed in the subjects indicated:—

Surgery.—G. Aldridge, London Hospital; E. A. Dunn (Section I.), Royal Free Hospital; J. C. Furness, Glasgow and Charing-cross; B. Goitein (Section I.), Vienna; H. B. Hanson (Sections I. and II.), Royal Free Hospital; H. A. Higgens (Section II.), Guy's Hospital; H. Jessop (Section II.), Birmingham; R. A. Jones (Section I.), St. Mary's Hospital; S. Page (Section II.), Birmingham; J. Ward (Sections I. and II.), Sheffield; and G. H. Watson, St. Bartholomew's Hospital.

Medicine.—C. E. C. Child (Sections I. and II.), Charing-cross Hospital; H. E. Darlington, Birmingham; M. E. Fendick (Sections I. and II.), Royal Free Hospital; G. J. W. Keigwin (Section I.), London Hospital; G. R. Lucas, Edinburgh and Charing-cross Hospital; F. McTavish (Sections I. and II.), Toronto; S. Page (Section II.), Birmingham; E. R. Risien (Section II.), St. Bartholomew's Hospital; and P. Southan (Sections I. and II.), Birmingham.

Forensic Medicine.—C. E. C. Child, Charing-cross Hospital; H. E. Darlington, Birmingham; E. N. de V. Dawson, St. Thomas's Hospital; G. J. W. Keigwin, London Hospital; F. McTavish, Toronto; S. R. Thomas, Guy's Hospital; and M. J. Williams, St. Bartholomew's Hospital.

Midwifery.—C. H. Brookes, Durham and St. George's Hospital; A. E. U. Hawkes, Liverpool; W. J. Hogg, Belfast; H. Howells, St. Thomas's Hospital; J. Kemp, Manchester; J. C. McCarroll, Belfast; D. Morrow, Middlesex Hospital; E. C. Pratt, Birmingham; J. Ward, Sheffield; C. Watson, Dublin and Westminster Hospital; and E. Yoxall, Birmingham.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—C. H. Brookes, M. E. Fendick, J. C. Furness, H. B. Hanson, A. E. U. Hawkes, S. Page, and G. H. Watson.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bologna:* Dr. Bolognini has been recognised as *privat-docent* of Pædiatry and Dr. Fochessati as *privat-docent* of Orthopædics.—*Copenhagen:* Dr. J. Fibiger has been appointed to the chair of Pathological Anatomy in succession to the late Professor Lange.—*Cracow:* The gynæcological clinic, under Professor Jordan, has had to be closed for the purpose of thorough disinfection, no less than five cases of septicæmia having occurred within a fortnight.—*Giessen:* Dr. Dannemann has been recognised as *privat-docent*.—*Göttingen:* Dr. A. von Hippel of Halle has been appointed to the chair of Ophthalmology.—*Gratz:* Dr. Adolf Jarisch, Extraordinary Professor of Dermatology, has been promoted to the Ordinary Professorship of this subject.—*Greifswald:* Dr. Alexander Westphal, a son of the late well-known neurologist of Berlin, has been appointed Extraordinary Professor of Psychiatry and Neurology.—*Halle:* Dr. H Schmidt-Rimpler of Göttingen has been appointed to the chair of Ophthalmology.—*Heidelberg:* Dr. Franz Nissl and Dr. Georg Marwedel have been promoted to Extraordinary Professorships. Dr. Braus of Würzburg has been offered an Extraordinary Professorship of Comparative Anatomy.—*Kieff:* Dr. A. Muratoff, Professor in the University of Iurieff (Dorpat), has been appointed to the chair of Midwifery and Gynæcology in succession to Dr. Rein.—*Lemberg:* Dr. Adam Solowij has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Moscow:* Dr. Minakow has been appointed Extraordinary Professor of Forensic Medicine.—*Pavia:* Dr. Costanzo Zenoni of Turin has been recognised as *privat-docent* of Pathological Anatomy.—*Tokio:* Professor Beneke, Prosector in the Brunswick Hospital, has been offered a Professorship.—*Vienna:* Dr. Arthur Katz has been recognised as *privat-docent* of Internal Medicine.

THE LATE PROFESSOR A. HUGHES.—At the meeting of the court of governors of the University College of South Wales and Monmouthshire held on Feb. 20th, Dr. W. T. Edwards stated that £800 had been received towards the £1000 required for the museum of anatomy proposed as a memorial to the late Professor A. Hughes.

BRISTOL HOSPITAL SUNDAY FUND.—At a meeting of the council of this fund, held on Feb. 20th under the presidency of the Lord Mayor, the honorary treasurer reported that he had received £1619 from 215 collections, and that there were still the results of 25 collections to come in. Last year the fund realised £1314. The council decided to distribute £1500 amongst the various Bristol medical charities.

PRESENTATION TO A MEDICAL MAN. — On Feb. 9th, at a numerously attended social meeting in the Tweeddale-street Board School, Rochdale, under the auspices of the St. John Ambulance Corps, Mr. Richard B. Sellers, M.R.C.S. Eng., L.R.C.P. Edin., was presented by the corps with a pair of silver flower vases, as a token of appreciation for his instructive lectures to the members of the ambulance classes.

CHILD INSURANCE.—The grand jury at the Bristol Assizes on Feb. 21st found true bills against an insurance clerk and his wife who are charged with attempting to murder the man's young son. The child was insured, and the grand jury submitted a presentment recording their opinion that the abuse of child insurance should be inquired into and dealt with by Parliament. Mr. Justice Darling promised to forward this to the Home Secretary and said that no doubt it would receive attention.

AN INTERNATIONAL CONGRESS OF NURSES. — There is to be an International Congress of Nurses in Buffalo, U.S.A., next September, during the time of the Pan-American Exposition. We are informed that the Congress meets with the intention to celebrate the new century and to cement and strengthen the national and international organisations which the nurses of America, Great Britain, the English colonies, Denmark, and Holland have for the last few years been intent upon developing.

ROYAL COLLEGE OF SURGEONS IN IRELAND: FELLOWSHIP EXAMINATION.—The following candidates having passed the necessary examination have been admitted Fellows of the College: Mr. E. A. Chartres, Mr. Patrick I. Dempsey, Mr. A. Fullerton, Mr. J. J. Harding, Mr. P. K. Joyce, Mr. G. M. Keating, Mr. R. J. D. Kenny, Mr. J. M. Morrissey, Mr. J. O'Donoghue, Mr. R. H. Oliver, Mr. C. J. Powell, Mr. T. O'C. Redmond, Mr. T. N. Smith, Mr. E. F. Stephenson, Mr. E. W. Stoker, Mr. F. Warren, and Mr. T. Wilson.

PATRICROFT WORKHOUSE HOSPITAL. The new infirmary of the Barton-upon-Irwell Union Workhouse was recently opened. The estimate for the work so far completed—i.e., the infirmary itself—was £18,900, but the entire scheme, which includes nurses' home, &c., will cost £30,000. It is on the pavilion principle, extending to right and left from the central offices which are connected by a corridor to the workhouse itself. Dr. J. M. Rhodes was present and in the course of the proceedings said he thought "they hardly appreciated as they should the enormous progress that had been made in regard to poor-law administration since the accession of the Queen." When the Act of 1834 was passed £1 15*s.* of the income of every man in the country was paid annually for the relief of the poor. "To-day they had a splendid institution and yet the cost per head was only the odd 15*s.*" But more important still, there was no longer the same grinding down of the poor and never was so much consideration shown to them as at the present time. At the beginning of the Queen's reign "the paupers were put five and six in a bed and even fever patients two or three together. The imbeciles herded together on heaps of straw." It does not seem probable that we shall ever fall back to such a condition of barbarism.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Army Medical Service.

IN the House of Lords on Thursday, Feb. 21st, the Earl of KILMOREY and Earl SPENCER invited from the Government a statement of their intentions with regard to the recommendation of the South African Hospitals Commission of an expert inquiry into the steps required for the improvement of the Army Medical Service. In response to this invitation both Lord RAGLAN, Under Secretary of State for War, and the Marquis of LANSDOWNE, the late head of the War Office and present Secretary of State for Foreign Affairs, spoke. The latter said that it was the intention of Mr. Brodrick to have recourse to the best expert advice that he could obtain, whether in the medical profession or elsewhere, but whether it was to be taken by the appointment of a committee or a commission, and whether the inquiry should or should not be departmental, were matters for which Mr. Brodrick desired time for further consideration.

Medical Act (1858) Extension Bill.

General LAURIE has introduced again in the House of Commons his Bill for the extension of the Medical Act of 1858. In a memorandum attached to the measure he says that since the passing of the Medical Act very great advance has been made in medical education throughout the empire, and especially in the self-governing colonies, and the Bill provides "that where the examinations and course of education at the principal colonial schools of medicine are in all respects the same as those practised in the United Kingdom, and subject to the supervision of the General Medical Council, medical men from Greater Britain should, when proved to be properly qualified, be admissible to serve the empire in the naval and military and civil services of the Crown."

HOUSE OF COMMONS.

THURSDAY, FEB. 21ST.

Precautions against Small-pox.

Mr. JOHN CAMPBELL asked the President of the Local Government Board what steps were being taken to preserve London from the danger of an outbreak of small-pox epidemic so prevalent in Glasgow.—Mr. WALTER LONG replied: I am happy to say that according to the latest returns there is at present practically no small-pox in London. It is by the vaccination of unvaccinated persons and the revaccination of adults that effective steps can best be taken to prevent an outbreak of this disease.—The recital of the second part of this answer was received with loud cheers of commendation.

FRIDAY, FEB. 22ND.

South African Hospitals Commission.

Mr. BRODRICK, in the course of a reply to a question, gave an assurance that any case in which a witness before the South African Hospitals Commission might be proved to have been prejudiced in any way by his giving evidence would be dealt with by the War Office in an exemplary manner.

MONDAY, FEB. 25TH.

The Small-pox Epidemic in Glasgow.

The LORD ADVOCATE, in reply to a question, said that he was informed by the Local Government Board that during the period from April 7th, 1900, to Feb. 21st, 1901, 1086 cases and 122 deaths from small-pox were reported in Glasgow.—Mr. O'DOHERTY asked the Chief Secretary to the Lord Lieutenant of Ireland (1) if his attention had been directed to a case of small-pox near Cardonagh, county Donegal, imported into that district by a man lately arrived from Glasgow, and what steps (if any) the Local Government Board for Ireland would take to prevent any more such cases being imported from Glasgow; (2) whether he was aware that the request made by the public health committee of the Londonderry Corporation to the Local Government Board to issue a sealed order preventing the importation of old clothes and rags into that city and district from Glasgow during the prevalence of the small-pox epidemic in the latter city had been refused; and (3) whether, considering the intimate touch of Londonderry and district with Glasgow, the Local Government Board would direct the Londonderry port sanitary authority to take precautions with respect to the examination of the cross-Channel steamers similar to those taken by them during the late bubonic plague epidemic in Glasgow.—Mr. WYNDHAM replied: The medical inspector of the Local Government Board, who has made careful inquiry into the allegation contained in the first paragraph, states that it is absolutely without foundation. The Board were unable to comply with the request made by the public health committee, as it has not been shown that small-pox is conveyed through the medium of old clothes. The Board do not consider it necessary to enforce in respect of small-pox the precautionary measures which were held to be essential in respect of bubonic plague. The Board have informed the authorities at Londonderry and other ports that vaccination and revaccination provide the best safeguards against a spread of small-pox.

Vaccination in Leicester and Gloucester.

Mr. COGHILL asked the President of the Local Government Board whether vaccination was now being generally practised in the towns of Leicester and Gloucester; whether he could state the number of unvaccinated persons in each town and of persons who had received certificates of exemption as conscientious objectors; and what steps the Local Government Board were taking to secure the due enforcement of the law with regard to vaccination.—Mr. WALTER LONG replied: The reply to the first part of the question is in the negative. I cannot state the number of unvaccinated persons in Leicester and Gloucester, but from the latest returns it appears that in Leicester of the children born during the 18 months ended June 30th last 388 have been vaccinated, while certificates of conscientious objection have been obtained in respect of 534. The corresponding figures as regards Gloucester are 879 and 395. Medical inspectors of the Local Government Board visited both towns last year in connexion with the performance of vaccination. As, however, the latest returns are not satisfactory I have decided that further visits shall be paid by inspectors as early as possible with a view of ascertaining in what manner the duties of the vaccination officers are now being carried out.

The Examination of Imported Food.

Mr. O'MARA asked the President of the Board of Agriculture if he

could state how many samples of consignments of imported food had been taken for analysis by the Commissioners of Customs (under the Sale of Food and Drugs Act, 1899) during the year 1900, how many such samples had been found adulterated, and what was the nature of such adulterations; and whether any prosecutions had resulted.—Mr. AUSTEN CHAMBERLAIN (on behalf of Mr. Hanbury) replied: The number of samples analysed was 1590, of which 26 were reported against. In seven cases fines were recovered. In the remaining 19 the circumstances were not such as, in the opinion of the Commissioners of Customs, would have warranted prosecution. Legal proceedings are now pending in four cases which have occurred since the beginning of the present year.

TUESDAY, FEB. 26TH.

Inoculation for Typhoid Fever.

Sir WALTER FOSTER asked the Secretary of State for War if he was aware that Professor Wright of Netley had stated, as the results of inoculation for enteric fever in one regiment, that the incidence of the inoculated was 0·55 and the death-rate 0·27 per cent., while in the uninoculated it was 6·14 and 3·35 per cent. respectively; and whether he could inform the House of the results of inoculation for typhoid fever or enteric fever among the forces serving in South Africa.—Lord STANLEY (on behalf of Mr. Brodrick) replied: The statement of Professor Wright referred to the official statistics from India for the 15th Hussars. There are no statistics available for the forces in South Africa. It will not, I fear, be possible to go into them properly until the war is over. The pressure on our medical officers for returns of various descriptions is a heavy addition to their pressing duties.

ROYAL COMMISSION ON ARSENICAL POISONING.

THE Arsenical Poisoning Commission met for the first time for the examination of witnesses on Friday, Feb 22nd, in one of the rooms of the Westminster Palace Hotel. All the members of the Commission were present—namely: Lord Kelvin (chairman), Sir William Hart Dyke, M.P., Sir W. S. Church, Professor Thorpe, Dr. B. A. Whitelegge, and Mr. H. Cosmo Bonsor, with Dr. G. S. Buchanan, secretary to the Commission. The Commission is appointed to ascertain with respect to England and Wales the amount of recent exceptional sickness and death attributable to poisoning by arsenic, whether such exceptional sickness and death have been due to arsenic in beer or in other articles of food or drink, and if so, to what extent, by what ingredients, or in what manner the arsenic was conveyed, and in what way any such ingredients became arsenicated; and if it is found that exceptional sickness and death have been due to arsenic in beer or in other articles of food or drink, by what safeguards the introduction of arsenic therein can be prevented.

THE EVIDENCE OF DR. TATTERSALL.

Dr. C. H. TATTERSALL, medical officer of health of the borough of Salford, was the first witness examined, and in reply to the CHAIRMAN he said that he had made special inquiries into the recent epidemic of arsenical poisoning attributed to beer and had prepared a special report on the subject for presentation to the Salford Town Council, the report applying only to the epidemic in the town. This report he offered to the Commission. From the accompanying charts it would be seen at once that there was a great rise in the number of deaths from alcoholism, peripheral neuritis, or multiple neuritis, in the month of June, 1900, and that this continued to increase, reaching its maximum in the month of November. On Nov. 9th Mr. R. D. Cran, Poor-law medical officer of the Regent-road district, called and informed him that he had a very large number of patients suffering from what appeared to be alcoholic peripheral neuritis. His diagnosis had been confirmed by finding that all the sufferers took beer, but he had been surprised to learn that many of the patients had not been excessive drinkers. He obtained samples of beer from public-houses supplied by 14 different breweries, sent them for analysis, and proceeded to make inquiries into the cases of which Mr. Cran had given him a list. It was soon ascertained that the sufferers were all beer-drinkers and several of them were employees of a local brewery. The amount of beer consumed varied very much—viz., from a pint to 16 pints per day. Witness then explained that the preliminary examination of the beer by Professor Delépine was in progress when on Nov. 20th they heard of the discovery by Dr. E. S. Reynolds of arsenic, and this observation was at once confirmed. It had been impossible to obtain anything approaching accurate information as to the extent of the disease. For obvious reasons the public generally had been very reticent and expected the medical attendants to be the same. Almost all the cases returned to him were among the poorer classes of the population, but they were not alone the sufferers. He knew instances where people in the better condition of life had suffered in exactly the same way, though those instances had not been brought officially to his notice. There could be no doubt that a very great number, probably some thousands, had suffered to a greater or less extent in Salford. The number of cases reported was 996, of which 281 were males, 349 females, and 366 sex not stated. One medical practitioner informed him that in August and September he had a great number of cases of herpes zoster and witness knew of several instances where persons who were in the habit of drinking some of the incriminated beer, in strict moderation, found in June, July, and August that the beer caused disturbance of the digestive functions, such as vomiting and diarrhœa, and they ceased to take it. So far as he had been able to ascertain there was a marked falling off in the amount of beer consumed in the district about the end of September, two months before the discovery of the poison, showing that many persons must have been affected in a similar way. In 150 cases the source of the beer was carefully traced and it was found that in every instance where one brewery could be connected with the poisoning, that brewery was using Bostock's sugar. The deaths resulting from the special amount of arsenic contained in Bostock's brewing sugars from May to November could only be ascertained by comparing the deaths from chronic alcoholism, peripheral neuritis, or alcoholic neuritis in the period from June, 1900, to January, 1901, with those from the same causes in previous years, and taking in addition the deaths registered as due to cirrhosis of the liver treated in the same way. Thus from June 1st, 1900, to January 1st, 1901, there were registered from peripheral neuritis 47 deaths, from alcoholic neuritis 10, from multiple neuritis two, and from chronic alcoholism 32 deaths, or a total of 91 deaths in the eight months as compared with seven, the average number for the same period in the preceding five years. This left a total of 84 deaths which might be considered to be due to the poisoning, in addition to those which were certified as cirrhosis of the liver. In the year 1900 there were 52 deaths registered as due to cirrhosis of the liver, as compared with 30, the average for the preceding five years, which left an additional 22 deaths as in all probability due to the poisoning, especially considering that the post-mortem examination of the victims showed that even where large amounts of alcohol had not been taken the liver was greatly hypertrophied. There was one death registered from Addison's disease and he had good reason to believe that this was due to the arsenical poisoning. This made a grand total of 107 deaths in Salford up to the end of January, 1901, probably due to arsenical poisoning from beer, and there could be no doubt that many of the persons still suffering from the effects of the poison would succumb in the near future. He had tabulated the results of replies received from medical practitioners respecting the symptoms of 296 cases. This brought out—running of eye and nose, 106; pigmentation, 68; skin affections, 107; sensory disturbances, 234; motor disturbances, 228; gastro-intestinal troubles, 39; anasarca, 10; and mental disturbances, 9. The mortality figures showed that women were much more liable to succumb to the effects of the poison than men. Thus, out of 115 deaths 28 were males and 87 were females. It was impossible to say whether this was due to the females taking more of the poison or whether their powers of resistance were less. Probably it was a combination of the two reasons. As to age, the greatest number of cases were amongst persons from 40 to 50 years of age. For obvious reasons it was exceedingly difficult to obtain anything approaching accurate information as to the amount of beer consumed by any individual and there was a strong tendency to minimise the quantity in most instances. The information in the following table, which represented the analysis of 150 cases, had been carefully sifted and made as accurate as possible:—

Small amount, not exceeding one quart daily	53
Medium amount, not exceeding half a gallon daily	44
Large drinkers, exceeding half a gallon daily	53
	150

Assuming that the beer contained on the average one quarter of a grain per gallon, which was, he thought, a fair assumption, the amount of arsenic taken in a week by one of the class of small drinkers would be about half a grain, and considering that one-twentieth of a grain of arsenic would be a dangerous quantity to take daily for an unlimited period it was easy to understand that susceptible persons might be poisoned. The second class would take about one grain per week and the third from two to four grains per week. Witness then explained in detail the precautions taken to prevent the epidemic spreading, and afterwards the processes adopted in brewing beer and in the manufacture of sulphuric acid. In the latter connexion he said that the purest acid was made from native Sicilian brimstone. This alone should be used whenever the ultimate destination of the manufactured product was human consumption. Witness then gave his conclusions. He said it might be considered proved by the clinical symptoms, the presence of arsenic in the urine of patients and in the body of patients who died, that the cause of this outbreak of epidemic disease was poisoning by arsenic. If the beer had been brewed from malt and hops alone no serious damage from poisoning with arsenic could have occurred, although malt more or less impure might have been used by the brewer, and in the light of the results of this investigation it might be considered that there was no reason why beer brewed from malt and hops should under any circumstances contain more than one two-hundredth part of a grain per gallon, as the use of anthracite fuel in the preparation of malt and subsequent brushing and polishing gave a practically pure article. Again, it was quite clear that glucose and invert sugar as usually prepared were absolutely innocuous substances, and considering the fact that chemical science was progressing so rapidly in the direction of replacing natural products with manufactured articles it would appear unreasonable to forbid the use of these substances provided that some means could be devised by which carelessness of one or more individuals could be prevented from endangering the lives and health of the public. At the same time it should be recognised that any person replacing a natural substance by a manufactured article in the preparation of any food stuffs took upon himself the responsibility of seeing that no injury should ever result from such substitution. He would suggest that chemical manufacturers be compelled by law to label every article whether apparently meant for use in the preparation of food stuffs or not which contained any known poison, with a statement that such poison, naming it, was present. The Food and Drugs Act should also be amended so as to make the contamination of food stuffs with poisonous matter in appreciable quantity, whether to a dangerous extent or not, and whether to the knowledge of the seller or not, an offence within the meaning of the Act. The seller could always and ought always to protect himself by obtaining a warranty from the person from whom he obtained the substance. This investigation had shown the great importance of some improvement being made in the arrangements for the notification to the health authorities of outbreaks of disease. Certain specified infectious diseases were notified under the Infectious Diseases Notification Act, but it should be recognised by the medical profession that the public had provided an organisation for the express purpose of dealing with outbreaks of disease, and notification of any disease of an unusual character should take place as a matter of course. Immediately after the beginning of December he sent out forms to every medical practitioner in Salford asking for particulars of cases and he received lists from a large number. He sent out forms again in January asking for any further cases, the

result being that in January he heard of 39 cases which were not included in the original list. These 39 cases were all inquired into and in every instance the illness was found to have commenced and the symptoms to have been clearly marked before Dec. 1st. He had not found any cases of illness resulting from confectionery, or jams, or syrups. Samples of these substances had been analysed but with entirely negative results. It was stated in evidence more than once in the inquiries before the coroner that Bostock's invert sugar and glucose were supplied only to brewers and witness obtained this information when he visited Bostock's works.

By Sir WILLIAM HART DYKE: He could not indicate what proportion of cases had escaped notice. The problem was one on which he had thought a good deal, but he could see no way of getting at any information that would be of value. The strongest indication that there had been a great amount of illness beyond what was known to the health authorities was the great falling-off in beer-drinking; people gave up beer and took to whisky. When this inquiry began the possibility of the presence of arsenic in beer never occurred to him.

By Mr. COSMO BONSOR: It was lead he first thought of, and these beers were analysed for it, but he satisfied himself that the cases were not of lead-poisoning.

By Professor THORPE: It was generally considered that spirit-drinking was the cause of peripheral neuritis, but in these inquiries in Manchester they found that, although whisky might be a cause, beer was a commoner cause than had generally been supposed. In his opinion this epidemic was clearly due to the use of a particular sugar in the making of beer and to that extent was an accidental occurrence. He had, of course, approached the subject purely from the public health standpoint. A number of people were ill. He inquired into all their circumstances and he found one thing in common—they all drank beer. Samples of beer obtained in the ordinary way were found to contain arsenic. Arsenic accounted for the symptoms and he was satisfied without going any further.

By Dr. WHITELEGGE: One of the lessons of this epidemic was that arsenic was more of a cumulative poison than had been supposed. He felt certain that if a return of these cases had been sent to the public officers of health they would have noticed what perhaps one medical man might not have noticed—namely, the increase in peripheral neuritis—and there would have been inquiry. The ideal condition would be a universal notification of disease—all disease—but failing that he thought that it should be generally understood by the medical profession that there was a machinery already provided for inquiry into the causes of death, and when unusual sickness—unusual either in type or amount—existed it should be reasonably expected that a medical practitioner should communicate with the public health authorities.

THE EVIDENCE OF DR. REYNOLDS.

Dr. ERNEST S. REYNOLDS, assistant physician to the Manchester Royal Infirmary and visiting medical officer to the Manchester Workhouse Infirmary, was then examined, and in answer to the CHAIRMAN he said that in this condition, which had been called for many years "alcoholic paralysis," there were certain sensory disturbances quickly followed by certain motor disturbances, certain heart symptoms not infrequently, and also not infrequently certain quite peculiar mental symptoms. The sensory symptoms consisted principally of prickings and burnings in the hands and feet, cramps in the calves, and they were associated also with a very exquisite tenderness found with pressing or squeezing the muscular masses between the fingers. This tenderness was found in very few other conditions. As regards the motor symptoms these consisted of gradual loss of power in the feet and hands, the loss of power being due largely to an inflammation of the nerve trunks in the limbs or peripheral neuritis. This loss of power was so peculiar that a particular form of gait was produced. The hands became paralysed and drooping and in the advanced cases the diaphragm became paralysed so that there was very great difficulty in breathing. The mental symptoms consisted in a very characteristic loss of memory of time and place, so that a patient could not tell how long he had been in the ward. Many of the patients were quite incapable of telling where they were. Those were the symptoms the medical profession had known for many years and such cases were very common in Manchester—so common that in the years 1887 to 1899 at the Manchester Royal Infirmary, where they had 1500 medical cases admitted each year, the average number of cases of alcoholic paralysis was 20 annually. As far as he could hear these cases were more common in Manchester than, say, in Scotland or in London. In chronic arsenical poisoning they got, as a rule, first of all, digestive disturbances, vomiting, and diarrhœa. They next got symptoms of cold in the head, running of the eyes, running of the nose, and bronchial headache. They also got in not a few cases peculiar acute rashes on the body. They then got marked sensory disturbances exactly like those of alcoholic paralysis and also motor disturbances exactly the same as those he had described. He had seen a considerable number of arsenical cases and thinking over them he could not differentiate between the sensory and motor symptoms of the present epidemic and those which he had seen previous to the epidemic in alcoholic paralysis. Later they got certain chronic skin affections marked by a peculiar pigmentation of the skin and a thickening of the palms of the hand and the soles of the feet. Comparing the symptoms of the so-called alcoholic paralysis with those of chronic arsenical poisoning one would say that the sensory and motor symptoms were practically the same, but that the skin symptoms were only found in the arsenical cases. To show that the sensory and motor symptoms were about the same this epidemic in Manchester had been going on for four months and many physicians in Manchester, gentlemen who were thoroughly well acquainted with the appearance of alcoholic paralysis, had been seeing these cases and none of them imagined that they were anything but cases of alcoholic paralysis.

Have you any reasons for doubting whether ordinary alcohol is or is not the cause of the so-called alcoholic paralysis?—It is a very difficult question, and I wish to put my views forward with great diffidence, but there are several points which make me think that ethylic alcohol is not the cause of neuritis.

Dr. REYNOLDS then proceeded to explain his views in detail. For many years it was stated that alcoholic neuritis only occurred in spirit-drinkers. The first case of alcoholic neuritis that he ever saw was in 1885 and that occurred in a gentleman who drank absolutely nothing but beer. Since then he had seen many hundreds of cases of alcoholic neuritis and the sufferers had invariably taken beer either alone or with spirits. On the contrary, he had seen many cases in private and hospital work where the people had taken nothing but spirits and never had he seen a pure spirit-drinker with alcoholic neuritis. He had seen a gentleman who took a bottle of whisky per day and a lady who took a bottle and a half per day. He had at various times inquired of Scotch physicians and had learned from them that in a country where much whisky was consumed there was very little neuritis. Some weeks ago he sent to Aberdeen, Glasgow, Edinburgh, and Dundee, and also to Belfast, and obtained corroboration of his opinion that in this matter it was not alcohol *per se*. Witness then read a long letter from Sir William Gairdner commenting on the rare and exceptional character of the disease in Scotland and suggesting that alcohol though associated with it was not the leading factor in its etiology. Continuing, witness said that although he had not seen neuritis in a pure spirit-drinker, he had no doubt that it had occurred, but in the Manchester district it was infinitely more common among beer-drinkers. Dr. Reynolds having explained what led him to suspect beer as the cause of the mischief and the results of the analyses made, said that the symptoms of the present epidemic agreed absolutely with those of an epidemic which occurred in Paris in 1828 and which was called "acrodynia." In that case nobody thought of its being arsenical. An epidemic occurred in 1888 in Hyères which was undoubtedly arsenical and was due to arsenic having been put into wine instead of gypsum, the pigmentation giving the key to the cause. He had not the slightest doubt that the Paris epidemic was arsenical, for the symptoms described were identical with those he had found in Manchester and had set out in an article in THE LANCET of Jan. 19th, 1901, p. 166, when he had not read the account of the Paris epidemic. Giving the chronological order of the symptoms in Manchester, witness said that digestive symptoms had started first; in perhaps 50 per cent. of the cases they were either vomiting or diarrhœa. The next symptoms were cold in the head and irritation of the larynx and the bronchia. Then came the rash lesions, next the sensory disturbances, the burning of the hands and feet, and then in about three or four days the patients complained of the loss of power, especially in the feet and also partly in the hands. There was difficulty about the classification of cases, due largely to the peculiar idiosyncrasy which people seemed to have as regards arsenic. For instance, a wife in a family died from the disease and at the inquest the husband said that he took quite as much beer of the same kind as his wife and was perhaps well or hardly suffering. One group of cases presented practically all the symptoms, whilst another only presented the symptoms of heart or liver affection—that was to say, they were breathless and had swollen feet, and very few had sensory disturbances. Other cases, again, had the principal sensory disturbances and nothing much else. Others had sensory and motor disturbances, and it was these that looked exactly like an old case of alcoholic paralysis. In these cases a careful examination of the soles of the feet not infrequently revealed scales there, so that it seemed to him very probable that many of the cases which they had been calling alcoholic paralysis they would have found to be arsenical if they had only known the symptoms to look for. It seemed to him possible that quite small quantities of arsenic taken for considerable periods might by accumulating in the system set up a paralysis without any of the other symptoms. Since the beginning of October he had seen in the Crumpsall Workhouse Infirmary 403 cases, 237 males and 166 females, and in November and December in the Royal Infirmary he had seen 170 cases, 110 males and 60 females. Altogether he had seen about 650 cases. These figures showed more males than females, but many women when the symptoms became known were shy about coming to the hospital, and, indeed, did not come unless they were very seriously ill.

By Sir WILLIAM CHURCH: His opinion that alcoholic neuritis was more common in Manchester than in London was based on conversations with London physicians.

By Dr. WHITELEGGE: He was of opinion that alcohol predisposed people to arsenical poisoning.

The Commission then adjourned for a week.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

BENNETT, J. H., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Staplehurst District of Kent.

BYERS, JOHN W., Professor, M.D., M.A.O., has been appointed Examiner in Obstetric Medicine and Gynæcology in the Royal University of Ireland.

DEY, ALEXR., M.B., C.M. Aberd., has been appointed Certifying Surgeon under the Factory Acts for the Woolér District of Northumberland.

ELLIS, C. J., M.B., C.M. Aberd., has been appointed Medical Officer and Public Vaccinator for the No. 3 Sanitary District of Battersea, Wandsworth Union.

FLITCROFT, T. E., L.R.C.P. Edin., L.F.P.S.G., has been appointed Honorary Surgeon to the Bolton Infirmary, vice William Gillibrand, resigned.

GOLDSMITH, GEORGE POCOCK, M.D. Durh., M.R.C.S. and L.S.A., has been appointed Consulting Physician to the Bedford County Hospital.

JENKINS, C, C., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been re-appointed Assistant Medical Officer for the Workhouse at Cardiff.

KINGSFORD, B. H., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed Medical Officer and Public Vaccinator for the Woking Sanitary District, Guildford Union.

LAWSON, T. C., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Sherston District of Wilts.

LINDSAY, J. A., Professor, M.D., M.R.C.P. Lond., has been appointed Examiner in Medicine in the Royal University of Ireland.

MOYNAN, RICHAND M., M.D., M.Ch. R.U.I., has been appointed Medical Officer for the Borough of Cowbridge, Glamorganshire, vice A. W. Shepherd, deceased.

MYLES, GEORGE, L.R.C.P., L.R.C.S. Edin., has been appointed Certifying Surgeon under the Factory Acts for the Limerick District.

PEACOCK, W. E., M.D. Durh., B.S., has been appointed Certifying Surgeon under the Factory Acts for the Nuneaton District of Warwickshire.

PHILLIPS, F. B. WILLMER, M A., M.D. Oxon., B.Sc. Lond., M.R.C.S., has been appointed Physician to the Bedford County Hospital.

ROBB, A., M.B., C.M. Aberd., D.P.H., has been appointed Medical Officer of Health for the Paisley Town Council.

SHARPIN, EDWARD COLBY, L.R C.P. Edin. and L.M., M.R.C.S., has been appointed Consulting Surgeon to the Bedford County Hospital.

SMITH, H. H., L.R.C.P. Lond , M.R C.S., has been appointed Certifying Surgeon under the Factory Acts for the Uxbridge District of Middlesex.

SMITH, J. LORRAIN, M.D., has been appointed Examiner in Pathology in the Royal University of Ireland.

STACK E. C., L.R.C P., L.R.C.S. Irel., has been appointed Assistant Surgeon to the Burton-on-Trent Infirmary,

STAMP, W. D., L.R.C.P. Edin., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Plympton District of Devonshire.

STEELE, W. C., M.D. Brux., M.R.C.P. Edin., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Carshields District of Northumberland.

STONE, FREDERICK WILLIAM SMITH, L.R.C.P., L.R.C.S., L.M. Irel., has been re-appointed Medical Officer for the Kalston and North Stoke Districts by the Raynshaw Rural District Council.

THOMPSON, W. H., Professor, M.D., F.R.C.S. Eng., has been appointed Examiner in Physiology in the Royal University of Ireland.

WALKER, J. W. THOMSON, M.B., F.R.C.S., has been appointed Honorary Pathologist and Bacteriologist to the Paddington Green Children's Hospital, London, W.

WHITLA, W., Professor, M.D., has been appointed Examiner in Materia Medica in the Royal University of Ireland.

WILD, R. B., M.Sc Vict , B Sc., M.D. Lond., M.R.C.P., M.R.C.S., has been appointed Professor of Materia Medica and Therapeutics, Owens College. Manchester.

WILLAN, L. J., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Dorking District of Surrey.

WOOD, L. E., M.B. Lond., M.R.C.S., D.P.H., has been appointed Certifying Surgeon under the Factory Acts for the Penshurst District of Kent.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index)

BARNHILL POORHOUSE AND HOSPITAL, Springburn, Glasgow.—Male Junior Assistant Medical Officer. Salary £90 per annum, with board and apartments, &c.

BELGRAVE HOSPITAL FOR CHILDREN, Gloucester-street, S.W.—House Surgeon for six months. Gratuity £5, with board and lodging.

BOROUGH HOSPITAL, BIRKENHEAD.—Senior and also Junior Resident House Surgeon. Salary £100 and £80 respectively per annum, with board and washing.

CENTRAL LONDON SICK ASYLUM DISTRICT.—First and Second Assistant Medical Officers. Salary—First Officer, £100 per annum; Second Officer, £75 per annum; each with board and residence.

CHORLTON-UPON-MEDLOCK DISPENSARY. — Resident House Surgeon, unmarried. Salary £130 a year, with furnished rooms and attendance.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park. Physician to the out-patients.

CITY OF SHEFFIELD HOSPITALS FOR THE TREATMENT OF INFECTIOUS DISEASE.—Assistant Resident Medical Officer. Salary £150 per annum, with board, lodging, and attendance.

COUNTY OF LANARK: DISTRICTS OF THE LOWER AND MIDDLE WARDS.—Resident Physician for Lightburn Joint Hospital for Infectious Diseases, Shettleston, near Glasgow. Salary £130 per annum, with board, &c.

CROYDON UNION INFIRMARY, Mayday-road, Croydon. — Resident Assistant Medical Superintendent and Dispenser. Salary £120 per annum, increasing to £150, with furnished apartments, rations as per scale, and washing.

CUMBERLAND INFIRMARY, Carlisle.—Resident Medical Officer as House Physician during the first six months, and House Surgeon during the ensuing six months. Salary at the rate of £80 and £100 per annum respectively, with board, lodging, and washing.

DOVER HOSPITAL.—House Surgeon, unmarried. Salary £100 a year, with board, lodging, and washing.

GENERAL INFIRMARY, Gloucester, and GLOUCESTERSHIRE EYE INSTITUTION.—House Surgeoncy. Salary £100 per annum, with board, residence, and washing. Also Assistant House Surgeon for six months. Salary at the rate of £30 per annum, with board, residence, and washing.

HOSPITAL FOR WOMEN AND CHILDREN, Leeds.—House Surgeon for six months, eligible for renewal. Non-resident. Salary at the rate of £125 per annum.

LANARK COUNTY COUNCIL.—Assistant Medical Officer of Health. Salary £140 per annum, with travelling expenses.

LEEDS PUBLIC DISPENSARY.—Honorary Surgeon.

LIVERPOOL ROYAL INFIRMARY.—Honorary Physician.

LIVERPOOL STANLEY HOSPITAL.—Senior House Surgeon. Salary £80 per annum, with board, residence, and washing.

LONDON HOSPITAL, Whitechapel, E.—Surgical Registrar. Salary £100 per annum.

LONDON HOSPITAL MEDICAL COLLEGE.—Assistant Demonstrator of Anatomy. Salary £90 a year.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Physician, House Surgeon, Assistant House Physician, and Assistant House Surgeon for six months. Salary at the rate of—House Physician and House Surgeon, £40 a year; Assistant House Physician and Assistant House Surgeon, £20 a year.

NEWCASTLE-ON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary £160 for the first year and £180 afterwards.

NORTHAMPTON GENERAL INFIRMARY.—Physician, not under twenty-five years of age.

NORTHERN NIGERIA, WEST AFRICA —Medical Officers. Salary £400 per annum and local allowance of 5s. a day during residence.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Salary £140 per annum, all found except board.

PARISH COUNCIL OF WESTRAY, Orkney.—Medical Officer and Public Vaccinator. Salary £90 per annum.

PRESTON ROYAL INFIRMARY.—Junior and Assistant House Surgeons. Salaries £80 and £60 per annum respectively, with board, lodging, and washing, &c.

ROYAL ALBERT HOSPITAL, Devonport.—Resident Medical Officer, unmarried. Salary £110 per annum, with board and lodging.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—Resident Medical Officer, for six months. Salary at the rate of £120 per annum, with furnished apartments, board and washing.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Ventnor.—Assistant Resident Medical Officer, unmarried. Salary £100 per annum, with board and lodging in the hospital.

ROYAL SEA BATHING HOSPITAL, Margate.—Assistant Resident Surgeon. Salary £60 per annum, with board and residence.

SOUTHPORT INFIRMARY.—Resident Senior House Surgeon. Salary £80 per annum, all found.

ST. MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM, City-road, London, E C.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

STOKE-UPON-TRENT UNION.—Resident Medical Officer. Salary £200 per annum, with board, washing, and furnished apartments at the hospital.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies as Certifying Surgeons under the Factory Acts at Towyn in the County of Merioneth and at Ballylongford in the County of Kerry.

TORBAY HOSPITAL, Torbay.—House Surgeon. Salary £100 per annum and £5 for the nurses' lectures. Board, lodging, washing, &c.

TOWNSHIP OF MANCHESTER WORKHOUSE, Crumpsall.—Assistant Medical Officer. Salary £110 per annum, with furnished apartments, fire, light, washing, and attendance.

VICTORIA HOSPITAL FOR CONSUMPTION, Craigleith, Edinburgh.—Resident Physician, for six months. Residence, board, and a small honorarium to cover conveyance.

WARNEFORD HOSPITAL, Leamington.—House Surgeon. Salary £100 per annum, with board, washing, and apartments.

WARNEFORD ASYLUM, Oxford.—Assistant Medical Officer, unmarried. Salary £100 a year, with board, lodging, and washing.

Births, Marriages, and Deaths.

BIRTHS.

DE JERSEY.—On Feb. 23rd, at Netherton, Guildford, the wife of Walter B. de Jersey, M.B. Cantab., of a son.

FINLAY.—On Feb. 19th, at Mary's-place, Raeburn-place, Edinburgh, the wife of Thomas Finlay, M.B, C.M. Edin., of a son.

GERVIS.—On Feb. 22nd, at Dyke-road, Brighton, the wife of Henry Gervis, M.A., M.B., of a son.

GORHAM.—On Feb. 21st, at Campbell House, Clapham-common, S.W., the wife of J. J. Gorham, M.D. Irel., D.P.H. Camb., J.P., of a daughter.

OLIVER.—On Feb. 22nd, at Westdene, Maidstone, the wife of Charles Pye Oliver, M.D. Lond., D.P.H., of a daughter.

UMNEY.—On Feb. 20th, at Crystal Palace-park-road, Sydenham, S.E., the wife of William F. Umney, M.D. Lond., of a son.

WILSON.—On Feb. 23rd, at Frederick-road, Edgbaston, Birmingham, the wife of H. Bagster Wilson, M.R.C.S., of a son.

DEATHS.

FLEMING.—On Feb. 25th, at 3, Woodside-terrace, Glasgow, William James Fleming, M.D., F.F.P. & S. Glasg., in his 53rd year.

NICOL.—On Feb. 20th, at Warwick House, Llandudno, James Nicol, M.D., J.P., and F.R.M.S., in his 86th year.

SINCLAIR.—On Feb. 18th, at Mount Pleasant, Liverpool, John Sinclair, M.D., aged 85.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

ANDERSON v. COWARD: MEDICAL ETHICS IN NEW ZEALAND.

A LIBEL case was heard in the Supreme Court at Blenheim, New Zealand, on Dec. 5th and 6th, 1900, before His Honour Mr. Justice Edwards, which is not without medical interest. The plaintiff, Dr. William Anderson, sued the defendant, Mr. G. W. Coward, for alleged libel and slander, claiming £50 damages. To tell the story shortly, Coward had been treated in the Wairau Hospital to which Dr. Anderson is assistant surgeon. After his discharge from the hospital he had published statements casting a slur on the competency of Dr. Anderson. It was also alleged in evidence that Coward had said to sundry persons that he would have lost his leg if he had not changed his doctor. The defendant allowed that "to the best of his belief all he could have said to Mr. Healy was that he really thought he must have lost his leg if he had not gone to Dr. Redman." His Honour awarded plaintiff the full damages claimed with costs, and allowed seven guineas costs for the second day. Questions of medical etiquette were constantly discussed throughout the case, which depended for its medical interest mainly upon the many references to proper professional behaviour. Mr. W. E. Redman, who had treated Coward after Dr. Anderson, and to whom the defendant attributed his recovery, said in his evidence that on coming to Blenheim he had not intended to practise but only to do insurance work. On being asked to stop and to take the place of a practitioner who had recently left he consented and allowed a paragraph to be inserted in the local paper, having learned that such was the custom in New Zealand, setting forth his intention to practise. The paragraph also gave details of his career supplied by himself. About a week after the appearance of this paragraph in the paper he called upon the other medical men in the town—namely, Dr. Anderson and Mr. D. M. Nairn. They were both out and he left his card. It further came out in evidence that Dr. Anderson wrote on behalf of Mr. Nairn and himself saying that "they could not reciprocate" Mr. Redman's courtesy. One or two more letters passed, but Mr. Redman remained a stranger to his professional *confrères*. Undoubtedly this fact had something to do with the spirit in which the libel action was carried on. Had Dr. Anderson and Mr. Redman been friends we can hardly think that the action would have been brought. But we congratulate Dr. Anderson on having won the case. With regard to Mr. Redman's alleged breaches of medical ethics it must be remembered that, although the unwritten laws guiding the medical profession are applicable in spirit to medical men in every clime and of every nation, the details of medical etiquette vary in different localities. As regards a new practitioner calling on others the practice has in London almost dropped out. No metropolitan medical man would be considered by his colleagues in his locality to have committed a *lache* by not calling upon them when he arrived among them. It is a matter upon which he can please himself. Mr. Redman did call upon his brother practitioners, but he did not do so until his advertisement had appeared in the paper. As regards this advertisement a medical man again is, we believe, allowed in certain colonies by common consent to make a simple statement in the lay papers of his intention to practise. One medical man said in his evidence in the case under consideration that a recognised form existed running "Mr. —— has commenced practice at —— and may be consulted ——." But Mr. Redman allowed the insertion of a paragraph setting out details of his career in a way that seemed to be intended to encourage the laity to come to him. This he should not have done. The quack appeals to the public in advertisements to leave their medical men and come to the only real shop for cures; the slightest appearance of such an attitude is a contravention of the spirit of medical ethics.

WHO IS RESPONSIBLE?

M. D. writes as follows:—A engages B as locum-tenent during absence from home. B during this time orders for his own use, without the knowledge or consent of A, an instrument and drugs which when he leaves he takes away with him. Shortly after a bill is addressed to B at A's address and sent in several times. At last it is returned to the sender with "Address not known" written across it. Immediately it is returned to A, still made out in B's name, with a letter saying that the firm hold A responsible for the amount as B was doing a locum-tenent's work for A at the time that the goods were ordered. A is requested to settle the account. Is A responsible? The goods were not for use in his practice and he never saw or heard anything of them until the bill was sent to him. It makes the engaging of a locum-tenent rather a serious thing if he is allowed to run up bills for the principal to settle after his departure.

*** We shall be interested to hear if this position has ever arisen before. We cannot answer the question concerning A's responsibility, which is a purely legal one.—ED. L.

"A CASE OF AUTO-VACCINATION."

To the Editors of THE LANCET.

SIRS,—In the case of auto-vaccination described in THE LANCET of Feb. 23rd, p. 549, by Mr. G. H. Ormsby Mr. F. MacDougall is reported to have stated that he had never seen during his extensive experience as a "public vaccinator" a similar case.

Some years ago in my practice a woman, aged 64 years, nursing her grandchild, got inoculated through a scratch on her left forearm with the lymph from a broken vesicle on the baby's arm with the result that the vaccination went through its successive stages all right, and though this mature dame suffered considerable inconvenience and annoyance for the time being she seemed nothing the worse afterwards for her unwilling experience. I am, Sirs, yours faithfully,

Brighton, Feb. 25th, 1901. R. HILL SHAW, M.D. Dub.

DEAFNESS AND QUACKERY.

JUDGING by the advertisements which are continually appearing in newspapers and periodicals the unqualified people who undertake to cure deafness must find this business a very lucrative one. In many cases the shameless announcements take up columns or even entire pages in respectable journals and they must consequently cost a great deal of money, so it is clear that the revenue accruing through the publicity thus obtained must in the aggregate be enormous. As an example of the methods adopted by the self-styled "aural specialists" the following hard case may be cited. Mrs. A, a poor old woman who is very nearly stone deaf but contrives to eke out a precarious living by charing, being tempted by an advertisement in a local paper was induced to communicate with the advertiser, who by return of post sent her a formidable packet of papers, including a pamphlet entitled "Deafness and Noises in the Head, with Instructions how they may be Absolutely Cured," from which the subjoined extract is taken:—

> "I was now face to face with the fact that I was terribly deaf and that the specialists and scientists of the day were incapable of curing me. ..... Their mode of treatment was radically wrong. What I really required was a medicine which should reach the minute muscles of the inner ear, as upon their proper action the sense of hearing almost entirely depends, and I commenced experimenting to find out the exact combinations of medicines required to penetrate the 'middle' and 'inner ear' and to restore the little muscles (ossicles) to their natural state."

The parcel also contained a form in which ten or a dozen trivial questions were propounded. These Mrs. A. answered to the best of her ability and having returned the filled-in document she without delay received the following letter:—

> "—— House,
> "January —th, 19—.
>
> "DEAR MADAM,—I am in receipt of your favour of the —th inst. and after a careful diagnosis of your case am very pleased to be able to strongly recommend the system to you, fully believing that the result will be highly satisfactory. During my experience I have had several very similar cases to treat for in which I am pleased to say I was quite successful. Therefore I candidly advise you to send for the remedies enumerated upon the enclosed form, the use of which I feel sure would bring about a successful result in your case as in others of a like nature.
>
> "Awaiting the favour of your reply,
> "I am, dear Madam, yours faithfully,
> "——"

The "remedies" were thus described:

> "Pair of Drum Supports.
> Prep. No. 1 Lotion.
> Prep. No. 3 Powd.
>
> Cost, including Treatment and directions, &c., £1 7s. 6d."

Having with great difficulty scraped together this, from her point of view, enormous sum Mrs. A despatched it to ——— House, and in due course received the "remedies" which, it is hardly necessary to add, proved to be of no value whatever. The poor old woman's folly having come to the knowledge of a medical man in her neighbourhood he wrote to the "aural specialist" in the guise of a patient, detailing an impossible case of deafness, and in due course received duplicates of all the documents that had been sent to Mrs. A, including the above-quoted letter, the only difference being the substitution of "Sir" for "Madam." As, however, he failed to respond, in a few days a reminder reached him, and on his still keeping silence in a few days more he received an offer of the "remedies" for 15*s.* cash, the balance payable only on cure. This, too, he ignored, whereupon after another interval the "aural specialist" forwarded a final letter to say he was willing to send "the full treatment for the sum of 4*s.* 3*d.*, cash with order."

ARE THERE PINS WITH REMOVEABLE POINTS?

To the Editors of THE LANCET.

SIRS,—I do not know whether pins are made with points that can be readily broken off after insertion, leaving a smooth rounded stump that will not prick or catch easily in clothing. A pin of this description would be a boon to surgical dressers and nurses.

I am, Sirs, yours faithfully,

Feb. 25th, 1901. BANDAGE

KIMBALL'S ANTI-RHEUMATIC RING.

A CORRESPONDENT recently wrote to us asking whether we knew anything of Kimball's anti-rheumatic ring, also inclosing one of Kimball's circulars. We learn from perusing the circular that rheumatism is caused by acidity of the blood, that this acid crystallises, forming crystals presenting all the appearance of pounded glass, which irritate the nerves. We then learn that electricity is the only remedy but that it must be properly applied and this in the most gentle manner possible but continuously. Herein lies the marvellous power of Kimball's anti-rheumatic ring.

> "Worn during the twenty-four hours of the day, as soon as it comes in contact with the heat and moisture of the finger, a gentle current of Electricity, *of exactly the right strength*, is directed, which will at once quicken the circulation; *then the blood itself, coursing more quickly through the veins, will dissolve the crystals*, stop the pain, and give tone to the entire system. By its quickening the circulation the blood is enabled to throw off impurities. Thus we have Electricity in its most effective form, and thus is *Rheumatism* cured.
>
> "The ring is not charged with Electricity; nor does it contain any of the metals that enter into the construction of the many so-called electric-belts, pads, insoles, &c., &c. There is nothing about it to be lost by use. The metals of which the Ring is composed, in connection with the heat and moisture of the finger on which it is worn, and the acid which the Ring draws from the system as long as any remains, form a combination which generates a mild current of Electricity."

We thought it would be interesting to see one of these rings, so we sent for one and submitted it for analysis in THE LANCET Laboratory. Our consulting chemist reports that the specific gravity of the metal was exactly that of iron. It dissolved completely in hydrochloric acid with evolution of hydrogen gas. The solution yielded a quantity of ferric oxide on precipitation exactly equivalent to the amount of the metal taken for the experiment. The ring was non-magnetic. We have therefore no hesitation in saying that the statements contained in Kimball's pamphlet are mostly false. He talks about the "metals of which the ring is composed"; it is composed of only one metal—namely, iron, with a trace of carbon—and is no more capable of setting up a current of electricity than is a bunch of keys in the pocket. Its value is at the outside 2*d.*, and Mr. Kimball charges 10*s.* It is quite true that a number of persons seem to have persuaded themselves that the ring does good. For instance, the first testimonial runs as follows:—

> The Rev. CANON WILBERFORCE, 20, Dean's-yard, Westminster Abbey, writes:—"I have recommended your Anti-Rheumatic Rings to many. I can only say that up to date I have not had a twinge of *Rheumatism* since I first put on your Ring. It may be coincidence, but it is a fact, nevertheless."

None of the testimonials is of the least value from a scientific point of view. Many people even now believe that wearing an eelskin garter cures cramp, and a medical man has told us of an acquaintance of his who tried the anti-rheumatic ring but deriving no good from it took to carrying a new potato in his pocket with beneficent results. We do not see why the authorities should not prosecute Kimball for obtaining money under false pretences, for his ring is not composed of metals but of one metal, and it does not generate electricity when on the finger, while even if it were to, the electricity would not pass through the body but be short-circuited.

"THE CASE OF MR JOSEPH HENDERSON MARTIN."

To the Editors of THE LANCET.

SIRS,—I beg to acknowledge the two following subscriptions since my letter in THE LANCET of Feb. 23rd: M.R.C.S. Eng. (Bath), £2; Mr. J. F. Churchill (Chesham), £2 2*s.* Amount previously acknowledged in THE LANCET £48 5*s.*

I am, Sirs, yours faithfully,

Chester-le-street, Feb. 27th, 1901. H. LYON SMITH.

"MEDICAL SUPERSTITIONS."

To the Editors of THE LANCET.

SIRS,—An interesting chapter with regard to superstition is that relating to the examination of persons accused of sorcery or supposed to be possessed by a devil. Cicatrices, birth-marks, hysterical anæsthesia, dermographism, all had their significance. "M.B. Lond.," will find some interesting information and references in "Étude sur le Dermographisme ou Dermoneurose Toxivasomotrice," par Toussaint Barthélemy, Paris, 1893. I am, Sirs, yours faithfully,

X.

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—Can you or any of your readers tell me of any institution where the following case can be admitted by payment? A girl, aged six, of apparently weak intellect from birth, and epileptic, who has been cured of fits by trephining and now needs mental training and management. I am, Sirs, yours faithfully,

Feb. 25th, 1901. F.R.C.S.

Anxious.—1. The Schott treatment of heart-disease carried out at Nauheim. In certain cases the treatment has been successful, but no one should undergo it without having a medical opinion that he or she is likely to be benefited by it. 2. Cocaine can be used in certain cases as an anæsthetic, but it will not take the place of chloroform in big operations. The question is one which may well be put by our correspondent to her medical attendant.

Hilly Country would like to hear the views of gentlemen who have tried motor-cars for general practice. Will they replace the horse? What type is reliable for regular work and as a hill-climber? Is there any reliable car burning ordinary paraffin instead of petrol?

G. V.—It is not possible to exclude from district councils all who might possibly, and perhaps indirectly, benefit by the decisions of the councils. It is inadvisable that the medical officer should be both master and servant.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

WEDNESDAY (6th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (7th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

FRIDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

SATURDAY (9th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (4th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—9 P.M. Dr. J. Mitchell Bruce: Diseases and Disorders of the Heart and Arteries in Middle and Advanced Life. Lecture I.—Introduction. The Normal Heart at 40 and upwards. Influences that Threaten the Function and Structure of the Circulation at these ages. Strain. Alcohol. Tobacco. Free Living. Sedentary Habits. Uric Acid. Gout. Syphilis. Acute Febrile Processes. Nervous Influences. Bright's Disease. Emphysema. Complex causes. Family-Heart. Periodic Physiological Strain. Uterine Involution. The Grand Climacteric. Natural Dissolution of Advanced Life.

TUESDAY (5th).—PATHOLOGICAL SOCIETY OF LONDON (Jenner Institute of Preventive Medicine, Grosvenor-road, Chelsea).—8 P.M. Laboratory Meeting. Dr. G. Dean: Experiments on Immunity in Relation to the Pancreas and its Ferments.—Dr. A. Moore: The Immediate Diagnosis of Rabies.—Dr. Hédin and Mr. S. Rowland: On a Proteolytic Enzyme in the Spleen.—Dr. A. Harden: The Fermentation of Glucose by Sanarelli's Bacillus Icteroides.—Dr. R. T. Hewlett: (1) The Nature of the Indol Reacting Substance in Diphtheria Cultures; (2) The Identity of Achalme's Bacillus and the Bacillus Enteritidis Sporogenes (Klein).

THE BROWN ANIMAL SANATORY INSTITUTION (University of London, South Kensington, S.W.).—5 P.M. Dr. J. Rose Bradford (Professor-Superintendent): The Protozoa in their Relation to Disease, with especial reference to the so-called Tsetse-Fly Disease of South Africa.

WEDNESDAY (6th).—OBSTETRICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M. Specimens will be shown by Dr. Boxall, Dr. Lea, and Dr. W. Duncan. Dr. Horrocks (President): Inaugural Address.

THURSDAY (7th).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road, W.).—8.30 P.M. Dr. H. A. Caley: Some Clinical Features of Colitis.—Mr. J. Griffith: Gonorrhœal Iritis.

NORTH-EAST LONDON CLINICAL SOCIETY (Tottenham Hospital).—4 P.M. Clinical Cases.

FRIDAY (8th).—LARYNGOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—5 P.M. Cases will be shown by Sir Felix Semon, Dr. de Havilland Hall, Dr. J. Horne, Dr. Pegler, Mr. Lake, Mr. Waggett, and Mr. Robinson.

CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Discussion on the Recent Epidemic of Typhoid Fever among the Troops in South Africa (opened by Dr. H. H. Tooth).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (4th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Prof. C. Addison: The Topographical Anatomy of the Abdominal Viscera in Man.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. R. Crocker: Consultation. (Skin.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. Edwards: Malignant Disease of the Rectum.

TUESDAY (5th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. J. F. J. Sykes: The Influence of the Dwelling upon Health. (Milroy Lecture.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. Burney Yeo: Consultation. (Medical.)

ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. Dr. A. Macfadyen: The Cell as the Unit of Life.

WEDNESDAY (6th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Prof. C. Addison: The Topographical Anatomy of the Abdominal Viscera in Man.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—5 P.M. Prof. A. Carter: Clinical Lecture.

LONDON THROAT HOSPITAL (204, Great Portland-street, W.).—5 P.M. Dr. Stoker: Impaired Movements of the Vocal Cords. (Post-Graduate Course.)

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Latham: The Stages of Pulmonary Tuberculosis.

THURSDAY (7th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. J. F. J. Sykes: The Influence of the Dwelling upon Health. (Milroy Lecture.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL (Gray's Inn-road, W.C.).—8 P.M. Clinical Evening. Demonstration of Cases of Diseases of the Ear.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond street, W.C.).—4 P.M. Dr. Still: Nervous Phenomena associated with Rickets.

THE HOSPITAL FOR DISEASES OF THE SKIN (Stamford-street, Blackfriars).—3 P.M. Clinical Demonstration: Dr. P. S. Abraham.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. Saunders: Arsenical Neuritis.

CHARING-CROSS HOSPITAL.—4 P.M. Dr. W. Hunter: Pathological Demonstration. (Post-Graduate Course.)

FRIDAY (8th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Prof. C. Addison: The Topographical Anatomy of the Abdominal Viscera in Man.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. StClair Thomson: Consultation. (Throat.)

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

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THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1900, which was completed with the issue of Dec. 29th, and the Title-page to the Volume were given in THE LANCET of Jan. 5th.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 28th, 1901.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Feb. 22	30·23	NNE	0·06	65	46	32	40	40	Cloudy
,, 23	30·09	N.W.	...	66	47	40	40	42	Cloudy
,, 24	30·07	N.W.	...	63	47	41	43	46	Cloudy
,, 25	29·73	N.W.	...	61	50	40	40	41	Cloudy
,, 26	29·55	S.	...	55	46	41	42	44	Cloudy
,, 27	29·14	S.W.	0·20	58	50	42	45	46	Cloudy
,, 28	29·53	S.W.	0·02	61	49	43	42	43	Fine

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The Milroy Lectures

ON

PUBLIC HEALTH AND HOUSING:

THE INFLUENCE OF THE DWELLING UPON HEALTH IN RELATION TO THE CHANGING STYLE OF HABITATION.

Delivered before the Royal College of Physicians of London, on Feb. 28th and March 5th and 7th, 1901,

BY JOHN F. J. SYKES, M.D., D.Sc. EDIN.,

MEDICAL OFFICER OF HEALTH, ST. PANCRAS; LECTURER ON PUBLIC HEALTH, GUY'S HOSPITAL.

LECTURE II.[1]

Delivered on March 5th, 1901.

TENEMENT HOUSES.

MR. PRESIDENT AND GENTLEMEN,—The only statistics available in reference to the old type of vertical houses sublet in separate dwellings or tenements are those derived from insanitary areas as a whole, and these areas embrace also some other types of houses. However, the inference to be drawn generally from these statistics is that these houses produce a very unfavourable influence upon health, especially amongst children, and conduce to the acquirement of infectious diseases and to the prevalence of phthisis and respiratory diseases.

UNDERGROUND DWELLINGS.

Underground dwellings are mostly found in tenement houses and it is to be regretted that there are no statistics available in reference to this class of dwellings. An investigation into their mortality and morbidity would be of considerable value. The only statistics that give some indication are from Berlin as quoted in the table below in reference to the mortality in the several stories of dwelling-houses. From this table it appears that in houses of six storeys and over the order of mortality from lowest to highest occurs on the first, second, ground, and third storeys, the basement, and the fourth floor.

TABLE I.—*Mortality in Berlin according to the Storeys in Dwelling Houses.*[2]

Storeys of dwelling-houses.	Of every 1000 of inmates died.		
	1875 to 1876.	1880 to 1881.	1885 to 1886.
Basement	35·6	23·6	21·1
Ground floor	29·4	21·8	20·4
First floor	28·6	20·6	18·4
Second floor	29·2	22·3	18·8
Third floor	32·9	22·0	19·0
Fourth and fifth floors ...	36·5	28·5	21·4

It is surmised that the domestic circumstances of those living in the basement are doubtless better than those of the inmates of the fourth and fifth floors, and that this accounts for the slightly lower mortality.

"FLAT" HOUSES.

An investigation into the statistics of Peabody Buildings in London was made by Dr. A. Newsholme[3] in 1888–90, and he came to the following conclusions:—1. In the year 1890, contrary to expectation, and notwithstanding the high birth-rate, the age distribution of the population of the Peabody Buildings was less favourable to a low mortality than that of London as a whole. 2. The death-rate of the Peabody Buildings averaged about two per 1000 lower than that of London during the 12 years ending with 1885. During the four subsequent years the death-rate of the Peabody Buildings has remained about stationary, while that of London has shown a further decline, thus making the metropolitan death-rate approximate more closely to that of the Peabody Buildings. 3. The death-rate at different groups of ages is lower in the Peabody Buildings than for the whole of London with the exception of the ages from 0 to 5 years and from 15 to 25 years. 4. The infantile mortality is much lower in the Peabody Buildings than for all London. During the nine years from 1882 to 1890 it averaged in London 151·9 per 1000 births and in the Peabody Buildings 139·2 per 1000 births. 5. The death-rate from diarrhœa is slightly lower and from enteric fever only half that of the whole metropolis. 6. On the other hand, the diseases more directly due to direct infection (scarlet fever, diphtheria, and still more, whooping-cough and measles) are more fatal, and therefore probably more prevalent. If the Metropolitan Asylums Board would admit cases of measles into their hospitals the mortality from measles might be very much reduced. 7. The death-rate from phthisis and other tuberculous diseases is slightly higher in the Peabody Buildings than for all London. 8. Farr's formula as to the increased mortality with increased density of population has no application to the Peabody Buildings. 9. The true density that should be considered is the number of persons to each room, not the number of persons to a given acre.

The medical officer of health of St. Giles, Mr. S. R. Lovett, has kindly supplied me with the records he has kept through a series of years of the population, births, and deaths in four large blocks of buildings in St. Giles.[4] The numbers are not large, but the figures extend over a period of 10 years and have been carefully recorded and corrected for public institutions. These are set out in Tables II. and III., together with the corresponding figures for St. Giles district and for London. Comparing the buildings in St. Giles and in London for 10 years, from 1890 to 1899, the percentage of population under five years was respectively 17·0, 10 1, and 11·9 per cent.; the birth-rate was 37·3, 27·6, and 30 4 per 1000 of population; the mortality under one year of age per 1000 births was 130, 153, and 160; the death-rate under five years of age per 1000 population under five years of age was 50·7, 76·9, and 65·6; the death-rate over five years of age per 1000 population over five years was 10 4, 16·3, and 13·6; the death-rate at all ages per 1000 population at all ages was 17·3, 21·3, and 19·8; and the death-rate from the seven principal zymotic diseases was 3·0, 2·1, and 2·7.

Comparing these statistics with the results obtained by Dr. Newsholme, and taking his conclusions *seriatim*: 1. The age distribution appears to have varied. In 1881 in London 13 1 per cent. of the population were under five years of age, in 1890–99 the percentage was 11 9 only. 2. The death-rate in Peabody Buildings, which was from 1881 to 1885 about two per 1000 lower than in London, was from 1890 to 1899 in St. Giles's buildings about 2 5 lower than London. 3. The infantile mortality, which was 139 per 1000 births in Peabody Buildings compared with 152 in London, was later 130 in St. Giles's buildings, compared with 160 in London. The birth-rate, however, in the later period was three per 1000 lower in the buildings and a trifle higher in London. 4. The death-rate in the later period from diarrhœa was considerably lower, and from enteric fever only half that of London, the latter in exactly the same ratio as in the earlier period. 5. The death-rates in the later period from scarlet fever and from diphtheria, especially from the former, were higher in the buildings than in London. From whooping-cough the London rate was higher. These results compared in tabular form appear in Table IV.

Therefore, on the whole, the figures of the later investigation in the main follow the earlier, for although whooping-cough comes out much better measles comes out much worse, and the conclusion is confirmed that the diseases due to direct infection are more prevalent in buildings composed of multiple dwellings. An indication that the most important considerations lie in the density of persons in rooms, of rooms in dwellings, and of dwellings in houses, and that not merely density in rooms but in the three-fold sense of density in cubic space rather than square space, lies the key to the prevention of morbidity and mortality.

Although it has been shown that in Peabody Buildings, when compared with London or its districts, the death-rates are lower except those from infantile infectious diseases, two important facts must be remembered: (1) that the population of these buildings is a selected one living under special conditions, and (2) that of the population of all London some are living in old unhealthy houses

[1] Lecture I. was published in THE LANCET of March 2nd, 1901, p. 599.
[2] Boeckh: Statistische Jahrbuch der Stadt Berlin, Bands 4 and 14.
[3] Vital Statistics of Peabody Buildings, &c., Journal of the Royal Statistical Society, 1891.
[4] See also Annual Reports of St. Giles from 1890 to 1899.

TABLE II.—VITAL STATISTICS OF BUILDINGS IN ST. GILES FROM 1890 TO 1899.

—	Population.			Annual number of births.	Birth-rate per 1000 population.	Annual number of deaths under one year.	Infantile mortality per 1000 births.	Annual number of deaths.			Death-rates.		
	Under five years.	Five years and over.	Total.					Under five years.	Five years and over.	Total all ages.	Per 1000 under five years.	Per 1000 five years and over.	Per 1000 all ages.
Peabody Buildings, Great Wild-street ...	242	1,139	1,381	52·6	37·8	5·6	106	11·9	12·3	24·2	49·2	10·8	17·5
Peabody Buildings, Little Coram-street (Herbrand-street) ...	134	651	785	31·6	40·2	5·0	158	7·3	4·9	12·2	54·5	7·5	15·5
Model Buildings, Streatham-street ...	25	173	198	5·0	25·3	0·6	120	1·0	2·1	3·1	40·0	12·1	15·7
Thurstan Dwellings and Holland Dwellings, Newton-street	37	178	215	7·3	33·9	1·3	178	2·0	3·0	5·0	54·0	16·8	23·3
Total—Buildings ...	438	2,141	2,579	96·5	37·3	12·5	130	22·2	22·3	44·5	50·7	10·4	17·3
St. Giles ...	3,956	35,612	39,258	1,094	27·6	167	153	274	582	847	76·9	16·3	21·3
London ...	519,404	3,841,491	4,360,895	132,663	30·4	21,259	160	34,077	52,202	86,279	65·6	13·6	19·8

TABLE III.—DEATHS FROM THE PRINCIPAL ZYMOTIC DISEASES IN ST. GILES FROM 1890 TO 1899.

	Population.	Percentage under five years.	Number of deaths from								Total number of zymotic deaths.	Zymotic death-rate per 1000 population.
			Small-pox.	Scarlet fever.	Diphtheria and membranous croup.	Enteric fever.	Typhus and continued fever.	Measles.	Whooping-cough.	Diarrhœa.		
Peabody Buildings, Great Wild-street...	1,381	17·5	0·0	0·3	1·0	0·0	0·0	1·9	0·4	1·0	4·6	3·3
Peabody Buildings, Little Coram-street (Herbrand-street)	785	17·0	0·0	0·3	0·3	0·2	0·0	0·5	0·5	0·3	2·1	2·7
Model Buildings, Streatham-street	198	12·6	0·0	0·2	0·1	0·0	0·0	0·0	0·0	0·0	0·3	1·5
Thurstan Dwellings and Holland Dwellings, Newton-street	215	17·2	0·0	0·0	0·1	0·0	0·0	0·2	0·3	0·2	0·8	3·7
Total—Buildings	2,579	17·0	0·0	0·8	1·5	0·2	0·0	2·6	1·2	1·5	7·8	3·0
St. Giles	39,258	10·1	0·6	4·6	10·6	6·8	0·0	23·2	15·8	20·9	82·5	2·1
London	4,360,895	11·9	43·1	868·6	2177·0	611·3	24·0	2687·9	2315·1	3246·2	11973·2	2·7

TABLE IV.

—	Percentage of population under five years.	Death-rate per 1000 population.			Deaths per 1000 population from					
		At all ages.	Under five years.	Under one year.	Diarrhœa.	Enteric fever.	Scarlet fever.	Diphtheria.	Whooping-cough.	Measles.
Peabody Buildings, 1888–89 ...	16·9	16·49	59·1	126	0·56	0·07	0·34	0·53	0·85	1·0
London, 1888–89	13·1	17·96	55·8	143	0·57	0·14	0·22	0·33	0·55	0·55
Buildings in St. Giles, 1890–99.	17·0	17·3	50·7	130	0·58	0·07	0·31	0·58	0·46	1·0
London, 1890–99	11·9	19·8	65·6	160	0·74	0·14	0·19	0·49	0·53	0·61

and some even in whole areas of old unhealthy houses. In reference to "model dwellings," as they were then called, as Mr. Gatliff [5] put it 25 years ago, the inmates of these houses undergo a two-fold process of selection, firstly, the inmates select these houses as harmonising with their decent tastes, and in the second place, they are chosen from a long list of applicants according to the discretion of the manager. Houses in flats, such as Peabody Buildings, are also kept under strict supervision by resident superintendents, so that both the buildings and the tenants are maintained healthily, accidental nuisances are immediately remedied, and wilful nuisances are promptly stopped. Tenants who do not conform to the rules and regulations or who are otherwise objectionable either leave because they feel out of their element or are firmly persuaded to quit, so that only those who lead well-ordered lives in well-cared-for dwellings, in association more or less with those of similar inclinations, remain. In other words, the comparative healthiness of Peabody Buildings is due as much to improved supervision of usage as to improved methods of construction.

It is for these and other reasons that any comparison between the statistics as to the houses demolished on an insanitary area and of the new buildings erected on the site would be of little value. The changes effected are radical alterations. The width of the streets is increased, the building area is diminished, the height and size of the new houses are increased, and the dwellings are expanded through a larger amount of cubic space. The conditions for the admission of external light and air are improved, the conditions for the supply of pure water and the removal of foul are ameliorated, and the opportunities for dampness and

[5] On Improved Dwellings and their Beneficial Effect on Health and Morals, Journal of the Royal Statistical Society, 1875.

effluvia are absent. But in addition there is a fundamental change in the class of the population; those displaced never become the occupants of the new buildings, and whatever class of new building is erected they never will become occupants. The pick of a neighbourhood will always enter the newest and best type of dwellings and the residuum of the neighbourhood will always seek the oldest and worst.

DISEASED HOUSES.

The association of certain houses with certain diseases is a mode of classification adopted by many investigators. That communicable forms of disease should be associated with infected houses is undoubted, and "consumptive houses" are amongst this class. Pathogenic bacteria find within the dwelling more congenial soil than in the open air, and when they are not introduced by infected individuals they may be by the clothing and by the feet, or by animals and by insects. Although investigation has also been extended to "pneumonia houses," and suspected "cancer houses," these classes of houses must rather be regarded as suffering from infection remediable more by isolation, disinfection, and cleanliness, than by improved construction and usage.

EFFECTS OF CERTAIN DEFECTS OF DWELLING-HOUSES.

Most of the faults of the construction and arrangements of dwellings give rise to impure air and may be classed as air deficiencies and effluvia. Under this head, in addition to the curtailment of cubic space, would come want of perflation and ventilation, want of cleanliness, defects of drainage and of the removal of solid refuse, and unhealthy conditions of the surface and subsoil of the site and surroundings. The only conditions that may be regarded apart from deficient and impure air are coldness, dampness, deficient light, deficient water-supply, and general atmospheric impurity.

Atmospheric impurity.—Commencing with the last-mentioned first, it is an unavoidable consequence of the aggregation of communities that the atmosphere of a town in which the population lives immersed, from which it draws freely and continuously its air-supply, and into which it casts equally freely and continuously its gaseous emanations, should suffer deterioration. The ozone disappears, the oxygen diminishes, and the carbonic acid increases in relative proportion,[6] and gaseous and suspended impurities are added. The reduction of these impurities, especially smoke and fumes, is the work of municipalities, by supervision and by contributing towards restoring the balance in the composition of the atmosphere, by the provision of open spaces and vegetation.

Air-supply.—Air-supply is found wherever a community settles, but water-supply must be sought. The accessibility or facility of water-supply determines the locality of settlement, and the growth of the community is largely determined by the amount and the health by the purity. Private and public ownership, intermittent and constant service, are stages in the water-supply of towns and cities and, as Dr. G. V. Poore[7] has pointed out, high pressure and constant water-supply, combined with prompt water-carriage removal of excreta, has increased the aggregation of the population of European and American cities by enabling dwellings to be piled one upon another many storeys high. This process of piling upwards is of more recent growth in London than in continental cities, and as a newer departure, and less understood structurally, it is of great importance at this period in its possible effects upon health.

Water-supply.—The principles of general water-supply may be said to be now fairly well known both in their application to public supply and private service, so that our cities are spared the serious effects of impure or polluted water—effects so well known as not to require re-statement. The main points that interest us at the moment are sufficiency and accessibility. The constant high-pressure system supplies the sufficiency, but the accessibility is not to be found, especially in ordinary vertical houses, sublet in many dwellings or tenements where the difficulties of the maintenance of cleanliness are increased by the closer and closer aggregation of population and a premium is placed upon the use of water by the vertical and horizontal distance through which it has to be carried to and fro. *Mutatis mutandis*, similar observations apply to drainage, and the distance to be traversed in sublet or tenement houses, especially by those on the upper floors, to get rid of liquid refuse and fouled water, also militates strongly against cleanliness, and cleanliness largely influences the purity of the air of interiors.

Deficient light.—Darkness is known to cause anæmia and to retard the development of animals, and the younger the animal the greater the effects.[8] In the absence of light plants etiolate, without light there is no fructification, and few plants can flower without direct sunshine. Direct sunshine, and even diffused daylight, warms and dries, sets up air-currents, removes stagnant air, dissipates humidity, resolves unstable compounds and conduces to cleanliness, and the absence of light produces the opposite result. Darkness favours the growth of cryptogamic plants, and the most lowly organisms flourish best in semi-darkness, notably, the moulds and the bacteria. On the contrary, the higher plants and animals are most benefited by light, which is destructive to the lower organisms which number amongst them the injurious pathogenic organisms of man. Tyndall, Downes, Duclaux, Koch, Roux, Raum, Ransome, and many others have shown by experiment that light is inimical and darkness beneficial to micro-organic life. The bacilli of anthrax, diphtheria, and tuberculosis have so responded, and many other pathogenic and non-pathogenic organisms, including the pneumococcus, and the pyogenic cocci. The most recent experiments[9] are upon tuberculous sputum, and they have shown that one hour's drying and exposure to direct sunlight has destroyed its virulence, and that from four to seven hours' exposure to diffuse light in all cases markedly diminished its virulence and in some instances destroyed it. Briefly, the indications of experiment and observation are that the healthiness of the dwelling in this country increases in proportion to the amount of daylight and sunlight admitted.

Dampness.—Marshy soil has from time immemorial been associated with malaria and ague, and it is now known that stagnant surface water in the neighbourhood of dwellings is the breeding-ground for the larvæ of mosquitoes that act as carriers of the parasites of malaria from infected to uninfected individuals. Wetness of the soil or subsoil is also known to predispose the dwellers upon it to throat-soreness, rheumatism, respiratory diseases, and phthisis. The earliest indication in this country of the effect of damp subsoil was given by Sir George Buchanan in his inquiry of 1865, upon which Sir J. Simon said[10] that the statistics indicate "that the drying of soil which has in most cases accompanied the laying of main sewers in the improved towns has led to the diminution more or less considerable of phthisis"; and he cited the reduction in the death-rates of the first 15 towns in Dr. Buchanan's table as being in Salisbury 49 per cent. of its previous rate, in Ely 47 per cent., in Rugby 43 per cent., in Banbury 41 per cent., in Worthing 36 per cent., in Macclesfield 31 per cent., in Leicester 32 per cent., in Newport 32 per cent., in Cheltenham 26 per cent., in Bristol 22 per cent., in Dover 20 per cent., in Warwick 19 per cent., in Croydon 17 per cent., in Cardiff 17 per cent., and in Merthyr 11 per cent. Dr. Bowditch of Boston, U.S.A., had in 1862 arrived at similar conclusions, which were subsequently published. Dryness of the site and of the house are recognised as essential to a healthy dwelling. More recently[11] the effect of drying upon the virulence of cultivations of tubercle bacillus and of tuberculous sputum, the specimens being kept in the dark in closed capsules with access of little air, has shown that moderate desiccation slightly retards the first manifestations of tuberculosis and prolonged drying ultimately kills the bacillus. All our largest towns are now sewered, and drying of the soil and subsoil is regarded as essential, as well as the prevention of the rising of dampness through floors and up walls and the soakage of wetness through roofs and down walls.

Coldness.—This is essentially a characteristic of jerry-built houses. These houses are so styled more on account of the inferior materials and bad workmanship in the carcasses than of the rough fitting and finishing, or of the scamped fitting of insanitary appliances. The fitting of green or unseasoned woodwork and joinery, and the finishing with plaster containing no hair, are apt to check themselves at the end of a short time. The laying of porous, crumbling bricks, with mortar deficient in lime, to sustain "shaky" or splitting timber, is controlled more or less by

[6] Angus Smith: Air and Rain.
[7] The Dwelling House, 1897.
[8] W. F. Edwards, M.D.: Influence des Agens Physiques sur la vie, 1824.
[9] P. Jousset: Comptes Rendus des Séances de la Société de Biologie lii., 1900.
[10] Ninth Annual Report to the Privy Council, 1866.
[11] Ransome: Tuberculosis, Weber-Parkes Prize Essay, 1897.

the surveyor or building inspector, who also now requires damp-courses in the walls, concrete in the basement, and dry areas around the building. The main characteristics of jerry-built dwelling-houses are deficient dryness and deficient equability of temperature. Popularly they are said to be cold and damp, the dampness coming directly through the walls and the coldness being also due to this flimsiness. Increased vigilance and building by-laws have made it much less easy to build this class of house, and this to the advantage of public health, as, apart from other insanitary conditions, the coldness and dampness within the dwelling are not only injurious themselves but indirectly they lead to the closure of all openings and the stagnation of air in order to obtain more warmth.

Air-deficiency.—The ill-effects of deficient wind-play in narrow streets, want of perflation as seen in extreme cases in back-to-back houses, and insufficient cubic space in dwellings curtailed in size, and crowding in the dwelling-rooms, have already been dwelt upon. In addition to respiration the air is fouled by combustion, which in better-class houses generally takes place by the use of excessive gas-light, but in poor tenement houses the smoky chimney almost invariably adds to the foulness of the air, and the components of coal smoke we know are prejudicial to health. The smoky chimneys indicate also the want of ventilation in such houses, in some almost amounting to stagnation. The ill-effects of stagnation of air are also demonstrated by the "dry-rot" that sets in below unventilated floors, the absence of air-currents not removing condensed moisture, and the fungus spores which are deposited flourishing in an equable temperature, in darkness and quiescence. It has also been shown by experiment[12] that finely divided tuberculous matter and tuberculous sputum in free currents of air are rapidly deprived of virulence, and in the absence of currents of air the bacillus retains its power for long periods of time.

Effluvia.—The surface soil is a great collector of decomposing refuse matter and micro-organisms which in dry weather may be wafted by the air and in wet weather may be carried by the foot of man or animals into houses and so contaminate the air of dwellings and food. Pathogenic organisms find in the dwelling the most favourable warmth and nutriment conducive to their growth and distribution. Dr. Sidney Martin[13] conducted a series of laboratory experiments upon virgin soils and organically polluted soils with a view to ascertaining the results when inoculated with the typhoid bacillus. The virgin soils, both peaty and sandy, after inoculation with various typhoid cultures and incubation at various temperatures showed no sign of growth whatever when tested at the end of 14 days, 20 days, and 23 days. On the other hand, the organically contaminated soils from the neighbourhood of habitations, after sterilisation and inoculation with the typhoid cultures, showed that either a part or the whole of the experimental soil had become pervaded by the growing bacillus, the results varying in extent with temperature and moisture, but also showing that the growth and diffusion take place at ordinary temperatures of the atmosphere. Dr. Martin has also shown that this multiplication is still going on at the end of many months. In 1896–97 Dr. John Robertson,[14] the medical officer of health of Sheffield, made a series of out-door experiments, inoculating patches of soil by drenching the surface with typhoid cultivations in bouillon diluted with water, the superficial surface of the soil having been removed and replaced. The results showed that the typhoid organism is capable of growing rapidly in certain soils and that under certain conditions (presumably continued pollution) the organism can survive from one summer to another in spite of rain and snow, frost and heat. Some laboratory experiments on similar soil went to show that vegetation such as grass was detrimental to the growth of the organism. Following upon this Dr. P. Boobbyer[15] made a statistical investigation into the distribution during the 10 years from 1887–96 of typhoid fever cases among houses in Nottingham furnished with different types of closets, and he found that the proportional annual incidence in midden-privy houses was one case in 37 houses, in pail-closet houses one in 120, and in water-closet houses one case in 558 houses—that is, that the incidence upon houses with privies was more than three times as great as that upon houses with pail-closets, and that upon houses with pail-closets more than four and a half times greater than that upon houses with water-closets. Further, he found that the disease is much more liable to recur after it has arisen in the privy houses and the pail-closet houses than in the water-closet houses. In 1897, of the 41 second consecutive cases that occurred in single houses, 37 were in pail-closet houses, four were in privy houses, and there were none in water-closet houses. Of the 11 third consecutive cases that occurred in single houses, eight were in pail-closet houses, three were in privy houses, and there were none in water-closet houses. Of the four fourth consecutive cases in single houses all were in pail-closet houses. He pointed out that the closet-pail is essentially only a small portable privy above ground, and is capable of polluting the air, the soil, and the surroundings almost as much as the privy, especially by spilling and leakage in scavenging. It has been proved by experiments[16] upon rabbits, guinea-pigs, and rats, and has been confirmed, that the inspiration of putrid gases predispose the animals to the pathogenic action of even attenuated typhoid bacilli and of bacterium coli; that this predisposition is due to the combination of gases given out by putrid fermentations, and not to any one separately; and that it is probable that this experimental predisposition is diminished by prolonged breathing of the said gases. In other words, that the gases from drains, from sewers, and from other polluted sources predispose those who inhale them sufficiently, and especially new-comers, to enteric fever. These gases lower nutrition and vitality and probably tend to predispose to other ailments. In addition to enteric fever, it is very generally admitted that sewer-gas may cause sore-throat, and it is well known that persons suffering from sore-throat are susceptible to diphtheria and to scarlet fever. Septic poisoning, or blood-poisoning, has frequently been found associated with sewer-gas, and its congeners, puerperal fever and pneumonia, have often followed. Diarrhœa, too, has been attributed to foul gases either indirectly or directly. Professor Corfield[17] has given a large number of instances illustrating the close connexion between sewer-gases and these diseases. Ground vapours also produce their ill-effects. By experiment it has been shown that condensed organic vapour from ground-air or from human breath[18] forms an excellent cultivating medium for the bacillus of tubercle when away from the influence of fresh air and sunlight or daylight. This power of promoting growth is particularly manifest when the supporting substance is common wall-paper. On this substance the growth of the bacillus may take place at the ordinary temperature of dwelling-rooms. Ground vapours from below dwelling-houses, being foul and damp, are also known to pollute the air of interiors, to deteriorate the health of the inmates, and to predispose them to disease.

All these experiments and observations indicate the necessity for such construction, maintenance, and usage as best conduce to the cleanliness and purity of the air in and around dwelling-houses in order not only to prevent disease, but also to prevent the loss of that vitality, vigour, and energy which cannot easily be measured by experiments or by statistics.

CONSTRUCTION AND MIS-CONSTRUCTION.

1. *Streets, street-blocks, and houses; front and rear space.*—The hygienic influence of sunshine and daylight, of wind and breeze, in dispelling dampness, destroying micro-organisms, and dispersing gaseous and suspended impurities, has been proved by experiment and experience. Therefore the direction and width of streets and the height of houses are important points in their influence upon dwellings and health. The orientation of streets may be either squarely or diagonally in line with the four cardinal points. As the main object of orientation is to provide the maximum of sunshine to houses, the rear as well as the front must be considered. When houses are constructed in parallel rows, with open interspaces, so that there are no houses in the streets at right angles, as is sometimes seen in recently erected blocks (Fig. 1, *a*), the square orientation obtains the fullest and most equable distribution of sunshine. But when houses are built around all four sides of rectangular street-blocks then the diagonal orientation secures most sunshine, although with complete enclosure of the central space the rear receives less perflation—the common form of construction of street-blocks (Fig. 1, *b*).

[12] Ibid.

[13] Supplement to the Report of the Medical Officer of the Local Government Board, 1896–97.

[14] Brit. Med. Jour., Jan. 8th, 1898.

[15] Annual Report of the Medical Officer of Health of Nottingham, 1897.

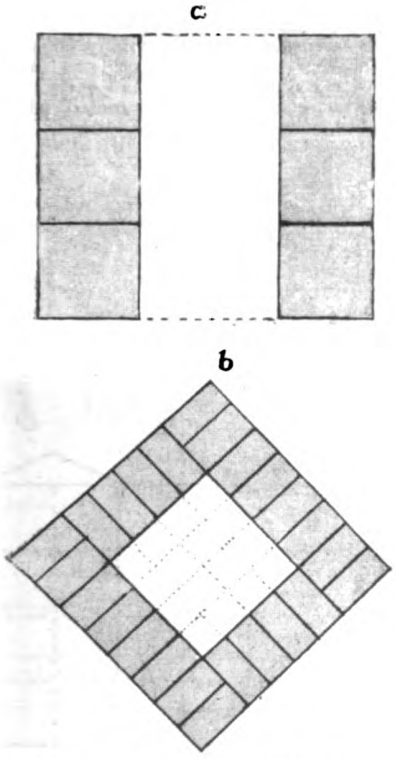
[16] Dr. Giuseppi Alessi: On Putrid Gases, &c., Journal of the Sanitary Institute, vol. xvi., 1895.

[17] Diseases and Defective House Sanitation, 1896.

[18] Dr. A. Ransome, F.R.S.: Proceedings of the Royal Society, vol. lxii.

In a street oriented east and west the front of the buildings on the south side of the street and the back of those on the north side are deprived of sunshine, and in order that the front of those on the north side and the rear of those on the south side may obtain sunshine it would be necessary, according to the estimate of Clement, to increase the width

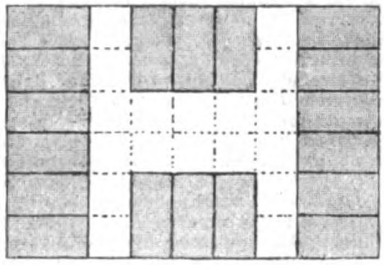
FIG. 1.



a. Shows a method sometimes adopted for new blocks of buildings with streets around. b. Shows a common arrangement of existing street blocks of houses, the internal spaces being more or less built over.

of "east and west" streets and rear spaces in 60 degrees of latitude (e.g., Stockholm) to more than seven times the width of those in 40 degrees of latitude (e.g., Madrid) and, according to the estimate of Trélat,[19] to widen streets north and south twice, and streets east and west four times, the height of the houses bordering them. Both of these are impracticable, so Arnold has concluded that the orientation of streets is beyond exact control, and attention should rather be directed to limiting the height of houses in relation to the width of streets. It must also be remembered that a north light without sunshine is preferable for many industrial and artistic occupations. Whilst admitting that the front and rear spaces of houses in east and west streets require to be wider than those in north and south streets, the practical limit has been adopted that houses should not exceed in height the width of the open spaces at the front and at the rear, but as only half the space at the rear is assumed to belong to one house the house is permitted to be raised twice the height of the width of its own rear space, applying the 45-degree angle to the front and the 63½-degree angle at the rear. This is the principle embodied in the London Building Acts, 1894 and 1898, although its application is limited to new buildings and new streets. Briefly the provisions of these Acts are as follows.[20] No new dwelling-house may be erected so as to exceed 80 feet in height (exclusive of two storeys in the roof) without the consent of the London County Council (Sections 47, 48, 49, and 50 of the 1894 Act). The height of a dwelling-house erected in a street less than 50 feet wide and laid out after August 7th, 1862, must not exceed the measurement between the front wall of the building and the opposite side of the street (Section 49 of the 1894 Act). Working-class dwellings are specially limited as to height, where they are (whether on old foundations or not) within 20 feet of the centre of any highway, at whatever date laid out. The height of the dwelling-house in such case must not, without consent of the Council, exceed the measurement between its front wall and the opposite side of the street (Section 13 of the 1894 Act). All dwelling-houses abutting on streets are further limited in height by the air-space provided at the rear of them. On a street laid out after 1894 the height may not exceed twice the open space behind it. This open space must be of an aggregate extent of not less than 150 square feet. On a street laid out before 1894 the height may not exceed twice such depth with an addition of 16 feet. The open space behind the building may in general be covered up to a height of 16 feet, but this is not allowed in the case of working-class dwellings (Section 41 of the 1894 Act). Working-class dwellings not abutting on streets may not be built until the council or tribunal of appeal has sanctioned the plans for them, but such sanction cannot be refused if it is proposed to provide about the dwellings an open space or spaces equivalent to the open space or spaces

FIG. 2.



A common method of laying out a street block for dwelling-houses in suburbs.

which should have been provided under the Act if such dwellings had been erected abutting on a street laid out before 1894 (Section 42 of the 1894 Act). For the purpose of securing through perflation to streets the London Building Acts also empower the County Council to refuse to sanction a new street unless it exceeds 40 feet in width and is open at both ends from the ground upwards. This prevents future culs-de-sac, although many remain in existence.

The Acts provide that on a domestic building erected in London after Jan. 1st, 1895, in an existing street, and having a basement habitable for sleeping or living purposes, there must be provided in the rear for the purpose of light and air an exclusive open space of not less than 100 square feet free from any erection thereon above the level of the adjoining pavement. If the building erected be in a new street, then in the rear there must be provided an exclusive open space of not less than 150 square feet, extending throughout the entire width of the building and to a depth of at least 10 feet from the building. Of this open space 100 square feet must be left open for a habitable basement. If the basement be not constructed to be habitable the open space at the rear may be entirely built over up to the level of the adjoining pavement, and if the ground floor be not constructed to be habitable the open space at the rear may be built over to a point 16 feet above the street level. There is no provision to leave any open space for the purpose of drainage nor is any alternative provision made to cut off aerial communication between an entirely built-in basement and ground floor to 16 feet above the pavement and a domestic building erected over. One or other provision of this kind is desirable for the protection of health. This is more especially so, as under the new Building Acts new buildings are being erected on old sites throughout London, and enlarged so as to cover the whole surface by building over any existing area at the back up to 16 feet above the pavement, any previously existing air-space being blocked out, and the two or more lower floors being built back-to-back. The whole of some street blocks are being so built in, with offices below and dwellings above, and with an enclosed central well, which is permitted provided the width equals half the height and the depth exceeds twice the width of

[19] Tenth International Congress of Hygiene, Paris, 1900.
[20] The Housing Question in London, London County Council, 1885–1900.

the well. This is a more restricted light and air requirement than the continental system of a central courtyard with *porte-cochère*.

The lines adopted for the admission of light and air to houses have passed three graduated stages. The first stage is illustrated by mediæval houses with projecting upper storeys, the second by straight-fronted existing streets, the third by the backs of more recently erected houses with receding upper storeys such as those erected in a street off the Thames Embankment, between Blackfriars and the Temple. Lifting the area up 16 feet above the level of the street does not apply to working-class dwelling-houses, and as the rear of such houses must have a space equal to half the height when two blocks of such houses back upon each other the two intervening spaces would be of a width equal to the height of the buildings, an angle of 45 degrees. But these intervening spaces are usually thrown into one and it is difficult to see what there is to prevent this space being reduced to half its width, with an angle of 63½ degrees only, instead of 45 degrees, buildings being erected twice the height of the one space in the rear used in common. Of course, the careful provision of external light and air demands the equally careful provision of large windows extending up to the ceiling of dwelling-rooms, and wherever it can be afforded the fixing of ventilating grates in habitable rooms is desirable though not essential.

For the purpose of preventing houses being erected too high or sunk too deep Dr. Poore[21] has suggested the provision of exclusive open space at ground level equal to one-fiftieth of the cubic contents of the house. The height of houses can be controlled by the angle of light and air. The suggestion would prevent the construction of basements, but is this the object to be aimed at? Is it not rather the prevention of the habitation of shut-in basements and making provision for them to be cut off from aerial communication with the dwelling-houses above? This is important, because in the larger types of building containing many dwellings the soil- and other drain-pipes become practically equivalent to the sewer draining a street of dwellings constructed on the old plan.

With regard to the surface of the open spaces immediately contiguous to dwelling-houses the soil in towns always becomes polluted and prejudicial to health. There are two ways in which it can be effectually dealt with, the one is by cultivation as a garden, the other is by impervious paving so levelled and drained as to be readily cleansed. As a temporary expedient the surface may be gravelled and rolled, but this is not of permanent benefit. Many small gardens in town are merely barren wastes, and in deciding as to whether a space is a garden or yard the test is whether it is regularly cultivated with grass or permanently paved. It should be definitely provided that such spaces should be regularly cultivated or permanently paved instead of leaving it to vague by-laws that are difficult, if not impossible, to apply.

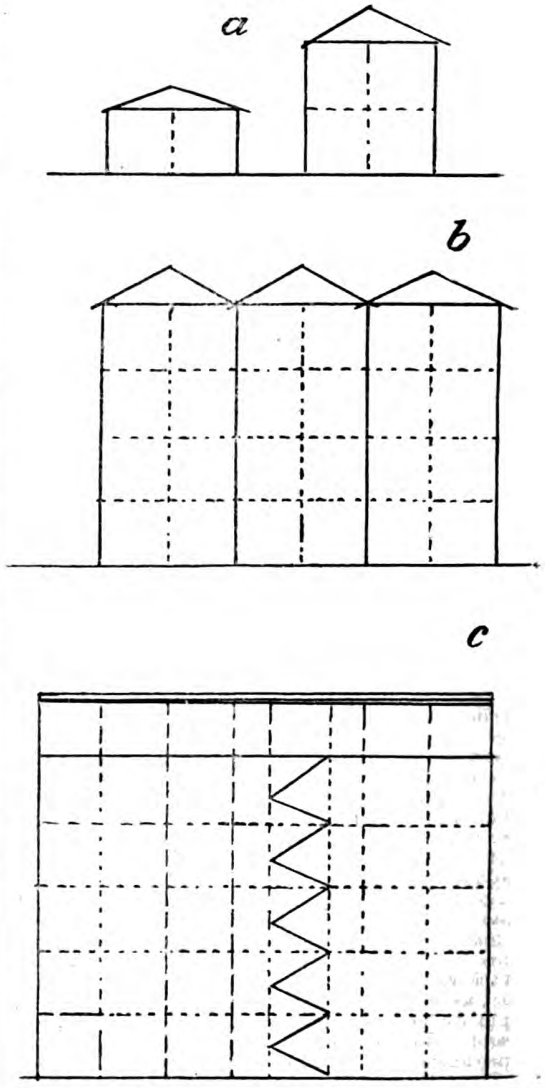
CLASSES OF DOMESTIC BUILDINGS AND DWELLINGS AND THEIR ARRANGEMENT.

Although in considering construction and mis-construction dwellings of the working-classes, especially in new blocks of buildings, have been kept in view, nevertheless the conditions and principles discussed also apply more or less to dwellings of the affluent, especially those that are being erected in increasing numbers in flats of various kinds (see Figures 3 and 4).

There are three main structural divisions of domestic buildings used as family dwelling-places: the horizontal, the vertical, and the vertico-horizontal. The *horizontal* house presents three types according to size: the one-storey cottage, the homestead, and the bungalow, wholly detached from each other. The *vertical* house, in one or more storeys, may be regarded as a cottage, a villa, or a mansion, according to size and according to external relationship to each other. Such houses are detached, semi-detached, and in terrace; the first with four contiguous sides open, the second with three contiguous sides open, and the third with two opposite sides open. These types of houses, when constructed back-to-back, produce respectively the semi-detached, the four-group, and the true back-to-back house, the first having three contiguous sides free, the second two adjacent sides, and the third only one side open. So that in the four-group type of house with two adjacent open sides, instead of the ventilation, or rather perflation, being "through" or squarely across the building it is "diagonal" or obliquely across, and in the true back-to-back type of house with only one open face there is neither "diagonal," "through," or "cross" ventilation or perflation of any kind. This characteristic of having only one open face is not confined to houses built back-to back, but is common to all houses built in terraces with the rear-front closed in on account of abutting on other property over which there is no right of light and air, and hence houses have come to be distinguished as "through houses" and as not through-ventilated (or rather perflated) houses.

The *vertico-horizontal* house essentially consists of horizontal dwellings superimposed upon one another and approached by a common staircase and entry. This compound type of house may also be constructed, with regard to others, detached, semi-detached, or in terrace. Such houses

FIG. 3.



Types of dwelling-house. *a*, a past type; *b*, existing type; *c*, future type.

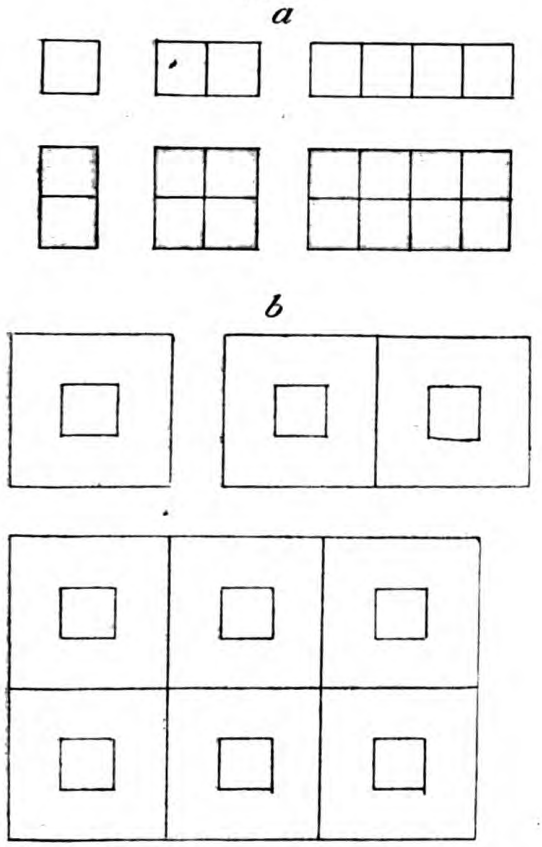
may also be constructed in four-group, or back-to-back, by means of internal staircases and corridors running through the centre, as seen in some of the earlier tenement houses erected in New York.[22] It is obvious that in the compound vertico-horizontal type of house the four-group and back-to-back prevents perflation even more than in the simpler and smaller types of domestic buildings. Although such glaring back-to-back style of building in the vertico-horizontal house becomes almost self-prohibitive this type of house

[21] The Dwelling-house.

[22] E. R. L. Gould, Ph.D.: See Plans No. 5 to No. 12 in the Eighth Special Report of the Commissioner of Labor, Washington, 1899.

enables much more complicated methods of construction to be adopted with the view of economising space while ignoring health requirements. If the constituent dwellings in such houses are prolonged sufficiently far laterally they may be made to extend round two, three, or four sides of a hollow square or rectangular court, and when these hollow squares are placed side by side and back to back there is reproduced on a much larger scale, not four-group and back-to-back houses but four-group and back-to-back blocks of houses. The same effect is produced when one or more of the sides of the internal court are occupied by the blank walls of adjoining buildings. This style of building is met with in continental towns, especially the larger French cities, and is figured in one well-known work[23] amongst

FIG. 4.



a. Showing how detached, semi-detached, and terrace houses become semi-detached, four group, and true back-to-back houses. *b*. Showing how the same thing may take place in a compound building round a central court.

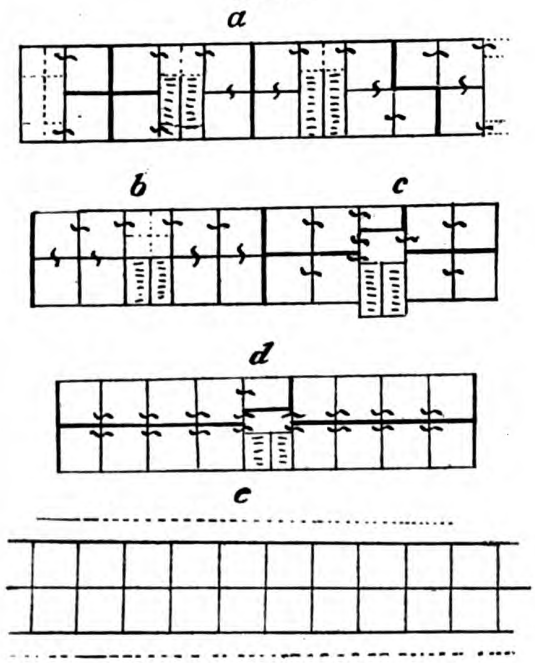
types of Parisian working-class dwellings, and next to it is figured a four-group block. There is no *porte-cochère* or gateway to the internal court, which somewhat mitigates the condition of some of the courtyards of Parisian blocks of dwellings or flats of this type, although it procures little or no perflation to the dwelling-rooms overlooking the courtyards.

Internal enclosed courts are now required by the Building Act in London to be provided with communication into the outer air at the lower end when they have the windows of *habitable* rooms opening into them and the height of the court is greater than the length or breadth; and a court open on one side, the depth of which exceeds twice the width, cannot have the window of a habitable room opening into it lower than half the height of the building. The pectinated form of building is modified to more reasonable dimensions by this last provision, but constructive ingenuity cuts it very fine.

These compound domestic buildings lend themselves to another complication (see Fig. 5). The dwellings may themselves be so arranged as to form semi-detached four-group and back-to-back dwellings. The type of the semi-detached dwellings are dwellings of two rooms, one room on each front, and one dwelling on each side of an open staircase on each floor, although a healthful is not an economical method of building and is seldom adopted. The type of the four-group dwellings may be found in London constructed in the simplest form by placing four single or four two-room dwellings side by side and back to back, the dwellings being approached by an open staircase with four dwellings on each floor, and although the open staircase is beneficial the grouping is not, especially in the case of the inner room in the two-room dwellings. The type of the back-to-back dwelling is found wherever there is a central wall or partition separating the front rooms from the back rooms. This separation ought to be absolutely prohibited by law. If, for instance, in the last-mentioned example the rooms of the front two-room dwelling were made to open into the rooms of the back two-room dwelling, there would be a four-room dwelling with through perflation of the rooms and the staircase. But not only is the perflation of the rooms stopped by cutting off the front rooms from the back rooms, but also the perflation of the staircase by the addition of another room so as to close in one end of the staircase between the dwellings upon each landing. The cutting off of the front rooms from the back rooms may be extended to three, four, or more consecutive rooms, and so a pile of back-to-back dwellings may be erected. In the worst example of this form of construction that I know of, which was only erected a few years ago, there are four four-room dwellings on each floor, an odd room being added to one of the front dwellings; the rooms in each of these dwellings lead one into the other and are all situated on the same front of the building, so that there is absolutely no perflation. When it is added that the building faces north and south, it will be readily understood that the dwellings on the north face not only have no perflation but never see the sun. Outside balconies on the front and rear face of these compound buildings enable the back-to-back method of construction to be adopted to an unlimited extent.

Internal common staircases in compound dwelling-houses, by want of ventilation, are prejudicial to health, as they render the contained air common to all the dwellings opening

FIG. 5.



a. Single-, two-, and three-roomed dwellings in four groups. *b*. Block of four-room dwellings with open staircase and lobby. *c*. Block of back-to-back dwellings of two and three rooms. *d*. Showing a block of back-to-back dwellings approached by a single stair. *e*. Showing that outside balconies give unlimited scope for back-to-back construction.

[23] Planche, No. 20: Habitations Ouvrières en Tous Pays; Muller and Cacheux, Paris, 1889.

upon them. It is essential that a common stairway should be external or against an outer wall and be amply ventilated at each floor level by permanent openings. The insertion of windows may secure light but does not necessarily secure air. The common stairs in artisans' dwellings are usually constructed from three and a half to four feet wide.

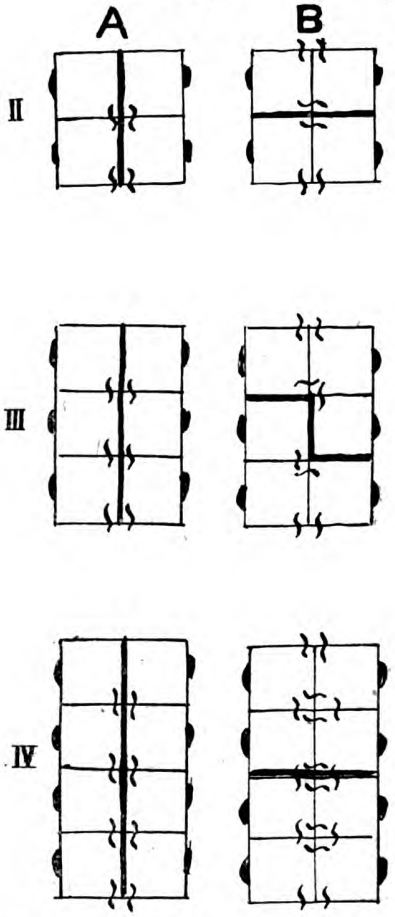
It must be borne in mind that a "flat" in all cases in which the rooms are entered directly from the common stair or in which the vestibule, lobby, or corridor is not ventilated directly from the outer air is essentially one large space divided into smaller spaces, compartments, or rooms and the air-supply is common to all, as there is no ventilated staircase open to each room as in an ordinary house. If there be a corridor in the dwelling it may be found of an I L, T, or H shape, according to the number of rooms, and the placing of hinged fan-lights over the doors of the several rooms or compartments does not procure the ventilation of the corridor into the open air. The fixing of a hinged fanlight, or of a permanent open louvre, over the outer door upon the common stair, when the common stair is closed by windows and doors, merely places the air of each dwelling, by means of the common stair, in communication with the air of all the other dwellings in the building. The windows and doors on common stairs are rarely left open except in the height of summer. This inter-communication of air-supply is a condition that also prevails in ordinary tenement houses sublet in separate dwellings, with one or more families on every floor, and upon which the comment of sanitarians has not been sparing.

In new buildings the Local Government Board wisely insist upon lobbies between water-closets and dwellings being ventilated by permanent openings into the outer air and upon common staircases being similarly ventilated, but the London County Council state[24] that they have provided windows—and, it may be added, doors—to the lobbies and staircases in such buildings because of the unsightly way tenants attempt to block the openings. Section 60 of the London Building Act, 1894, provides that in every building constructed or adapted to be occupied in separate tenements by more than two families the principal staircase used by the several families in common shall be ventilated upon every storey above the ground storey by means of windows or skylights opening directly into the external air, or shall be otherwise adequately ventilated. This is a *non sequitur*. Such a provision overlooks the fact that a glazed window is a means for the admission of light, but is not necessarily a means of ventilation. My experience is that windows of common stairs are never opened except in the height of summer, and such a provision is illogical when the object in view is to provide a permanent form of ventilation to prevent the air-supply of a building from becoming common to a number of different families. Continuous ventilation by means of permanent openings is the only method of construction of permanent value, and the reason is obvious. The windows will only be opened when those affected are all agreed upon it, and common experience shows how little possible it is to agree upon such a point. This is also a reason for providing that through ventilation shall be obtainable within the dwelling, without necessarily being altogether dependent upon the common staircase, even when it is permanently open on one side to the outer air.

In order to provide for through ventilation, and against back-to-back dwellings, I have on various occasions insisted that one of the conditions of construction must be that in every dwelling of more than one room the alternate rooms must be situated upon opposite sides of the building in such a manner as to secure perflation from opposite fronts.[25] Examples of the non-observance of this condition are to be found in numbers of buildings in London, and even in some of the later buildings erected by the London County Council. The answer to this that might be advanced—namely, that the open staircase is intended to provide the perflation, is cut away by the fact that the Council have admitted that they now enclose them. The above proposal is illustrated in the diagram (Fig. 6).

The A column shows a two-, three-, and four-roomed dwelling constructed respectively with only one entrance and back-to-back. The B column shows the application of the requirement that every dwelling of two or three rooms should have one of the rooms situated on the opposite front of the building on which the other room or rooms are situated and every dwelling of four rooms two of such rooms.

FIG. 6.



The sign resembling S indicates doorways. To explain this diagram it must be premised that in a building two rooms deep with dwellings let in single rooms it would be impossible to have the window of a single room opening on to both fronts of the building and so the principle of through ventilation for single or odd rooms cannot be made to apply. The diagram therefore shows two (II.), three (III.), and four (IV.) room dwellings (horizontally) in two stages, A and B (vertically).

With reference to the size of rooms in new buildings the London County Council have adopted a minimum of 96 square feet for bedrooms and 144 square feet for living rooms, and the latter may be taken as a maximum, with a height, now, of eight and a half feet, formerly nine feet. It is a mistake to make large rooms for the poorer classes as it leads to overcrowding, the placing of more beds into the rooms, and the mixing of the sexes. If the same sized family that can live in one very large room live in two smaller rooms they are housed under better conditions of aeration, decency, and physical well-being. It is important, also, to remember that in raising the age at which children remain at school, and at which they can commence to work in factories, tends to keep them at home with their parents, without earning anything towards enlarging the dwelling by another room.

The minimum number of rooms in dwellings for the poorer classes is a subject[26] upon which I entered fully at the Birmingham Health Congress and pointed out that the differences of sex and age are the factors that render family life impossible in a single room and that in Glasgow Dr. J. B. Russell had shown that between 1871

[24] The Housing Question in London, London County Council, 1900, p. 50.

[25] Separate Dwellings, Public Health, 1900.

[26] Dwelling Accommodation in Large Cities, Journal of the Sanitary Institute, 1889, vol. xx.

and 1891 the persons living in one room fell from 30·4 per cent. to 18·0 per cent. of the total population, whereas those living in two and three-room dwellings rose exactly in the same proportion as those in the one-room had fallen—namely, from 54·7 per cent. to 67·2 per cent. of the total population.

TABLE V.—*Showing Proportion of Persons to Rooms in Glasgow from 1871 to 1891.*

Dwellings of	Census, 1871.	Difference, 1871 to 1881.	Census, 1881.	Difference, 1881 to 1891.	Census, 1891.	Difference, 1871 to 1891.
One room	30·4	- 5·7	24·7	- 6·7	18·0	- 12·4
Two rooms	41·5	+ 3·2	44·7	+ 2·8	47·5	+ 6·0
Three rooms	13·2	+ 2·8	16·0	+ 3·7	19·7	+ 6·5
Four rooms	5·8	+ 0·3	6·1	+ 1·1	7·2	+ 1·4
Five rooms and upwards	9·1	- 0·6	8·5	- 0·9	7·6	- 1·5
—	100·0	—	100·0	—	100·0	—

A Clinical Lecture

ON

THE STATISTICS OF GASTRIC ULCER, WITH SPECIAL REFERENCE TO GASTRIC HÆMORRHAGE, ITS FREQUENCY AND FATALITY.

Delivered at the Edinburgh Royal Infirmary on Feb. 12th, 1901,[1]

BY BYROM BRAMWELL, M.D., F.R.C.P. EDIN.,
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GENTLEMEN,—On Wednesday last Mr. Mayo Robson delivered an "Address on Gastric Hæmorrhage and its Surgical Treatment" before the Medico-Chirurgical Society of Edinburgh. In that address he advanced certain conclusions with regard to the total mortality caused by gastric ulcer and the frequency of death from hæmorrhage in cases of gastric ulcer which are not in accordance with my own experience—and my experience of gastric ulcer is considerable—and which demand, I think, very serious consideration before they are accepted by the profession. The question is one of great practical importance, for if the mortality from hæmorrhage in gastric ulcer is as great as Mr. Mayo Robson supposes it to be, and if his deliberately expressed opinion that operative procedure should be adopted "after a second bleeding, even during the course of the hæmorrhage if the patient can stand it, or as soon after as his condition will permit the operation to be done," is accepted and acted upon, operations for the arrest of hæmorrhage in cases of gastric ulcer will become of everyday occurrence, with, I fear, unless the mortality from such operative procedure should in the future become very much less than it is at present, an increase rather than a decrease of the mortality. I express this opinion, however, with diffidence, for I fully recognise the fact that "gastric surgery is advancing in safety and efficiency with leaps and bounds," and I feel grave hesitation in expressing an opinion on a question which is to some extent a surgical one in opposition to Mr. Mayo Robson who is justly regarded as one of the greatest living authorities on surgical questions of this kind.

Mr. Mayo Robson's conclusions as to the frequency of gastric ulcer, the fatality of gastric ulcer, and the frequency and fatality of hæmorrhage in cases of gastric ulcer are based on a series of statistics which have from time to time been published by leading authorities on the diseases of the stomach. The figures (percentage mortalities) given by these authorities vary very greatly. In arriving at his results Mr. Mayo Robson has taken the mean of the figures—in my opinion an unreliable method of calculation, or rather he seems to have taken the mean of the extremes, which in this case is a most unreliable method, for some of the figures (the maximum figures) which he quotes were published more than 40 years ago and certainly do not correctly represent the mortality of the disease or the frequency with which death from hæmorrhage in gastric ulcer occurs either in hospital or in private practice at the present time. No one, for example, who has an extensive clinical experience of gastric ulcer will, I fancy, agree with the following conclusions of Brinton—viz.: that the liability to ulcer of the stomach increases with the age of the patient and reaches its maximum at the extreme age of 90 years; that gastric ulcer only undergoes a spontaneous cure in 50 per cent. of the cases; and that the mortality (direct and indirect) in all cases of gastric ulcer from all causes is consequently 50 per cent.[2]; or with Müller's statistics, published in the year 1860, which show that 11 per cent. of all cases of ulcer of the stomach die from hæmorrhage.[3]

It is unnecessary to tell you, gentlemen, that statistics, unless the data on which they are compiled are absolutely reliable, are apt to lead to very erroneous conclusions; and I venture to think that there is perhaps no subject in the whole range of medicine on which the statistics are more uncertain than the subject of gastric ulcer. This is due to the circumstance that the data on which many of the statistics relating to gastric ulcer are largely based are not facts but merely deductions and conclusions from facts, and that the facts themselves on which these deductions and conclusions are founded are in some cases matters of inference rather than of certainty. Further, some of the mortality percentages were published many years ago. The statistics of gastric ulcer require, I think, careful re-investigation and re-consideration.[4] In this lecture I propose to direct your attention to some of the fallacies connected with these statistics and to try to show that Mr. Mayo Robson has considerably over-estimated the total mortality from gastric ulcer and the mortality from hæmorrhage in gastric ulcer. And here I would ask you to note that I limit my remarks to simple (round or perforating) ulcer of the stomach. I do not refer to simple (round or perforating) ulcer of the duodenum; for although the differential diagnosis is sometimes, I believe, impossible and in many cases attended with difficulty, the two conditions seem to me to present certain differences from a clinical point of view, which, when one is considering the total fatality, the risk of fatal hæmorrhage, and the advisability or non-advisability of operative interference, make their separate consideration, probably, advisable; but I reserve my final opinion on this point.

THE FREQUENCY OF GASTRIC ULCER IN THE GENERAL POPULATION.

We have no certain knowledge as to the frequency with which gastric ulcer occurs in the general population. The usual estimate which is accepted by all authorities is that 5 per cent. of the whole population suffer at some period of their lives from simple (round or perforating) ulcer of the stomach. Consequently, on this estimate, in a city of the size of Leeds, with, say, 500 000 inhabitants, 25,000 persons may be supposed to have, or to have had, gastric ulcer. This estimate of 5 per cent. for the whole population may be

[1] Some figures and calculations have been added by Dr. Bramwell.

[2] So far as I know, Brinton does not anywhere state that the direct mortality from gastric ulcer is 50 per cent. What he does state in different parts of his treatises on Ulcer of the Stomach and Diseases of the Stomach is that "in 50 per cent. of the cases the ulcer undergoes a spontaneous cure" (p. 140), that "in 13 per cent. of the cases of gastric ulcer death is due to perforation" (p. 144), that "in 3–5 per cent. of the cases of gastric ulcer death is due to hæmorrhage" (p. 153), that "in 3, 4, or 5 per cent., even in middle-aged persons, exhaustion is evidently the chief (if not the sole) cause of death" (p. 154), and that "in about 30 per cent. of all cases of gastric ulcer it is probable the lesion gives rise to a process of marasmus or partial exhaustion which anticipates, hastens, or increases that failure of the nutritive functions which is one of the most essential elements of death in old age" (p. 155).

[3] Das Corrosive Geschwür im Magen und Darmkanal, 1860, p. 91.

[4] I propose to invite the registrars and pathologists of the large hospitals throughout the country to join me in a collective investgtiation of the whole subject.

correct; I neither affirm nor deny its correctness, although I am disposed to think, for reasons which I will presently give you, that it is probably an exaggerated estimate; but what I do say is that the statistics and deductions on which it is based are open to so many uncertainties and sources of fallacy that it can only be accepted as a rough estimate, about which there must necessarily be considerable difference of opinion and uncertainty.

The frequency of gastric ulcer in the population generally has been (approximately) arrived at in two ways—viz.: 1. By observing the frequency with which open gastric ulcers and the cicatrices of former gastric ulcers are met with in the bodies of persons examined post mortem—if, for example, in 10,000 bodies examined post mortem open ulcers are found in 150 cases and cicatrices in 350 other cases, it is concluded that 500 of the 10,000 persons examined post mortem, or 5 per cent., have at some period or other of their lives suffered from gastric ulcer. 2. The frequency with which gastric ulcers are diagnosed in a given number of patients suffering from various diseases examined during life.

A. *The post-mortem method.*—The post-mortem method is the more reliable of the two and it is the one on which the usually accepted estimate of 5 per cent. for the whole population is based. In 32,052 necropsies made in Prague, Berlin, Dresden, Erlangen, and Kiel (collated and analysed by H. W. Welch[5]), there were found 1522 cases of open ulcer or of cicatrix (presumably the result of former gastric ulcer) in the stomach. Therefore, ulcer of the stomach had occurred in 4·7 per cent. (say, roughly, 5 per cent.) of these 32,052 patients.

Objections to the post-mortem method.—In my opinion, the post-mortem method of calculation is open to the following fallacies and objections.

1. All open ulcers are not found. It is obvious that unless the stomach is carefully examined in all cases there is a serious source of error here—e.g., the number of ulcers will be under-estimated. I do not know whether in the cases analysed by Welch the stomach was systematically examined in all cases, but from the thorough way in which post-mortem examinations have for many years been conducted in Germany we may take it, I think, that this was so, at all events in the more recently examined cases.[6] Consequently this source of error may probably be disregarded, though it is certain, I think, even granting that the stomach was examined in all cases, that in the 32,052 cases collated and analysed by Welch the total number of open ulcers was under-estimated rather than over-estimated.

2. The cicatrices of former ulceration are often missed. This is probably a serious source of error, for unless the stomach is very carefully examined cicatrices, more especially the cicatrices of small and superficial ulcers, are very apt to escape observation. That this is so is clearly shown by the observations of Grünfeld.[7] He examined 1150 bodies of persons over 50 years of age in Copenhagen (where gastric ulcer appears to be unusually common). In these 1150 cases cicatrices of gastric ulcers were present in 124 cases, or 11 per cent. In 700 post-mortem examinations in which the cicatrices were not very particularly looked for they were found in 32 cases, or 4·8 per cent; while in 450 cases in which they were particularly looked for cicatrices were found in 92 cases, or 20 per cent. The relative proportion of cicatrices to open ulcers found by different observers varies very considerably.[8] In calculating the percentage with which gastric ulcer occurs in patients examined post mortem the usual estimate is to give the ratio of cicatrices to open ulcers as three to one; but because of the fact that small and superficial cicatrices are apt to be missed unless very carefully and specially looked for there is much uncertainty as to the correctness of this ratio.

3. It is, I think, open to doubt whether a superficial ulcer in the stomach, when it heals, necessarily leads to the production of a cicatrix, or at all events of a cicatrix which is easily detected after death. This is, I think, a practical point of great importance, for if it is allowed that ulcers of the stomach sometimes heal without leaving obvious or easily recognisable cicatrices it is clear that in this fact there may be a very serious source of error.

In Edinburgh ulcer of the stomach is a very common disease clinically; the majority of patients suffering from gastric ulcer admitted to the Royal Infirmary are anæmic young women; hæmatemesis occurs in a very large percentage of cases; but I think I am correct in saying that the cicatrices of ulcers are, relatively to the great clinical frequency of the disease, comparatively rarely found in the bodies of patients examined post mortem. (I have not yet had time to go over the post-mortem records and get the exact figures.) Even allowing for the fact that the attention of our pathologists may not have been particularly directed to the detection of cicatrices in the stomach, I am disposed to think, from my own observations, both clinical and pathological, that ulcer of the stomach (judging from the number of well-marked and undoubted cases which one sees in the wards of the hospital during life) is very much more frequent in the patients admitted to our infirmary than the records of our post-mortem examinations would seem to show. I doubt whether the difference can be altogether or satisfactorily explained by the fact that the scars are often missed on post-mortem examination. It seems to me extremely reasonable to suppose that a superficial ulceration of the stomach, attended with all the characteristic symptoms of gastric ulcer during life, may heal, if carefully treated for a sufficient length of time in its earlier stages, without leaving behind it any obvious or any easily recognised result in the form of a cicatrix. It is not improbable, I think, that ulceration of the stomach as we see it in young anæmic (chlorotic) women not infrequently pursues this course. This supposition seems to receive some confirmation from the following facts: (1) that a large majority of the patients who are admitted to hospital (I refer to hospitals generally and not merely to the Edinburgh Royal Infirmary) suffering from gastric ulcer are women; and (2) that in the female patients admitted to hospitals suffering from gastric ulcer the percentage mortality is considerably less than in the male patients. In other words, in hospital in-patients gastric ulcer is a more fatal disease in the male than in the female.

I am disposed to think that gastric ulcer in the young (chlorotic) female is, on the whole, a less serious and fatal disease than in men—though I, of course, admit that in a considerable percentage of cases gastric ulcer in anæmic young women leads to the production of perforation and is the cause of very profuse hæmorrhage; in other words, that in many instances in anæmic young women the ulcers are deep and not superficial. I suggest that the explanation is probably afforded by the fact that in young chlorotic females the ulceration is not infrequently superficial. I am further disposed to think that, in some cases at all events, the anæmia plays a part in the production of the ulceration, that the persistence of the anæmia interferes with the healing of the ulcer, and that the disappearance (cure) of the anæmia tends materially to promote the healing of the ulcer.

4. Another objection which has been advanced against the post-mortem method by Welch[9] is "that it is not proven that all of the cicatrices found in the stomach are the scars of healed simple ulcers and that, in fact, it is probable that many are not." I do not myself attach any great importance to this objection; the scars in the stomach which result from other causes than simple (round or perforating) ulcer—such, for example, as syphilitic gummata, erosions and ulcerations the result of irritant poisoning, tuberculous ulceration—are probably not sufficiently numerous to be a practical source of error or seriously to invalidate the figures.

I am disposed to think, then, for the reasons advanced

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[5] Pepper's System of Medicine, vol. ii., p. 482.

[6] The Prague statistics, which include 11,888 of the 32,052 cases collated and analysed by Welch, are very old (1844, 1853, 1854); they are, however, the data on which most British authorities have based, or very largely based, their conclusions with regard to the frequency of stomach ulcer. The post-mortem statistics from hospitals in this country are, for the most part, useless for determining the frequency of gastric ulcer, for until comparatively recently, at all events, in many hospitals it was not the custom to make a careful examination of the stomach in all cases examined post mortem.

[7] Schmidt's Jahrbuch, 1883, Band 198, p. 141.

[8] Brinton (On Ulcer of the Stomach, p. 20) placed it at one to one. "In 11,888 cases (collated and analysed by Welch, see Pepper's System of Medicine, vol. ii., p. 482) examined in Prague by Jaksch, Dittrich, Willigk, and Eppinger, there were 164, or 1·4 per cent., open ulcers, and 373, or 3·1 per cent., cicatrices." In 1658 necropsies Greiss (quoted by Quincke, Deutsche Medicinische Wochenschrift, Feb. 4th, 1882, p. 80) found ulcers or scars in 138 cases, 31 open ulcers, and 103 cicatrices (? four cases both). In 3085 necropsies Steiner (Virchow and Hirsch's Jahresbericht, 1868, p. 125) found ulcers or scars in 110 cases, open ulcers in 56 cases, and cicatrices in 64 cases (and in 10 cases both open ulcers and scars). In 1230 necropsies Wollmann (Virchow and Hirsch's Jahresbericht, 1868, p. 126) found 48 ulcers or scars, 16 open ulcers, 18 scars, 12 both ulcers and scars (two cases not explained).

[9] Pepper's System of Medicine, vol. ii., p. 482.

above (more especially under headings 2 and 3), that in the 32,052 persons examined post mortem in Prague, Berlin, Dresden, Erlangen, and Kiel (collated and analysed by Welch) a larger number than 5 per cent. had in all probability suffered at some period or other of their lives from gastric ulcer. But it does not necessarily follow from this statement that in my opinion a larger number than 5 per cent. of hospital patients examined post mortem in this country at the present time suffered from ulcer of the stomach.

THE FREQUENCY OF GASTRIC ULCER IN THE GENERAL COMMUNITY.

So much, then, for the post-mortem method as applied to hospital patients. Let us now see how this method has been applied to the general population. All authorities, in this country at all events, have, so far as I know without exception, concluded that because a certain percentage of persons who were examined post mortem in hospitals (usually estimated at 5 per cent.) have, at some period or other of their lives, suffered from gastric ulcer, therefore, that the same percentage (5 per cent.) of the general population will, at some period or other of their lives, suffer from gastric ulcer.

It is important to remember that the patients who are examined post mortem in hospitals are for the most part adults (or at all events over five years of age), that the post-mortem examinations on which the statistics on which the 5 per cent. estimate is based were made in German hospitals, and that a considerable proportion of these post-mortem examinations were made more than 40 years ago. Consequently, the deduction which has been drawn by, so far as I know, all authorities in this country, at all events up to the present time, is—that because 5 per cent. of persons who were examined post mortem in German hospitals, the great majority of whom were (presumably) adults, and a considerable proportion of whom lived more than 40 years ago, suffered from ulcer of the stomach, therefore 5 per cent. of the whole population of this country at the present time are suffering from, have suffered from, or will suffer from, gastric ulcer.

Such a conclusion is, I venture to think, altogether unwarranted. In the first place, it is by no means certain that the prevalence of gastric ulcer in this country at the present time is the same as the prevalence of gastric ulcer was in Germany when a considerable part of the statistics collected by Welch were compiled, or even at the present day. It seems certain that gastric ulcer is more prevalent in some countries than in others, and in some parts of the same country than in other parts. Gastric ulcer seems, for example, to be (or was when Grünfeld's observations were made) extremely prevalent in Copenhagen. It seems to be less prevalent in America than in this country. It is said to be very rare in some parts of Russia. It is certainly very common in young chlorotic women in Edinburgh. The disease (and especially the gastric ulcer of chlorotic young women) is probably more common in urban than in rural districts. Further, it is not unnatural to suppose (although so far as I know there are no recorded observations or statistics to prove this) that, owing to differences in dietary, occupation, and mode of life generally, the frequency of gastric ulcer at the present time is different to what it was 40 or 50 years ago. But this objection to the application of the hospital results to the population generally is one to which I attach comparatively little importance. I pass to other objections which are, in my opinion, of much greater weight.

The second objection is that in the class of patients who are examined post mortem in hospitals gastric ulcer is very much more prevalent than in the middle and upper ranks of society, and probably more prevalent than in the same class of persons living in the rural districts (the hospital patients are, of course, for the most part drawn from the towns). Consequently, to conclude because 5 per cent. of the persons who are examined post mortem in hospitals have suffered from ulcer of the stomach that 5 per cent. of the whole population will suffer from ulcer of the stomach seems to me altogether unjustifiable.

The third objection is that (though I speak subject to correction on this point) the post-mortem statistics on which the usual estimate of 5 per cent. is based included very few children under five years of age. Now ulcer of the stomach (I refer to the round perforating ulcer) is, practically speaking, unknown in children under five years of age; but children under five years of age form a very considerable proportion (approximately 13 per cent.) of the whole population. Therefore, to conclude because 5 per cent. of the persons examined post mortem in hospital, the great majority of whom were (so far as I know) over five years of age, had suffered from gastric ulcer, that 5 per cent. of the whole population (a considerable proportion of whom—approximately 13 per cent.—are children under five years of age) suffer from gastric ulcer is certainly erroneous.

In the fourth place, it cannot, I think, be doubted that the percentage of patients who die from gastric ulcer is much larger in hospitals than outside hospitals. In Leeds, for example, last year 16 deaths were registered as due to gastric ulcer, one as the result of duodenal ulcer, and six from hæmatemesis, some of which (say four) were perhaps the result of gastric ulcer. Of these 20 deaths, presumably due to gastric ulcer, eight occurred in the General Hospital and one in the Fever Hospital. But of the eight patients who died in the General Hospital three came from districts outside Leeds. Now, even allowing for greater accuracy of certification in the hospital deaths, the proportion of deaths from gastric ulcer in hospital as compared with private practice is enormous if one considers the relative number of cases of gastric ulcer which were treated during the year in Leeds, in the hospitals and outside the hospitals respectively. Further, a large proportion of the patients who die from gastric ulcer in hospitals are examined post mortem. Consequently the percentage of hospital patients who are estimated to have suffered from gastric ulcer will (because of the manner in which this percentage is determined—viz., by multiplying the number of open ulcers which are found in the bodies of hospital patients examined post mortem by the number 3, which is supposed to represent the number of cicatrices which occur to every open ulcer) be unduly large, and will be very much larger than the percentage of the general public outside hospitals who are suffering from, have suffered from, or will suffer from, gastric ulcer.

I repeat that we have no certain means of saying what proportion of the *whole* population suffer from gastric ulcer. The 5 per cent. estimate, which is accepted by all authorities, may or may not be correct; but the data on which this estimate is based are very uncertain. Consequently the estimate of 5 per cent. for the whole population can only, at the best, be taken as approximately accurate and is, in my opinion, probably excessive.

B. *The clinical method.*—This method is even less satisfactory than the post-mortem method. The number of cases of gastric ulcer in a given number of clinical cases is subject to great variations in accordance with the facts—whether the patients are hospital or private patients; whether they are in-patients or out-patients; with the locality—whether gastric ulcer is common or rare in the district; with the nature of the hospital—whether the patients are chiefly medical or chiefly surgical; whether the hospital is large or small in proportion to the population from which it receives its patients; whether the patients are chiefly males or chiefly females; whether they are chiefly adults or children, &c. And in the practice of individual physicians the number of cases of gastric ulcer which are diagnosed in a given number of clinical cases will vary and depend on many of the same factors as in hospital practice (the age, sex, occupation, station in life of the patients, locality, &c.), and whether the physician who makes the observations is engaged in general or in consulting practice, whether he has a special reputation for the treatment of stomach diseases, &c. Further, the nature of the symptoms which are considered necessary to warrant a definite diagnosis of a gastric ulcer varies in the case of different observers. A physician who considers that it is, speaking generally, hazardous definitely to diagnose a gastric ulcer in the absence of hæmatemesis will meet with far fewer cases of gastric ulcer than another physician who is in the habit of frequently diagnosing gastric ulcer in the absence of hæmatemesis. Further, after a given number of cases of gastric ulcer have been diagnosed in a given number of patients, there are, so far as I know, no reliable figures for enabling us to determine the exact frequency with which gastric ulcer will occur in the population generally. As a matter of fact, different statistics regarding the frequency of gastric ulcer, in proportion to other diseases met with in clinical practice, present great variations even in the practice of the same physician—in other words, in cases in which the diagnostic difficulty (the question as to what symptoms justify a diagnosis of gastric ulcer) may be disregarded. Thus in my own case the proportion of gastric ulcers to other cases of disease differs

very materially amongst in-patients in Edinburgh and in Newcastle (this is chiefly due to the facts that in Edinburgh I had for several years no male beds and that in Newcastle the number of beds to the population which the hospital supplied was, at the time when I was associated with the Newcastle Infirmary, very much more limited than it is in Edinburgh; consequently in Newcastle we were rarely able to admit any but the most severe cases); between in-patients and out-patients in the Edinburgh Royal Infirmary; and between out-patients in the Edinburgh Royal Infirmary and patients seen in private (consultation) practice. The figures are as follows. In 17,226 cases of general medical diseases of which I have kept notes, seen either in hospital or in private practice, there were 202 cases of gastric ulcer = 1·1 per cent., or, if the Edinburgh in-patients are omitted, in 14,681 patients there were 108 cases of gastric ulcer = 0·73 per cent. Thus, in 2545 in-patients in the Edinburgh Royal Infirmary there were 94 cases, or 3·69 per cent. In 893 in-patients in the Newcastle-on-Tyne Infirmary there were five cases, or 0·55 per cent. In 7665 out-patients seen at the Edinburgh Royal Infirmary there were 76 cases, or 0·99 per cent. In 6123 cases seen in private (consulting) practice there were 27 cases, or 0·44 per cent.[10]

THE TOTAL FATALITY FROM GASTRIC ULCER.

It is extremely difficult to draw exact and reliable conclusions as to the total mortality which is directly due to gastric ulcer and its different complications and as to the frequency with which death from hæmorrhage occurs in cases of gastric ulcer. If hospital cases are taken as the basis of the calculation the objection at once occurs that many of the worst cases which occur in a community are sent into hospital, more especially when perforation has occurred or alarming hæmorrhage has developed. Consequently it is erroneous to estimate the mortality in all cases of gastric ulcer from the mortality which occurs amongst the in-patients of a hospital. On the other hand, it must be remembered that, provided that death does not occur within the first few days after admission, death very rarely occurs amongst medical in-patients. My experience in the Edinburgh Royal Infirmary shows that the worst cases of gastric ulcer, with very few exceptions, rapidly improve under appropriate treatment in hospital. Again, it must be remembered that one cannot take the exact percentage of cases which are discharged from hospital as cured as actually cured in all cases. Many of the cases which are discharged as cured are no doubt only greatly improved. Some of the cases discharged as cured relapse soon after their discharge; in these cases the ulcer was no doubt imperfectly cicatrised. Others relapse after a varying period of months or years. In those cases in which there were no gastric symptoms for a considerable period of time after the patient's discharge from hospital it is reasonable, I think, to conclude that the ulcer was cured at the time of the patient's discharge, and that after a time it broke out again or a new ulcer developed; and in estimating the total percentage mortality of gastric ulcer cases of this kind should probably, I think, be regarded as new cases—new ulcers.

The results obtained from the treatment of in-patients in hospital must in many cases be regarded as merely applicable to the treatment of cases of gastric ulcer during a certain, and it may be a very limited, period of their course. In those cases in which the patient is discharged before the ulcer is completely and firmly cicatrised death may, of course, occur during some subsequent period of their course. Hence to argue that because in 100 cases of gastric ulcer treated in hospital 90 were cured, seven were discharged *in statu quo*, and three died, the total mortality from gastric ulcer, in hospital in-patients, is only 3 per cent., is, of course, erroneous. But since the great majority of severe and aggravated cases of gastric ulcer which are admitted to the medical wards of a hospital (provided that the patients do not die within the first few days after their admission) rapidly improve and are in the course of a short time discharged as "cured," it is reasonable, I think, to conclude that, if the treatment had been carried out for a sufficient length of time, many of the cases which are imperfectly cured at the time of their discharge would also have been completely cured.

The mortality percentages for gastric ulcer given by different authorities are for the most part based on hospital statistics. The percentages of different authorities differ very materially. The older percentages, such, for example, as those of Brinton, based on results obtained more than 40 years ago, cannot, and should not, be taken as representative of the results of treatment and as indicating the mortality at the present time.[11] Mr. Mayo Robson, after stating that, "according to Brinton, Habershon, Müller, Dreschfeld, Lebert, and others, the mortality from all causes in all cases of ulcer is from 10 to 50 per cent.," takes the mean estimate of mortality as 25 per cent. (or, rather, he seems to have taken the mean of the extremes), though he states "that this is under the mean given by the authorities named," and concludes "that in a city of the size of Leeds, say, with a population of 500,000 inhabitants, 6250 persons may be expected to die from gastric ulcer or some of its complications." In other words, in the city of Leeds, with, say, a population of 500,000 persons, one in every 80 persons will die from ulcer of the stomach or some of its complications. But since children under five years of age very rarely, if ever, die from gastric ulcer, and since in a population of 500,000 children under five years of age form (approximately) 13 per cent. of the whole population, 6250 persons in 435,000 (which represents the population of Leeds, stating it at 500,000 *minus* the 65,000 children of Leeds under five years of age) will die from gastric ulcer; or one in every 69 persons over five years of age will, according to Mr. Mayo Robson, die from ulcer of the stomach.

Again, to put the matter in another way, the annual death-rate of persons (males and females) in Leeds was last year 20·05 per 1000. Consequently, the whole of the population of Leeds (estimated at 500,000) will be exhausted by death in 49·87 years. Therefore, the average annual mortality in Leeds from gastric ulcer will, according to Mr. Mayo Robson, be 6250 divided by 49·87 = 125 per annum. Or, again, the death-rate being 20·05 per 1000 per annum, it may be assumed that the same proportion holds as regards those who die from gastric ulcer, that is, 6250 multiplied by 0·02005 = 125 deaths per annum from gastric ulcer. But the death-rate in Leeds last year was in persons over five years of age 13 per 1000,[12] therefore (taking this death-rate as the usual standard) the annual average death-rate from gastric ulcer in persons over five years of age would be 0·013 × 6250 = 81·25. According to Mr. Mayo Robson, therefore, 81·25 persons above five years of age will on an average die from gastric ulcer in Leeds (estimating the population at 500,000) every year (granting, of course, that the total deaths (6250) are equally spread over 49·87 years).

Now what are the actual facts? My friend Dr. J. Spottiswoode Cameron, medical officer of health of Leeds, has kindly furnished me with the exact number of deaths which were registered as occurring in Leeds last year from gastric ulcer and duodenal ulcer. The number is 17. Of these 17 deaths eight occurred in the General Hospital and one in the Fever Hospital; three of the 17 deaths which occurred in the General Hospital were deaths of persons who came from outside of Leeds (from Ilkley, from Mosley, and from Gomersal respectively). So that as a matter of actual fact 14 deaths were registered as occurring in Leeds proper last year from gastric ulcer. In addition six deaths were registered from hæmatemesis (three between 25 and 30 years of age, two

[10] Lebert (Krankheiten des Magens, p. 196) found in 41,688 medical cases studied clinically 252 cases of gastric ulcer = 0·6 per cent. In 35,692 cases admitted to the medical wards of the Edinburgh Royal Infirmary (figures kindly furnished by the medical registrar, Dr. A. L. Gillespie) during eight years (from 1892 to 1899 inclusive) there were 803 cases of gastric ulcer = 2·2 per cent. In 42,219 patients admitted to the medical wards of the Charité Hospital, Berlin (Charité Annalen) during the 10 years 1888–89 to 1897–98, there were 555 cases of gastric ulcer = 1·07 per cent. In 116,323 medical and surgical cases admitted to the K. K. hospitals in Vienna and the hospitals of Lower Austria (Reports of these hospitals) during the years 1893 and 1894, there were 433 cases of gastric ulcer = 0·37 per cent. And in 455,842 medical and surgical cases admitted to the same hospitals during the years 1895, 1896, and 1897, there were 1117 cases of gastric ulcer, duodenal ulcer, and perforative peritonitis from round ulcer (the numbers for each are not specified) = 0·24 per cent.

[11] Brinton's statistics, too, are open to the serious objection that a considerable proportion of the cases on which they were based were individual cases ("many hundreds of scattered cases, but always verified by careful necropsy, by scarcely less numerous observers"), which he (Brinton) had collected from journals and reports (British and foreign), as well as hospital museums. Statistics as to the total mortality of cases of gastric ulcer, based on such data, do not represent the total mortality in all cases of the disease.

[12] The population of Leeds last year was 431,287, or, excluding children under five years of age, say, 375,000. The death-rate per 1000 was 20·05. The deaths in 52 weeks ending Saturday, Dec. 29th, were 8619; of these, 3746, or 43·4 per cent., occurred in children under five years of age, and 4873, or 56·6 per cent., occurred in persons over five years of age. Therefore the death-rate per 1000 in persons over five years of age was 13.

between 40 and 50 years of age, and one between 70 and 80 years of age). Some of these deaths, perhaps the three between 25 and 30, were from gastric ulcer. Supposing that four of the six deaths registered as hæmatemesis were due to gastric ulcer (round, perforating ulcer)—and this is making a very liberal allowance—the total deaths from gastric ulcer in Leeds proper last year would be 18. But the population of the Leeds district from which these 14 deaths from gastric ulcer and four from hæmatemesis (which were perhaps gastric ulcer) were derived was 431,287 instead of 500 000. Therefore, in Leeds, if the population had been 500,000, 20·8 deaths would have been registered as due to gastric ulcer last year.

I am, of course, aware that the number of deaths from gastric ulcer varies, in the same city or hospital, sometimes very materially, from year to year; that small numbers are apt to be fallacious, and that the cause of death as registered does not in many instances accurately represent the true cause of death—peritonitis, for example, is not infrequently returned as the cause of death in cases in which the death is really due to the perforation of a gastric ulcer; some of the deaths returned as due to anæmia and cancer are probably, as Dr. Cameron has pointed out to me, due to gastric ulcer; on the other hand, some of the deaths registered as gastric ulcer are, perhaps, due to cancer; some deaths due to gastric ulcer are no doubt, also, returned as due to exhaustion. But, making ample allowance for these sources of fallacy, the difference between 20·8 (the actual number of deaths registered as resulting from gastric ulcer *plus* four out of the six deaths registered as hæmatemesis and taking the population of Leeds at 500,000) and 81·25 (the number estimated by Mr. Mayo Robson), is, I think, sufficiently great to prove that Mr. Mayo Robson's conclusions regarding the total mortality in Leeds from gastric ulcer must be incorrect. Most modern authorities who have carefully investigated the total mortality from gastric ulcer place it at from 8 to 15 per cent.: Dreschfeld,[13] for example, who gives no estimate of his own, quotes Lebert's estimate, viz., 10 per cent.; Welch,[14] who thinks Lebert's 10 per cent. too low, says "perhaps 15 per cent. would be more correct;" and Riegel[15] places it from 8 to 10 per cent.

THE FATALITY OF HÆMORRHAGE IN CASES OF GASTRIC ULCER.

Mr. Mayo Robson's conclusions with regard to the frequency with which fatal hæmorrhage occurs in cases of gastric ulcer also, I think, require correction. He states: "Hæmorrhage, which according to different authorities occurs in greater or less degree in 50 to 80 per cent. of all cases of gastric ulcer, and is, according to various authorities, fatal when medically treated in from 11 to 3 per cent. (Müller, 11 per cent.; Welch, from 3 to 5 per cent.; Brinton, 5 per cent.; Debove, 5 per cent.; Steiner, 6·36 per cent.; Lebert, 3 per cent.; Dreschfeld, 3½ per cent.; and Rodman, 8 per cent.). If we take the average, 7 per cent. of deaths in cases of gastrorrhagia from gastric ulcer will not be far from the truth.[16] If this is worked out in the population of a city like Leeds it means that of the 25.000 persons who have or had ulcer 12,500 suffer from hæmatemesis, and of these 7 per cent., or 875, die." There is, it seems to me, a serious error here, for the percentages of death from hæmorrhage which Mr. Mayo Robson quotes from different authorities,[17] with, so far as I have been able to ascertain, the exception of Rodman,[18] refer not to the percentage of deaths in those cases of gastric ulcer in which hæmorrhage occurs (which Mr. Mayo Robson estimates at 50 per cent. of the whole), but in the total number of cases of gastric ulcer. If, therefore, 7 per cent. of all cases of gastric ulcer die from hæmorrhage Mr. Mayo Robson's figures will have to be doubled; in other words, in a population like Leeds, say, of 500,000, 1750 will die from hæmorrhage. And if this number is spread over 49·87 years (in accordance with the estimate that 20·05 per 1000 of the population die in Leeds every year), and if children under five years of age are deducted, the deaths per annum in Leeds from hæmorrhage in gastric ulcer will, according to Mr. Mayo Robson, be on the average 1750 multiplied by 0·013 = 22·75. As a matter of fact, three deaths were registered as occurring last year in Leeds from hæmorrhage in gastric ulcer. If we add to these four of the six deaths which were returned as hæmatemesis and which were perhaps gastric ulcer we have a total of seven deaths from hæmorrhage in gastric ulcer. Consequently, after correcting the figures (since the population of Leeds last year was not 500.000 but 413,287), the number of deaths from hæmorrhage in gastric ulcer in Leeds, if the population had been 500.000, would (including the hæmatemesis cases which were perhaps gastric ulcer) have been 8·1.

Errors of registration are perhaps less likely to occur in the case of hæmorrhage than in the case of perforation. It is true that in cases of gastric ulcer death occasionally results from internal hæmorrhage without any external discharge of blood in the form of hæmatemesis or melæna, but these cases are so exceptional that for practical purposes they may be disregarded. Some deaths due to hæmorrhage in gastric ulcer are returned as hæmatemesis (I have amply allowed for these), and others perhaps as exhaustion, anæmia, &c. The disproportion between the 8·1 deaths, the actual number which were returned as due to hæmorrhage in gastric ulcer, last year in Leeds (calculating the population at 500,000), and the 22·75 deaths which, according to Mr. Mayo Robson (if I am right in thinking the percentages which he quotes, with the exception of Rodman's, refer to all cases of gastric ulcer), ought to have occurred from this cause is very considerable. Physicians who have had large experience in gastric ulcer will, I fancy, agree with me in thinking that, although the condition of the patient is often most alarming, death from hæmorrhage in cases of gastric ulcer very rarely occurs, and that even in those cases in which repeated hæmorrhages occur it is only in comparatively few cases that the patient dies from bleeding. At the meeting of the Medico-Chirurgical Society I stated that, so far as I remembered, I had never seen a case of fatal hæmorrhage in an uncomplicated case of gastric ulcer. I find that I was mistaken. One fatal case of hæmorrhage due to gastric ulcer has occurred in my hospital practice. In another case which I saw in consultation in Edinburgh the patient I now find died four days after I saw him from exhaustion following hæmorrhage. That case I regarded at the time as a case of duodenal ulcer. In going over my notes of the case I do not feel satisfied that the diagnosis of duodenal ulcer was correct; it may have been a case of gastric and not of duodenal ulcer. Consequently, in 127 cases of gastric ulcer (including the case diagnosed at the time as duodenal ulcer) which I have seen either in consultation practice or treated as in-patients in hospital, there were (so far as my present information enables me to judge) two deaths = 1·57 per cent., or if the doubtful case (of duodenal ulcer) is excluded, one death from hæmorrhage in 126 cases of gastric ulcer = 0·77 per cent. I include the 27 cases of gastric ulcer and the one doubtful case of duodenal ulcer seen in consultation practice, for in several of these the hæmorrhage was alarming; and I exclude the 76 cases seen in out-patient practice, for in very few of them was the bleeding severe, and because many of them were only seen once and I have no records of their after-history.

[13] Clifford Allbutt's System of Medicine, vol. iii., p. 541.
[14] Pepper's System of Medicine, vol. ii., p. 502.
[15] Nothnagel's Specielle Pathologie, vol. xvi., p. 697.
[16] 7 per cent. does not represent the mean of the percentages quoted but the mean of the extremes.
[17] As regards Lebert and Steiner I speak subject to correction, but I have little doubt that the same statement applies also to their percentages.
[18] Rodman's statement is: "Hæmatemesis occurs in at least 50 per cent. of all cases of gastric ulcer, and many authorities estimate it as present in 80 per cent. It is, too, fatal in 8 per cent. of the cases in which it occurs, according to the conservative estimate of Leube, and we cannot question that it is indirectly fatal in a much greater number of cases by anæmia and its remote consequences."—The Journal of the American Association, June 16th, 1900, p. 1509.

INFECTIOUS DISEASE IN EXETER.—During 1900 there were 176 cases of infectious disease treated at the Exeter Sanatorium, being 58 less than in 1899. The cases comprised 86 of typhoid fever, 79 of scarlet fever, nine of diphtheria, and two of measles. Of the 176 cases, 66 came from the county, reducing the number from the city to 110.

DEATHS FROM SNAKE-BITE.—Sir Joseph Fayrer, gave an interesting lecture on "Venomous Snakes" at the Falmouth High School on March 1st. He mentioned that the last annual report from the Indian Government showed that 2966 persons died in the preceding year from the attacks of wild beasts and 24,621 from snake-bites. The great mortality from snake-bites did not seem to diminish, in spite of all the efforts of the Government.

The Lettsomian Lectures

ON

DISEASES AND DISORDERS OF THE HEART AND ARTERIES IN MIDDLE AND ADVANCED LIFE.

Delivered before the Medical Society of London

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LECTURE I.[1]

Delivered on March 4th.

MR. PRESIDENT AND GENTLEMEN,—My first duty this evening is to thank you for the honour you have done me by selecting me to deliver the Lettsomian Lectures for the present year. My second duty is to spend as little time as possible on preliminary remarks, for three hours are all too brief for the useful presentation of material collected for a purpose like the present. In selecting the subject of my lectures I was mindful of the character and objects of this society. In the Medical Society of London there is a fuller blending of men engaged in family practice with men holding hospital appointments than is the case at most of the other learned societies connected with our profession in London, and there is here an opportunity for free communication of experience and interchange of opinion between these two classes of our Fellows which cannot fail to be profitable to both. Therefore I have taken up a subject of thoroughly practical interest and I will attempt to present it to you from the point of view of the practitioner. The problem of the diseases and disorders of the heart and arteries in middle and advanced life may be said to come before the family practitioner every hour of his work and to present difficulties and create a sense of responsibility or even anxiety which are not sufficiently appreciated by the hospital physician. There comes before him the case of one of his patients, an active business man, 45 years of age, who has been seized with angina pectoris when hurrying to the station after breakfast, or that of an old friend whose proposal for an increase of his insurance at 50 years of age has been declined because of arterial degeneration and polyuria; or he is asked to say whether a man, aged 60 years, occupying an important and possibly distinguished position in the community, ought to retire from public life because he has occasional attacks of præcordial oppression and a systolic murmur at the base of his heart. What, again, is he to do for the stout free-living man, just passing the meridian of life, who consults him for weakness and depression, whose heart is large and weak, and the urine saccharine and slightly albuminous? There is not one of my audience who has not met with such cases as these many times in his practice, and a variety of other cases of cardiac disorder and disease after the age of 40 years where the importance of the individuals, the value of their lives, and the gravity of their complaints and their prospects have exercised him very anxiously. What is the prognosis in cases of this order? What can be done for them in the way of treatment? These are the questions which we would desire to answer usefully. The answer, it seems to me, can be given only after an analysis and study of a considerable number of instances of the kind, in respect of their origin, their clinical characters and course, and the result. This is the method of inquiry which I propose to follow. It will be a study of cardio-vascular disease in older subjects from the clinical point of view, but it will be approached not only from the ordinary clinical side as it is approached in hospitals—that is, by an investigation of symptoms and signs—but also, and especially in the light of that particular order of knowledge which the family practitioner has learned to appreciate and has so intimate and correct an opportunity to acquire, a knowledge of the origin or causes of the different affections which it is always difficult and often impossible for the hospital physician to ascertain and which he is perhaps apt to ignore. For the same reason—although to be complete a study of the diseases of the circulation at and after middle life should include an account of the post-mortem characters found in fatal cases—I shall not attempt to describe the pathological anatomy and histology of senile and other lesions of the heart and arteries.

Before, however, examining the influences and circumstances which disorder and damage the circulation in middle and advanced life, let us see what the normal or natural state of the heart and arteries is after the fortieth year of age. It has been ascertained that the different parts of the circulatory apparatus pass through certain definite phases of change in the different stages of that decline of existence and energy which leads to senility and ends in death. We have to thank Professor F. W. Beneke of Marburg for the results of a laborious investigation of this subject[2] which are generally accepted and which I will attempt to summarise.

We should all expect the cardio-vascular system to undergo important changes with increasing age, but few of us would be prepared to find that these changes are neither uniformly progressive nor progressive in the same direction. To make more easily intelligible the nature and, as far as possible, the origin of these anatomical alterations in the heart and arteries during the second half of life I will first refer for a moment to the condition of the circulation in persons from 20 to 45 years of age. During this period of life the blood-pressure is relatively high (reaching its maximum about the age of 36 years), the aorta and other large arteries increase in diameter from the stress of the blood-pressure on their elastic walls, particularly between the ages of 35 and 45 years, and the heart increases in size year after year at a nearly uniform rate. We have in these facts anatomical evidence of the great functional vigour and activity of the circulation in manhood. At the age of 45 years, which is practically the commencement of the period with which we are concerned, remarkable changes occur. Whilst the arteries continue to increase in circumference (somewhat more slowly than before), the blood-pressure falls and the heart begins, almost suddenly, to diminish in size, and these three features characterise the circulation for the next 20 years—that is, until the age of 65 years. How is this fall in the size of the heart to be accounted for? Partly by the widening of the arterial trunks and the consequent fall of pressure. But not by these only, for although the arteries had been widening even more rapidly between the ages of 20 and 45 years, the pressure was actually at its maximum then and the heart large; and we shall presently find other facts opposed to this view. The peripheral resistance in the systemic arteries must fall from some other cause or causes in middle age than the loss of elasticity of the arterial walls—and these causes are probably reduction of mechanical stress, due to comparative bodily relaxation, loss of vaso-motor tone in the splanchnic area, and the chronic diseases of which the subjects have died whose hearts and vessels are measured post mortem. During this phase of life, also, the blood becomes more venous in quality and its hæmoglobin value is lowered.

At the age of 65 years other changes which occur in the heart and arteries are not less striking than those which I have just described. The decline of circulatory energy and the effects of time itself on the protoplasm of the cells of the body have so lowered the metabolic and functional energy of the tissues and organs and the activity of the blood-supply that a considerable proportion of the capillary network becomes obsolete. The peripheral resistance is thus increased; the blood-pressure rises; therefore the heart once more increases so much in size that at the end of 10 years (i.e., at 75 years of age) it is found as large as it was at the forty-fifth year, and at the same time the hæmoglobin value of the blood again proves to be higher. During this period also the arteries continue to grow wider and thicker and longer—another proof that the size of the heart is not determined solely by their calibre. Regarded as a whole, the process of senescence of the cardio-vascular system presents to us a beautiful instance of anatomical readjustment and compensation, the counterpart in a way of the growth of the circulation in energy and activity during the period of full manhood. The arterial walls which have been stretched in their diameter and in their length by exhaustion of their elasticity under the stress of cardiac systole are strengthened afresh

[1] Lectures II. and III. will be delivered on March 18th and April 1st, 1901, respectively.

[2] Die Altersdisposition.

by the development of stays formed of fibroid tissue in the intima and media; and the heart responds to the altered mechanical condition ahead of it in the arteries, and to the increased peripheral resistance caused by the obsolescence of many capillaries, by growing afresh. This account relates to the size of the arteries after the age of 40 years. Now let us inquire what is the condition of their structural elements. The changes described do not necessarily involve disease of their tissue-elements—unless we are to call every senile change morbid.

My friends, Dr. Bosanquet and Dr. Mullings, have given me an account of the state of the heart and aorta in the bodies of 25 men, aged 40 years and upwards, who died from accident or suicide. The average age was 53½ years; and the aorta presented some degree of atheroma in half of the cases. When we consider how very slight a change in the arch of the aorta is habitually described as "atheroma" and that in a few of the cases the valves were diseased, and the heart enlarged, we are justified in concluding that in the majority of persons of 53 years of age the arteries are still sound. This result is in accord with that obtained by the late Professor Humphry who devoted his attention so long and so successfully to the investigation of old age. He states that in the great majority of cases the arterial system appears to present a healthy condition in those who attain to great age.[3] Even among the majority of centenarians the evidences of arterial degeneration were not manifest.[4] And we know that persons of 80 years of age and upwards are occasionally met with whose pulses are unexceptionable beyond presenting a trace of thickening and enlargement. For my present purpose it may, therefore, be concluded that as age advances the arteries naturally become wider, longer, and thicker, and altogether larger than in early life, and that we must not speak of "vascular degeneration" in an evil sense as often as we find these conditions present. As for the heart we know that it may remain structurally sound, and is more often regular than irregular, to the most advanced years of life.

After the age of 40 years many of the influences that threaten the heart and arteries with disorder and disease are peculiar to this period of life—that is, different and distinct from the causes of cardiac and vascular affections in childhood, adolescence, and manhood. I will now examine them in detail and at the same time refer to certain provisions with which the heart and arteries are endowed for resisting them and recovering naturally from their effects.

PHYSICAL STRESS.

This is still a definite cause of cardiac and vascular damage in the second half of life, in the forms both of sudden violent exertion and of ordinary laborious occupations. I have met with instances of acute and serious strain at all ages over 40 years, up to and even after 70 years. In some of my cases there was no reason to believe that the heart was other than sound before the strain; but in a majority of them (and I have analysed 40 of which I have more or less full notes) one or more of the safeguards of the circulation against strain were already defective or wanting. What are these? In the heart, chiefly a high degree of extensibility or elasticity of its tissues, permitting overdistension of the chambers with safety-valve action of the tricuspid in extreme cases, and a sound and vigorous musculature to effect the increased action and if necessary the hypertrophy which mechanical stress demands; in a word, well-nourished healthy cardiac walls. It is an interesting fact that two thirds of my cases of cardiac strain in the second half of life presented also a history of gout, fully-developed or irregular—in other words, a history of perverted metabolism.

The principal safeguard which the arteries possess against strain is of course the extensibility and elasticity of their tissues. Unfortunately, the metabolic disorders, including gout, which we have just found weakening the cardiac walls, are amongst the commonest causes of arterial degeneration also, and the two influences acting together no doubt are accountable for a considerable number of cases of atheroma and chronic arteritis. It is unwise, ill-timed, ill-planned muscular exercise that injures the circulation, most often on the part of the middle-aged man who, awaking to the consciousness of growing fat and gouty, rushes inconsiderately to violent exercise for relief.

[3] Humphry: Old Age, 1889, p. 23.
[4] Op. cit., p. 48.

NERVOUS INFLUENCES.

It is generally recognised that nervous excitement taxes the circulation, and quite recently Dr. Leonard Hill and Dr. George Oliver have demonstrated instrumentally the rise of blood-pressure that accompanies cerebral activity. No doubt many cases of disorder and disease of the walls of the heart and arteries originate in distress, worry, anxiety, and protracted suspense; and the connexion is most often seen in middle and advanced life because these depressing emotions fall most heavily upon mankind at this period. Nevertheless, however clear the direct connexion between nervous strain and cardio-vascular disease may be in many instances, it is in other instances normal, or, more correctly, indirect only. This is a matter of great practical importance. First, the nervous temperament often drives the subjects of it to physical overwork in the form of incessant and prolonged devotion to work with insufficient hours of rest and sleep. In the second place, alcohol undoubtedly plays an important part in many instances regarded as overwork and worry and nervous exhaustion. And thirdly, many of the complaints of nervous depression, lowness, and worry are really due to gout, to influenza, and the like, which are at the same time the true causes of the cardiac symptoms.

EXTRINSIC POISONS.

What I have just said in connexion with nervous causes of cardio-vascular affections brings us naturally to that important group of agents which may be summarily called "extrinsic cardiac poisons"—alcohol, tobacco, tea, coffee, and lead—and I shall have occasion to refer to some of these poisons at greater length under the head of diagnosis.

Alcoholic heart occurs both in men and women; tobacco heart is extraordinarily common in our own profession and common in clergymen and in retired members of the public services; tea, coffee, and cocoa heart I have met with principally in students.

DISTURBANCES OF METABOLISM, INCLUDING GOUT.

There can be no question but that these are by far the most prolific cause of cardio-vascular disorder and disease after 40 years of age—at any rate, amongst the middle and higher classes in this country. This period of life brings with it in many instances comparative relaxation from work and a disposition to substitute quiet, or even passive, for active exercise; and whilst the demands of growth and development on the alimentary system have greatly declined the pleasures of the table and ease generally are too often indulged in as a privilege of advancing years and the legitimate reward of previous years of work. The results are functional disorders of the liver, gout in regular and irregular forms, gravel, and the many associated disorders of the muscular, nervous, and other systems. The heart, blood-vessels, and kidneys are kept under incessant strain; and chronic Bright's disease and cardio-vascular degeneration are not uncommonly the result.

SYPHILIS.

This fruitful cause of vascular disease, and both directly and indirectly of cardiac disease, has by no means ceased to attack the organs of circulation after the fortieth year. Whatever the date of the primary infection syphilis is a standing danger to the heart and arteries in the middle-aged man, and even in declining years.

ACUTE DISEASES.

For the man and woman of 40 years of age and upwards most of the acute specific fevers are affairs of the past. But the liability to several of them remains and very unfortunately the liability to those acute specific processes which may attack the cardio-vascular system—influenza in particular, and less often typhoid fever, rheumatism, diphtheria, and pneumonia, as well as septicæmia of different forms or kinds which work havoc throughout the entire circulation. I should have had more to say under this head but for the fact that our distinguished Fellow and former President, Dr. A. E. Sansom, has thoroughly investigated it and on more than one occasion laid the results before you.

CHRONIC DISEASES.

I will not occupy your time in tracing the origin of certain cases of cardio-vascular disease in middle and advanced life to chronic affections of different kinds. Besides the obvious effects upon the heart, blood, and blood-vessels of anæmia, exhaustion, &c., we meet with such grave lesions as fatty

degeneration from pernicious anæmia and other blood disorders, profound circulatory derangements, and occasionally disease in Graves's disease, and others.

COMPLEX CAUSES.

In addition to the definite and distinct influences which I have mentioned as threatening the heart in this stage of life there are two which, although intimately associated with other causes of cardio-vascular disease, deserve to stand out independently. The first of these is emphysema, and along with it other chronic diseases of the lungs and pleura which strain the right ventricle; the second is chronic Bright's disease which similarly strains the left ventricle.

[Dr. Mitchell Bruce here referred to cardio-vascular disease as affecting certain classes of society, "soldier's heart" being taken as the type. He continued:]

I have now arrived at the last, and certainly one of the most interesting, of the causes of disease of the heart and arteries in middle and advanced life. There are some persons whose hearts and arteries cannot carry them through the wear and tear of what may be called ordinary everyday life for more than 40 or 50 years. The vital energy of their tissues is exhausted prematurely; they are already old at 45 years of age; degeneration of their muscular and other cells sets in early, reminding us of the essential myopathic paralysis of children. This type of case is described as "family heart," for it also runs in families, three, four, five, or more members of which, as in instances which I have myself observed, may have all died suddenly from cardiac disease, some of them at an early age. Similarly, it is not by any means unusual to find quite young subjects—say, of 30 years of age—with vessels already much enlarged, and, I may add, equally young subjects with their lungs already emphysematous, although there is no history of respiratory strain, reminding us of the very common association of emphysema with arterial sclerosis in old age. These cases of family heart and premature arterial sclerosis are the links that connect disease of the heart and arteries in middle and advanced life of definitely pathological origin with the genuinely senile changes in the tissue-elements which render existence untenable at last, and which may be said to be the result of the exhaustion of their nutritional activity by the thousand natural shocks that flesh is heir to.

PURE UREA IN THE TREATMENT OF TUBERCULOSIS.

BY HENRY HARPER, M.D. R.U.I.

DURING the last 19 months I have used pure urea in a large number of cases of different forms of tuberculosis, and I believe it to be a remedy of superior value to any that is used for this disease at the present time. I have administered it both internally and hypodermically with satisfactory results.

The first thing that attracted my attention to tuberculosis was Dr. (now Sir) Hermann Weber's lectures on Tubercle in the *British Medical Journal* of 1884. Since then I have given much attention to this disease, about 200 cases coming under my care every year. It was in those lectures I first saw any clear statement of the curability of phthisis. A few years previously to this, on my rounds attending hospital, I felt pity for every case of phthisis in the ward. The visiting physician would pass it over with a nod of his head: "Gentlemen, this is a case of phthisis; nothing can be done for it." Since then the accumulating proof of the inherent power of the body to resist the ravages of the tubercle bacillus has become more convincing each year. Fowler's grand little work on "Arrested Pulmonary Tuberculosis" emphasises what every physician had noticed clinically—namely, the curative powers of the body in certain cases of this disease. And although the practitioner who sees much tuberculosis has continually to witness failure on the top of failure to effect a cure, I always hoped from the number of successes which I had seen that a time would come when general success would be more complete. We may trust that that era is now arriving, and that with our increased knowledge of the bacteriology and clinical history of tuberculosis, coupled with the open-air treatment and the efforts made by the National Association for the Prevention of Consumption and Other Forms of Tuberculosis, good should result. I hailed with delight the inception of that association, considering it a noble movement, and I became a member; but my experience of tuberculosis leads me to believe that more radical remedies will be needed than fresh air and the ordinary sanatorium, and that the key-note to this will be in a careful revision of our diet list.

I may state in passing that quite half of my cases of tuberculosis come from the country, and this is hard to reconcile with the view that country air is a remedy for tuberculosis. Indeed, the most destructive cases of this disease which I have seen have been in the open country in the north of Ireland and in the lake district of England. In Ireland a farmer whom I knew had his residence on the top of a very high hill, a long distance removed from another dwelling—an ideal spot for health; yet the father and all the children were carried off by tuberculosis.

"Some individuals are preserved although living in the same air and hygienic conditions as those who succumb; they have only differences in their food. Phthisis and scrofula are to be seen in the most diverse climates under the most diverse hygienic conditions in towns and countries where the diet is the one thing arbitrary and variable. Is it one of the causes of tuberculosis?"[1] The writer of the foregoing sentences, in his "Bacillary Tuberculosis," lays much stress on the power of the bacillus to grow in vegetable substances such as potato. He also points out that potash salts favour the growth of the bacilli. He says: "The food of adult animals contains soda and chlorine in the same proportion for the herbivora as for the carnivora, whilst the quantity of potash in the food of the herbivora is from two to four times more considerable. To obtain the necessary supplies of albuminate for daily use they are obliged to consume enormous masses of vegetable matter containing much potash. That is, perhaps, why they are especially subject to tuberculosis. ..... The horse and pig are preserved up to a certain point by food containing much soda, as oats. The carnivora, dogs especially, rarely become tuberculous. ..... [Oats being rich in albumin increase the urea.] All vegetables are rich in potash and poor in soda. It is the same with the milk of the herbivora. In meat, the food of carnivora, potash and soda are in equilibrium, and they are found in the proportions required by the bodily expenditure of these animals." Is it possible that this excess of potash salts in the food of the cow accounts for the frequency of tuberculosis in children who are hand-fed on cow's milk? It was in the work which I have quoted that I first saw it pointed out that carnivorous animals show great immunity to the tubercle bacillus. Whence this immunity? On the other hand, some herbivora show a marked natural selection to provide a favourable soil for the bacilli to thrive in. For years an answer to these questions has often come up in my mind. On looking over my notes of cases of the family history of patients I find that families showing a marked tendency to gout, gravel, and calculus rarely suffer from tuberculous disease. Harris and Beale in their work on "Pulmonary Consumption" say: "We have ourselves seen an apparently complete arrest or cure of pulmonary tuberculosis considerably advanced in the case of a patient who suffered severely from an intercurrent attack of gout." On the other hand, in families where as many as eight children have been carried away there seems to be a puny, sickly state of body, patients choosing to live on farinaceous food—vegetables, fruit, &c.—in short, bad meat-eaters. With this idea I have urged on tuberculous patients the importance of consuming as much animal food as possible. At the Manchester meeting of the British Medical Association the value of a superabundance of meats in the diet for tuberculous disease was discussed, and I think that the profession was nearer grasping a remedy than at any time since.

Again, why do glycosuria and tuberculosis appear so frequently in the same patient? Surely this is not a coincidence. Does it not look as if the saccharine fluids were a suitable pabulum for the bacilli to grow in? Further, why are the goat and the horse immune, and sheep rarely tuberculous, while the milch cow is notoriously susceptible to the bacillus and the rabbit and guinea-pig highly so? We have yet to discover the cause of this immunity. One may speak vaguely of the susceptibility of certain animals to the growth of tubercle; but my opinion is that it will be

[1] Germain Sée.

found in the chemical composition of the urine, and that urea and uric acid play an important part in rendering an animal immune or the reverse.

I take the case of a particular family. I cannot find any trace of tubercle on either the father's side or on that of the mother. The diseases which I find frequent in this family are gout, gravel, calculus, rheumatic arthritis, bronchitis, and the different forms of Bright's disease. I take a member of that family whose occupation has exposed him for the last 15 years daily to the inhalation of bacilli in large quantities, except for three weeks annually during a holiday. I find him as free from tubercle to-day as he was 15 years ago. Why this immunity? I believe it to be dependent on the above-given family history—that is, that his tissues are charged with urea and uric acid, &c., to such an extent that he is immune to tuberculosis, the bacilli not finding a suitable soil to grow in. My impression is, that if we saturate a patient with urea or uric acid, this, in combination with the fluids of the body, would act as an antitoxin to the bacilli. This seems to be the most likely explanation which we can offer for a case like the following. In one family which I attend seven children have died from tuberculosis between the ages of three and 26 years. The parents, who are fairly strong, were reared in the country. The mother's family was tuberculous, while the father's was free from that disease. A few years after marriage they came to Nottingham. Their eldest child, 12 years old, was taken suddenly ill with acute tuberculosis and died within six weeks. One year after this death the third in age was taken ill with the same disease and died after 10 weeks' illness. The father changed his house to avoid the possibility of infection. The same year two more children, aged 11 and 15 years, were taken ill; one died within nine weeks and the other lingered for 11 months. Most careful hygienic measures had been taken to promote health. The children were kept from school, given careful daily exercise in the fresh air, and were educated at home. Again the father changed his residence, moving three miles into the open country in the hope of saving the remaining children. Two years later another child was taken ill with the same symptoms and died from acute tuberculosis. Again they changed house in the country, and still most careful sanitary precautions were taken to avoid any possibility of infection. Three years passed without any illness in the house. Two more were taken ill simultaneously and the disease in each case ran a rapid course. Only one little girl has been left, but though both she and the parents are alive the daughter is tuberculous.

Why is the negro so liable to tuberculosis? He lives out of doors enough; the question of fresh air treatment cannot apply here. I think the explanation will be found in the food he lives on, this consisting largely of starchy substances, such as rice, vegetables, and fruit. He is a small and irregular meat-eater. Again, the monkey, whose food closely resembles that of the negro, is very prone to tuberculosis. By the way, it has long been recognised that the teeth of the highly tuberculous are ivory white, resembling the clean white teeth of the herbivora. On the other hand, the teeth of the gouty are crusted with concretions consisting largely of lime salts and chemical substances closely allied to calculus.

Along with the administration of urea I apply treatment in the broad sense—that is, pure air and plenty of nutritious foods, urging most of all those rich in albumin, and including daily one kidney well cooked, with half a pint of very concentrated beef-tea; also exercise in the fresh air as freely as possible, and in carefully selected cases, if there is no hæmorrhage, light dumb-bells and Indian clubs are practised. Drugs of recognised value are given—iron and cod-liver oil more frequently than any—occasionally medicines to improve digestion, such as hydrochloric acid, strychnia, and pepsin, and creasote in combination with cod-liver oil. In short, urea has been added to the remedies which I formerly used. On two occasions this treatment has called forth symptoms of gout—viz., pain in the big toe-joint and pain in the lumbar region, accompanied by gouty urine containing nearly double the normal quantity of urea. On lessening the animal food and increasing green vegetables these symptoms soon passed off. Carter says: "There is room in plenty both for pleasure and profit by habituating ourselves in our daily work to the exercise of our imagination in picturing to our minds as intelligently and yet as graphically as we can what we conceive to be the morbid conditions of parts hidden from our view in the patients who come before us; to endeavour to form for ourselves as plausible impressions as our knowledge permits of the morbid processes which are taking place—hypothetical though they may be; to fix such pictures in our minds and to compare them with previous pictures of other cases which appear to us to have points in common, in the hope of educing rules for our guide in practice, to work out in our minds the probabilities of causation and their mode of action." This mode of treatment is in keeping with what we know of other remedies which have been used with success in tuberculosis—e.g., nuclein, a substance which increases the metabolism of the organism, and cod-liver oil rendering the chyle more easy of absorption by the lacteals. Physiology tells us that oil must be present where growth and cell-formation are going on. Iron and the hypophosphites increase oxygenation in the blood and tissues. Pure air and rich food containing a superabundance of urea render the tissues and fluids of the body proof against the bacilli finding a suitable soil—in short, they act as an antitoxin.

CASE 1.—A business man, aged 40 years, came under my care on June 7th, 1899. He had been ailing for one year. His indisposition began with insomnia from overwork. Six months previously he had an eczematous rash which remained till within seven weeks of his being seen by me. Two months before coming under my care he was taken suddenly ill with terrible pain on the right side of the diaphragm and was told by his medical attendant that he had "distended heart." He was rapidly losing flesh. He complained of "stuffiness" and of a feeling as of a "band" round the midriff. There was desperate dyspnœa on exertion. The respirations were 32 per minute, with a very quick-beating heart, missing every sixth or seventh beat. The epigastrium was very tender, with marked cardiac impulse. Percussion was very dull, bilateral to the level of the sixth rib. A hypodermic needle was inserted between the ninth and tenth ribs bilaterally and very dark fluid was drawn off. A diagnosis of bilateral pleurisy with pericardial effusion was made. Daily hectic made it soon apparent that there was something more underlying this. Examination of the sputum showed tubercle bacilli, but there were no bacilli in the pleurisy fluid. Here the prognosis was as hopeless as possible. For three weeks the patient was put on approved remedies, including iodide of potassium, salicylate of soda, and digitalis without any improvement. On June 28th the urea was ordered in scruple doses four times daily. Within seven days improvement was very noticeable in the dyspnœa. The respirations were 28 per minute. On this day a crackle was discovered in the left lower axilla denoting the focus of the tubercle bacilli. By July 15th the patient had made great improvement and was able to walk freely on level ground and go up and down stairs with ease. From this time onward the improvement was rapid, the physical signs of disease within the chest quickly departing. Immediately after giving urea the urine increased in quantity and contained more urea and solids. On Sept. 19th the patient was quite well; all signs of pleurisy fluid had gone, there was no cough or expectoration, and he expressed himself as being "as well as ever he was." In January of this year I had a message from the patient saying that he was in the best of health.

CASE 2.—The patient, a man, aged 25 years, who came under my care on Jan. 12th, 1900, had been ailing for four years. The illness began with wandering pains all over the body, followed by swollen glands of the neck. He knew that syrup of the iodide of iron brought the glands down in size. He had worked long hours in a badly ventilated room. He had hoarse voice for a few weeks and a peculiar croupy cough. The evening temperature was 101° F. The left apex was slightly dull, with altered jerking respiratory sounds, and a focus of softening was audible there. The most noticeable feature of the case was enlargement of the lymphatic glands of the neck, all the chain running from the clavicle to the mastoid being enlarged from the size of a garden bean to a walnut. In the hollow above the notch of the sternum was a gland as big as a duck's egg. On each side of the neck above the thyroid cartilages was situated a similar gland. These three large glands seemed to compress the larynx and to produce obstruction to breathing. On Feb. 15th the patient was much worse. There was loud stridulous breathing and he was quite blue in the face and looked a picture of distress. I had a consultation with Mr. A. R. Anderson with a view to operation for the removal of the large glands. We agreed that they were tuberculous and that complete removal was impossible, and that the only thing remaining, if the breathing assumed a worse form, was to insert a tracheotomy tube. I may state here that I examined the sputum and found tubercle

bacilli therein, few in number, but tubercle unmistakeable. It was at this stage that I began hypodermic medication with urea, commencing with 40 grains dissolved in four drachms of distilled water, thoroughly sterilised. The syringe was sterilised as well, having a fine needle two inches long which I inserted deep into the gluteal region, injected slowly, withdrew the needle half an inch or so, and injected the remaining part of the urea at a more superficial depth in the muscle, the operation being done on both sides on alternate days. Within 24 hours there was a marked improvement in the condition of the patient. That night he was able to sleep at intervals and was eased of the choking. On my visit next morning there was less stridor and more steady respiration; his appearance was less livid. No apparent change in the size of the glands was noticeable before the tenth day of injection. At this date there was evidence of shrinking and accompanying this very marked improvement of the laryngeal trouble. Hitherto the patient had been striving to speak in scarcely audible whispers; now he could make himself heard. During the acute period of obstruction a quantity of very ropy white expectoration was raised. The hypodermic injection was used for 45 consecutive days. The patient was 6 st. in weight at the low point and he is now over 11 st. The hypodermic dose of urea was gradually increased up to 65 grains. No local injury or trouble attended or followed the hypodermic injections.

CASE 3.—A female, aged 20 years, came under my care in April, 1899. Three months previously she had had influenza, since which time she had been ill, had suffered from cough, and had lost flesh. The evening temperature was 101° F. There were a loud crackle and a focus of rapid softening at the left apex. The expectoration was teeming with bacilli, the thorax was flat, and the body was thin and wasted. On June 10th the patient showed no improvement. She was put on scruple doses of urea three times a day. On the 24th marked improvement was manifest. There was no hectic, the cough and expectoration were less troublesome, and the crackle at the left apex had gone. The patient had gained three pounds in weight. Careful examination of the sputum showed fewer bacilli but more cocci. On Sept. 15th the patient seemed quite well. The expectoration was free from bacilli, she had gained 10 pounds in weight, and the physical signs of lung disease had gone.

CASE 4.—A married woman, aged 52 years, came under treatment on August 20th, 1900. Her health had been failing for three years. There had been cough and loss of flesh, the decrease in weight during that time being 2 st. During the last year these symptoms had been much worse. There was terrible dyspnœa on the least exertion and the patient did not sleep well. There was no hæmoptysis but a large quantity of green sputum in the mornings was seen to be loaded with bacilli. Daily hectic was present and the appetite was poor. Physical examination showed extensive softening of the left lung all over with several cavities. There were also a crackle and softening of the right base at the back. The prognosis was grave—as hopeless as possible. The patient was put on compound mixture of iron with minute doses of creasote added. Urea was added in a separate mixture in scruple doses thrice daily. The patient was wheeled out in a bath-chair and gentle carriage exercise was allowed. On the 27th the patient was seen again when there was decided improvement; the appetite was better. This line of treatment was persevered in. After two months the patient was able to walk, and now she gets about freely and can stand a 15-miles' drive into Nottingham. She has gained seven pounds in weight, she eats well, there is very little cough, but the sputum still contains bacilli. Never before have I seen a case like this improve. I attribute the improvement to the urea.

CASE 5.—The patient, a female, aged 21 years, came under my care on April 30th, 1896. She had been in failing health for six months. Her illness began with anæmia followed by cough and much loss of flesh. There was also marked dyspnœa on exertion and the voice was hoarse (laryngitis). Physical examination revealed much crackle denoting tuberculous softening in the right apex. The sputum was loaded with bacilli. Under treatment the patient improved during the first year, but through the next year her condition remained stationary. She was now seized with influenza and there were hectic fever, rapid wasting, and profuse sputum. The strange part of the case was a soft baggy swelling that came in the left second intercostal space near the sternum. The swelling looked like a pointing abscess and was in communication with the cavity of the chest. I began to doubt my diagnosis and thought the case might be actinomycosis. To settle this point I inserted a fine aseptic needle and examined the pus, which was largely composed of cocci and a fair number of tubercle bacilli, but no ray fungus. I quite expected the abscess to point and discharge; it did not, but gradually got smaller and disappeared. The patient was very ill at this time, losing ground rapidly. At this juncture I began to give urea in scruple doses four times daily, along with an iron mixture nearly the same as the compound mixture of iron of the British Pharmacopœia and creasote combined. The patient soon showed signs of improvement. The appetite became better, there was less cough, and the sputum contained fewer bacilli and more cocci. I followed up this line of treatment for months, the patient gaining flesh and strength so much that she was able to cycle slowly on level ground during the summer. Now (January, 1901) the patient is in fairly good health, able to do household work, and is free from suffering. The sputum still contains bacilli. Again I attribute the recovery to the urea.

CASE 6.—The patient, aged 21 years, was first seen by me on Oct. 1st, 1900. He had been ailing for 12 months. The illness began with influenza, followed by cough and loss of flesh. Hæmoptysis was present; he had had 12 attacks in all. There was much dyspnœa on exertion. His father had died from phthisis. There was a large quantity of green sputum. The evening temperature was 101° F. Ziehl Neelsen staining showed under the microscope teeming bacilli and there was rapid softening of the upper half of the right lung. The patient had lost 12 pounds in weight. The prognosis was most grave. I ordered urea to be given in scruple doses four times daily, also compound mixture of iron. The patient, who lived in a country town, took plenty of exercise in the fresh air daily, along with gentle athletics, light dumb-bells, Indian clubs, &c. Abundance of nutritious food rich in albumin, a fresh well-cooked kidney every day, and good beef-tea formed the patient's diet, upon which he showed improvement from the first, steadily gaining in weight, losing the cough, and becoming entirely free from the expectoration. He now (Feb. 1st, 1901) considers himself well; there is no increase in the urea excreted.

CASE 7.—A married woman, aged 40 years, came under my care on Jan. 31st, 1900. Her illness dated from her confinement 22 months previously. She suckled her child for over one year. For six months she was very ill. There were cough and loss of flesh but there was no noticeable dyspnœa. Sleep was fitful and occasionally there were night sweats. The patient looked very thin, with bad thoracic movements. Neither auscultation nor percussion revealed any focus of softening, but the sputum when examined for bacilli showed these in abundance. On Feb. 14th a crackle and a focus of tuberculous infiltration in the right interscapular region were discovered. There was much expectoration and the lung was breaking up rapidly. For four months the patient was treated in the usual way. She lived in the country and spent as much time in the fresh air as possible. She was taking the usual remedies, including iron, cod-liver oil, malt, guaiacol, and creasote. On June 6th, being no better, she was ordered to take urea in scruple doses three times a day. Within 14 days the improvement was very marked. I saw the patient fortnightly and the improvement continued to be steady. By Sept. 26th, great improvement had been made. The symptoms of softening had gone, there was no cough or expectoration, the appetite was good, and the patient had gained nine pounds in weight. She now believes herself to be quite well. The urea appeared to be most valuable in this case.

CASE 8.—The patient, a schoolboy, aged 13 years, was first seen by me on May 30th, 1899. He had never been strong. He had been ill for a week with a feverish cough and now he vomited blood. He was a very nervous boy. Respiration was quick and jerky, there was a crackle in the right supra-clavicular region, and the expectoration contained a few scattered bacilli. On June 27th, when the patient had been taking urea for four weeks, the expectoration had become free from bacilli, and the cough had gone. He said that he was quite well. All evidence of disease had disappeared. Now (February, 1901) he is in the best of health.

CASE 9.—A youth, aged 17 years, who came under my care on June 3rd, 1899, had been seized with influenza six

weeks previously. He had suffered from cough, loss of flesh, and failing appetite. He looked thin and ill-developed. There was hyper-resonance in the apices and a crackle in the left axilla denoted softening. Examination of the sputum showed a limited number of bacilli. A favourable prognosis was made. He was ordered to take urea in scruple doses thrice daily with cod-liver oil emulsion. On the 10th the cough was easier. There were more yellow expectoration and more distinct symptoms of softening of the left axilla The patient looked better and said that he felt so. He had gained one pound in weight. On the 12th the crackle was less distinct and the patient had gained another pound in weight. On the 24th the symptoms of softening had gone, there was very little expectoration, and only two bacilli were found in the sputum. On July 22nd there were no cough and no physical signs of lung disease. The patient had gained eight pounds in weight since the treatment was commenced and he seemed to have quite recovered. When seen in October, 1900, he was quite well.

In all these cases the diagnosis was confirmed by microscopical examination of the sputum. All were indisputable tuberculosis, and nearly all were hopelessly bad cases such as I have never before seen to show any signs of improvement. From an extensive experience of urea in tuberculosis it is the only thing that I can call a remedy, and I think its value is best seen in this disease uncomplicated by the various species of cocci.

These notes are very imperfect, being only a rough-and-ready record of cases taken in the hurry of practice. Careful and systematic examination of the urea excreted by the kidneys previously to beginning the urea treatment is needed. Only in two of the cases in which I have examined the urine with Martindale's ureometer have I found any increase in the quantity of urea excreted. I have examined the sputum frequently and almost invariably have found lessening or disappearance of the bacilli. One thing I feel sure about is that urea given in this way has produced cure in some and improvement in others in a series of bad cases of tuberculosis that hitherto my experience has led me to look upon as incurable.

On examining the diet list of any sanatorium the predominant idea seems to be to introduce into the body as much animal food rich in albumin as possible, I would remark in reality urea producers; this, coupled with free exercise in the pure air, increases metabolism, and here it is probable that urea plays an important part in the treatment. From our knowledge at present of the management of tuberculosis all remedies used in combating the disease must be constructive, not destructive.

In the laboratory I have tried twice to get the tubercle bacilli to grow in freshly prepared meat-broth, adding urea from 1 to 0·001 per cent., at the same time inoculating a tube without urea as control. In the control-tubes bacilli grew all right in the incubator; those with the urea added failed. Unsupported this experiment is useless, so I applied to the Jenner Institute of Preventive Medicine to carry out an experiment by feeding a guinea-pig for a time on urea given with the food and then inoculating the animal with tubercle bacilli. This they very kindly are carrying out and the result will be published later. The bacteriological portion of the work was done in the laboratory of Mr. Trotman, city analyst, and Messrs. Allen and Hanburys supplied me with pure urea.

Nottingham.

A CASE OF PEMPHIGUS NEONATORUM IN AN INFANT THREE DAYS OLD.

BY CHARLES J. GLASSON, M.D. BRUX., M.R.C.S. ENG., L.R.C.P. LOND.

THIS case I consider to be one which is so uncommon as to warrant publication.

On Nov. 8th, 1899, the infant was born. There was nothing unusual in the labour, and the baby after being washed presented the usual appearance. The infant, a fine healthy boy, was above the ordinary weight, and was quite free from any spot or blemish. There was the usual exfoliation that takes place in every newly-born infant. On the third day the nurse asked me to look at the infant as he had, as she termed it, the "milk rash" very badly. I examined the boy and was surprised to see a large one of a bullous nature on the occipital portion of the scalp, round in shape, filled with a cloudy fluid and surrounded by a bright red ring of inflammation; there were several smaller spots of a like character around the larger one, and others on different portions of the body. The boy did not appear to be in any way affected, took his food, and slept well and easily. I ordered a small dose of Dinneford's fluid magnesia to be given at once. There was no jaundice; the tongue was slightly coated. On the next morning, however, the spots had increased over the whole body; the face, scalp, and limbs being covered, many running into each other; all had exactly the same characteristics. The case was one of acute pemphigus. The general condition of the infant was worse; he was restless, constantly crying, and would not take his food; he was very feverish, his temperature being 104° F.; his bowels were constipated; and the urine was scanty and smelling very offensively. A very large patch of the size of a shilling had appeared on the nape of the neck which had been rubbed, and a thick purulent fluid exuded on to a soft handkerchief which the nurse had applied. I at once had the infant undressed and I pricked each spot separately with a clean aseptic needle, absorbed the fluid by means of absorbent wool, then placed him into a bath of warm rain-water, and thoroughly washed all the spots. I allowed him to remain five minutes in the bath, keeping the water at an even temperature. He was then taken out and carefully dried by means of soft linen, and to each spot I applied boric ointment, the infant being wrapped in soft linen and a warm blanket being placed around him. After this I found that he was much more comfortable; he took the breast quite freely and slept for two hours. This treatment I had carried out each night and morning and gave him internally minim doses of liquor arsenicalis.

As I knew both father and mother and their six children very well, and all were perfectly healthy, I was puzzled to account for the outbreak, especially as most authorities are of the opinion that syphilis is the cause. I made every inquiry but failed to elicit one fact which could point to there being any history of syphilis in either the mother or father or grandparents. All the children were strong and healthy and showed no signs of any syphilitic taint. There had been no miscarriages and all labours had been good. None of the children had ever had the slightest rash or spots after birth.

After three days of the treatment described above there was very marked improvement. The temperature was normal, the functions were working well, all the spots were healing, and inflammation was disappearing. No fresh eruption had taken place; the infant taking his food well and being quite free from pain and irritation, I changed the boric ointment for zinc ointment made with benzoated lard. All went on quite satisfactorily; some of the spots had healed and others were gradually closing and getting smaller until the ninth day, when the whole of the outer cuticle began to peel off like a glove, leaving the cutis vera red and weeping with the papillæ prominent. It began on the forehead, hands, and feet, no part of the body escaping. Naturally when this commenced it made the infant very cross and irritable, but otherwise did not seem to affect him. I still continued the baths, only instead of the ointment I used the following powder: oxide of zinc, finely powdered starch, and a small quantity of camphor. This powder was freely applied all over the body after each bath and had a wonderful effect in soothing and allaying the irritation and discharge. The skin slowly peeled off and it was quite three weeks before it had finished, leaving the new skin perfectly whole and free from any blemish. The internal treatment was continued for three weeks.

Seven weeks after the first appearance of the first spot the infant was quite well and perfectly free from any spot or blemish and had increased in weight and size. The mother nursed him all through, having a good and rich supply of milk. Six months afterwards I vaccinated him with calf lymph which took splendidly and healed up without causing the slightest return of any trouble.

Most authorities on skin diseases give the cause of this complaint in infants as due to syphilis. Dr. Radcliffe Crocker states that he considers that pemphigus neonatorum may arise independently, and in this case I agree with him, and do not hesitate to say that it was not due to syphilis but had arisen *per se*. It was not due to dirt, as a trained nurse had charge of the infant from birth. I have seen pemphigus in infants of undoubted syphilitic origin, but never so severe an attack which was so quickly amenable to treatment and which I fully expected to terminate

fatally as the prognosis in these cases is always grave. I think the quick evacuation of the fluid in the bullæ and the antiseptic treatment applied locally and continued afterwards were the means of cutting short the attack and so saved the life of the infant. What I could not understand and had never seen before was the very complete exfoliation of the outer cuticle over the entire body, which on healing again left the skin perfectly clean and free from any blemish. This case was seen by a brother practitioner, who at once diagnosed it as pemphigus and gave his opinion that it must be due to syphilis and would probably end fatally. This, I am glad to say, was not the case and the infant up to the present time is perfectly well and has never had the slightest return of any rash or symptom, neither does he show any of the characteristics of inherited syphilis.

Cheyne-gardens, S.W.

A FEW CASES OF ETHYL CHLORIDE NARCOSIS.

BY W. J. McCARDIE, B.A., M.B., B.C. CANTAB.,
ANÆSTHETIST TO THE GENERAL AND DENTAL HOSPITALS, BIRMINGHAM.

ETHYL chloride, according to Kappeler, was first tried as an anæsthetic for surgical operations by Heyfelder. Recently Lotheissen of Innsbruck introduced it for general use in minor, or comparatively minor, surgery with great success. Ludwig and Wiesner and others quickly followed suit, and now some thousands of cases have been recorded. Occasionally it has been administered for 30, and once for 55, minutes for operations like colotomy and amputation, and in many of the shorter gynæcological interventions.

Ethyl chloride is said to have many advantages and few disadvantages. Anæsthesia is quickly (in about two minutes) induced and as rapidly passes off, leaving no, or slight, after-effects, has no irritating action, and can be administered in heart, lung, or kidney diseases where ether and chloroform are contra-indicated or dangerous. Its main disadvantage is that, except perhaps in children, muscular relaxation is generally not complete and rigidity may be marked in muscular, and especially in alcoholic, subjects.

The best mask to administer from is that of Breuer, to be obtained in Vienna, a close-fitting one with inspiratory and expiratory valves and a chamber above the former to hold the gauze on which the drug is to be sprayed. Large graduated flasks containing 50 cubic centimetres and a freer spraying capacity than usual should be used, so that the usual dose of from five to six cubic centimetres can be quickly poured out. The whole apparatus is very portable and convenient. Before I tried ethyl chloride on others I asked Mr. Charles St. Johnston, M.R.C.S., to administer it to me experimentally in a dental chair, and I can say that the subjective effects were like those of nitrous oxide in every respect and not at all unpleasant. Lotheissen has collected 2500 cases with one death, that of an extremely bad subject. Complications during the induction or continuance of anæsthesia appear to be rare, chiefly, so far as I can read, of an asphyxial kind and dependent on some mechanical factor.

Ethyl chloride would seem to be increasingly used in Germany and France, like ethyl bromide, in operations for which nitrous oxide alone, or mixed with oxygen, would be, if possible, administered in England.

The following are short notes of my first 10 cases, the first two on Jan. 15th of this year.

1.—A woman, aged 40 years; extraction of three teeth. Anæsthesia was induced in two and a half minutes and lasted about one minute, passing off quietly. The colour was heightened throughout. The inhaler was removed before the conjunctival reflex was abolished; there was very slight phonation towards the end, but there were perfect anæsthesia and recovery.

2.—A woman, aged 21 years; extraction of three teeth. The course was much the same as in the last patient, the pulse being good and regular during the operation; there was no excitement or muscular spasm. The patient seemed to be in an analgetic condition.

3.—A woman, aged 24 years. It took three minutes to get her apparently under—i.e., just stopping short of abolition of conjunctival reflex—but recovery was so rapid (a quarter of a minute) that no extraction could be performed. N_2O was therefore administered and two teeth were removed.

4.—A strongly-built woman, aged 20 years; tooth extraction. After three minutes' inhalation with little apparent effect, I changed to N_2O to complete the operation.

In the above cases I was proceeding very carefully because the exhibition of the drug was new to me and in Cases 3 and 4 too little was administered. Again, I was not using a graduated flask and so did not know how much ethyl chloride was sprayed on.

5.—A man, aged 26 years; a difficult extraction. He was the ordinary type of patient. There was good anæsthesia from 20 to 35 seconds. There was no excitement; the colour and respiration were good. Administration was stopped when the conjunctival reflex became much dulled.

6.—A woman, aged 23 years; extraction of two teeth. She was under (the reflex was not gone) in about two minutes. 30 seconds of quiet anæsthesia were obtained; about five cubic centimetres were used. The patient felt a little giddy for a short time afterwards.

7.—A woman, aged 18 years; extraction of six teeth. The patient was very nervous, thin, and had a high arched palate. She felt sick and retched during the taking of an impression of the mouth before operation. There was quiet induction in two minutes; the reflex was just lost, the eyes were turned in, and the pupils were well contracted; the colour was good; the respirations were slow and regular. Perfect anæsthesia for more than one minute was obtained. The recovery was very gradual and quiet; two or three more teeth could have been extracted. She then retched much and vomited a little for a few minutes. She afterwards said that she felt well and much better than after N_2O on two previous occasions.

The usual dental sitting-up posture was kept in all these cases.

8.—A girl, aged eight years; tonsils and adenoids. The administration was slow. Anæsthesia lasted for 25 seconds. Reapplied for tonsils; anæsthesia lasted for 20 seconds. Recovery was as perfect and rapid as from N_2O. There was no change of colour throughout.

9.—A boy, aged 12 years; tonsils and adenoids. The course was the same as in the last case, only the anæsthesia was much shorter.

10.—A spare woman, aged 32 years; scraping, &c., granulations of both ears. From five to six cubic centimetres were sprayed on the inhaler. There was quiet induction in three minutes; the conjunctival reflex was just lost. There was perfect anæsthesia with slight muscular rigidity throughout which did not inconvenience the operator. The colour, pulse, and respiration were very good. Reflex was present most of the time corresponding to moderately contracted pupil. The reflex was twice abolished when the pupil became well contracted and breathing became a little slower. Complete recovery occurred in about one and a half minutes. Operative anæsthesia lasted for five minutes. The patient vomited a little bile-stained fluid shortly after being put to bed. She then felt well, but five hours later she complained of feeling faint for a short time. She was quite well the next day. This was a most successful case in every way.

I used Breuer's mask for all these patients and found it very convenient to manipulate. At no time had I anxiety, nor did I see any change for the worse either in respiration or circulation. I have several times used ethyl chloride instead of nitrous oxide as a preliminary to etherisation and with the same successful effect. The few cases which I have briefly and imperfectly recorded have been so successful that I shall lose no suitable opportunity of testing the drug in carefully selected patients for longer and more difficult operations.

Birmingham.

A FURTHER NOTE ON THE PRODUCTION OF LOCAL ANÆSTHESIA IN THE EAR, NOSE, AND THROAT.

BY ALBERT A. GRAY, M.D., F.F.P.S. GLASG., F.R.S. EDIN.,
AURAL SURGEON TO THE GLASGOW CENTRAL DISPENSARY.

IN THE LANCET of April 21st, 1900, p. 1125, I described a method by means of which the difficulty of obtaining local anæsthesia in the ear could be overcome. It consisted essentially in using a solution of cocaine in anilin oil and rectified spirit. I further mentioned the limits within which

that method was applicable. As the method has been widely adopted both in this country and abroad I propose to describe some little improvements I have been able to make which allow the limits of its application to be considerably widened. Several correspondents wrote to me asking "what is anilin oil?" as they had not been able to obtain it at the druggists, nor could they find the name in works on chemistry. In reply to these inquirers I have only to say that anilin oil is the same as anilin. It is the French *huile d'anilin* and the German anilinöl. It is, of course, not an oil at all, but is frequently termed such because of its oily consistence. When fresh it is almost colourless, but it turns yellow or brown with time. It should be kept in a glass-stoppered bottle and in a dark place.

In the paper referred to I described the method I then employed, using simply a 10 per cent. solution of cocaine hydrochlorate in a mixture of equal parts of anilin oil and rectified spirit. For ear work this proved highly satisfactory, but for operations involving deeper parts, such as excision of tonsils, the removal of bony spurs from the nasal septum, &c., although much better than the simple aqueous solutions of cocaine it still did not completely annul the pain and, moreover, caused a burning sensation. The most obvious way to accomplish this end was to make the solution stronger, and this was what I did. To avoid the dangers of using strong solutions of cocaine, I mixed β-eucaine[1] with the cocaine in the following way. Two solutions were made: (1) a 20 per cent. solution of cocaine hydrochlorate in rectified spirit; and (2) a 15 to 20 per cent. solution of eucaine in anilin oil. The latter is not a true solution, however, as eucaine is only soluble to about the extent of 10 per cent. in anilin oil; a proportion of the eucaine, therefore, lies at the bottom of the bottle. Before use the bottle containing solution No. 2 is well shaken up and 10 minims (measured) are poured out; to this are added 10 minims of No. 1 solution and the mixture becomes clear in a few seconds. This gives the following formula: cocaine hydrochlorate 10 parts, β-eucaine 10 parts, anilin 50 parts, and rectified spirit 50 parts. Of course this solution may be kept in stock, but it turns brown very soon and appears to a slight extent to lose its highly penetrating quality. I therefore keep the solutions separate until just before use, though perhaps the precaution is unnecessary. With this solution I have been able to dispense with all aqueous solutions of cocaine in ear and throat work.

The method of use is different according to the region in which the anæsthesia is desired. In the ear the method I formerly employed was to pour the solution into the meatus while the head was turned to one side. I frequently employ this method still, but another equally efficacious way was suggested to me by Dr. Arthur Hutchison—viz., to soak a small strip of gauze with the solution and to push it down the meatus through the speculum to the required depth. This method certainly diminishes the amount of cocaine and anilin oil absorbed.

In my previous communication I stated that the method was not suitable for throat and nose work on account of the burning pain which it temporarily caused. Further experience has led me to change my opinion in this respect, as I find that the disagreeableness of the burning sensation is fully compensated for by the much deeper anæsthesia obtained and the freedom from symptoms of cocaine intoxication. The method which I employ in throat and nose work is as follows. 10 minims (measured) of the eucaine-anilin solution are poured out and 10 minims of the cocaine-spirit solution are mixed with them. The mixture, at first opaque, becomes clear and consists of a 10 per cent. solution of cocaine and 10 per cent. of eucaine. Under no circumstances do I use more than 20 minims of this solution—that is to say, 10 minims of anilin. That amount is quite sufficient for the painless excision of tonsils, removal of spurs on the septum, cauterising, and other operations. In applying the solution the anæsthetic effect appears to be considerably enhanced if it be rubbed gently over the part for a few seconds. This is done by saturating a small pledget of cotton-wool at the end of a probe with a few minims of the solution and rubbing it in. A period of at least seven minutes should then be allowed to elapse, at the end of which the anæsthesia will be found to be complete; much more so than that obtained by much larger quantities or stronger aqueous solutions of the anæsthetics. It should be added that if, after producing anæsthesia, chromic acid be used as an escharotic, the scab will be dark green in colour owing to the formation of an anilin dye. This produces no deleterious effect in the system and does not diminish the efficacy of the caustic.

In regard to the physiological effects of this method a few words are required. I have not had any trouble myself with symptoms of intoxication, either by the anilin or by the cocaine. I have, however, heard of two cases in which a little trouble resulted. Of one of these I am unable to give details as it was reported to me by a third person. It was a case evidently of cocaine intoxication and the patient recovered in the course of an hour or two. The second case occurred in a patient, aged six years. The solution was instilled into the meatus until the latter was full. In the course of an hour or so the patient's lips became blue and slight gastric catarrh occurred, but no other symptoms were present and the patient was well again in a few hours. As a matter of fact, beyond the peculiar blue colour of the lips there was nothing alarming to note. Excepting these cases, neither of which occurred in my own practice, I have not seen or heard of any trouble with the solution. On the other hand, I never have now any of those symptoms of cocaine intoxication with which rhinologists are so familiar when the *aqueous* solution is applied to the nasal mucous membrane, and which, though not usually alarming, are yet sufficient to prevent the carrying out of minor operations, much to the chagrin of the surgeon and the patient. Using the solutions in the manner described above excludes these extremely disagreeable symptoms.

A few words may be said in regard to the peculiar blue colour of the lips which sometimes occurs. Several of my patients have told me that an hour or two after the use of the solution their friends noticed this peculiar colour. No symptoms were present in any of the cases and the patients would not have known about it had their attention not been drawn to it by their friends. It always passes off in the course of a few hours and leaves no effects. Professor Stockman informs me that this is due to the transformation of oxyhæmoglobin into methæmoglobin. Its occurrence may be avoided if so desired by limiting the dose to 20 minims for adults or adolescents and corresponding doses for children. As regards children it must be remembered that they are said to stand cocaine badly. For my own part I have not seen any objectionable symptoms in children, but then I have always been careful about using cocaine in any form in these patients.

Glasgow.

[1] On the Use of Eucaine in Otology and Laryngology see a paper by Yearsley and Horne, Brit. Med. Jour., Jan. 16th, 1897.

TWO CASES ILLUSTRATING THE USE OF THE X RAYS IN SURGERY.

BY G. P. NEWBOLT, F.R.C.S. ENG.,
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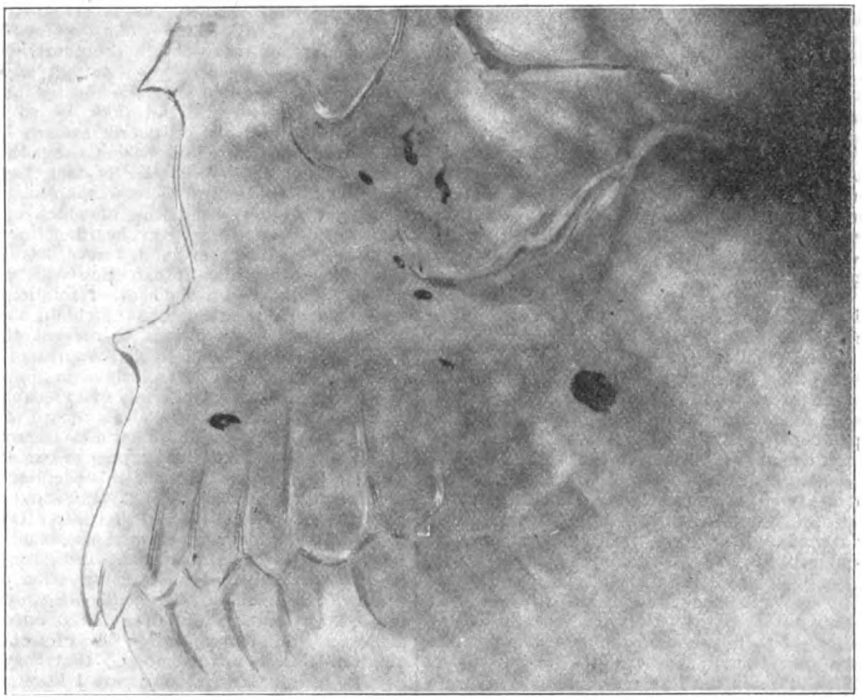
AND
C. THURSTAN HOLLAND, M.R.C.S. ENG., L.R.C.P. LOND.,
HONORARY MEDICAL OFFICER IN CHARGE OF THE X-RAY DEPARTMENT ROYAL SOUTHERN HOSPITAL, LIVERPOOL.

CASE 1.—The patient was a boy, aged 18 years, who was shot in the face. On August 28th whilst lying down another boy pointed a revolver into his face and it accidentally went off. The left eye being injured he was taken to the Liverpool Eye and Ear Infirmary where the eye was removed on the following day by the honorary surgeon, Mr. C. G. Lee. The bullet was not found in the eye, and on August 30th an x-ray examination was made by Mr. Holland. The boy lying down on his left side, two wires were fixed at right angles to one another across the left side of the face, and the skiagram shown in Fig. 1 was obtained. The apparatus used was a 10-inch coil worked with accumulators and the exposure was 90 seconds. The wound of entrance was at the left side of the bridge of the nose, just internal to the angle of the eyelids. The bullet had passed through the left eye and across the superior maxilla, leaving small pieces of lead in different parts on its way along. The spot under which the bullet lay was, from the x-ray examination, given as follows: draw a line straight forward from the lower margin of the lobe of the left ear and measure one inch from

the lobe along this line. From the sharpness and size of the shadow it was estimated that the depth would not be more than about an inch beneath the skin.

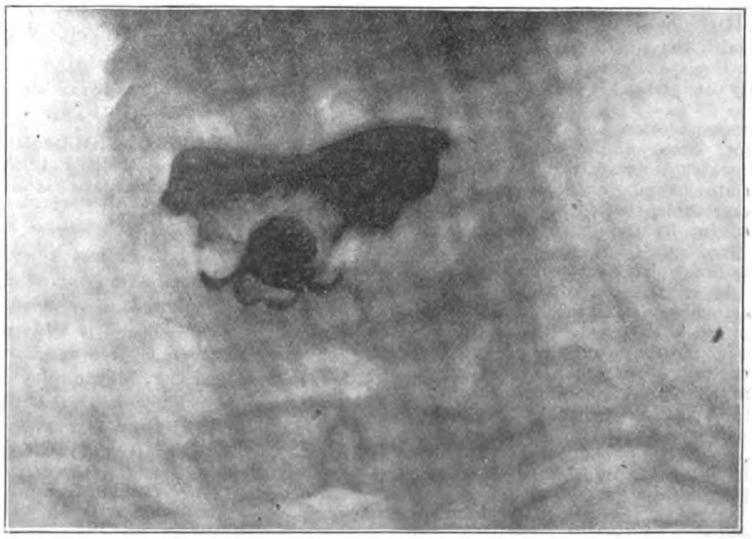
On Sept. 4th Mr. Newbolt made a small incision in the cheek with this spot as its centre. Dissecting straight down through subcutaneous tissue and through the masseter the bullet was found beneath this muscle, at about the depth from the skin of one inch. No difficulty occurred except that it was very firmly embedded and was not easy to dislodge. The wound healed by first intention and the boy made an uninterrupted recovery.

FIG. 1.



Reproduction of skiagram by Mr. C. Thurstan Holland. Shows bullet and scattered fragments in the face for two days.

FIG. 2.



Reproduction of skiagram by Mr. C. Thurstan Holland. Shows vulcanite plate, with one tooth and hooks, in the œsophagus for six hours.

CASE 2.—On July 27th Mr. Holland was sent for to see a boy, aged 16 years, who had when cleaning a window fallen backwards into an area and been badly hurt. When seen some hours after the accident, the cut, &c., having already been attended to, he was complaining of some difficulty in swallowing. As he was still in a very dazed condition it was difficult to get any reliable statement from him, but it was noticed by his friends that a front upper false tooth on a small vulcanite plate with two hooks was missing from the mouth. This could not be found anywhere, so it was decided to examine the boy with the x rays. On looking at him with the screen a foreign body resembling a tooth-plate could be easily seen fixed behind the larynx and it moved up and down

during efforts at swallowing. The skiagram (Fig. 2) was taken with the same apparatus as in the preceding case and with an exposure of 60 seconds. The boy was then transferred to the Southern Hospital and there under an anæsthetic Mr. Newbolt could just reach the top of the foreign body through the mouth with his finger. Without any difficulty he then managed to catch hold of it with a pair of strong forceps and to remove it. The boy made an uninterrupted recovery.

Liverpool.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A CASE OF MENINGO-MYELOCELE.

BY JAMES BURNET, M.A., M.B., CH.B. EDIN.

ON Jan. 29th, 1901, at 11.45 P.M., I was called to attend a woman in labour. It was her third pregnancy. She had had twins, who died from "decline" six months after birth. Her next child, born four years ago, is alive and healthy. About 18 months ago she had an abortion at the third month and was ill for a long time afterwards. In May of last year I saw her and treated her for constipation and anæmia, with the result that she improved considerably in health. About the end of December she sent for me, as she began to complain of a severe pain in the suprapubic region and over the right iliac fossa. She looked then very much run down. I prescribed for her, but she was unable to leave her bed much until labour set in on Jan. 29th. The presentation was a vertex one. There was some delay in the birth of the head, which was larger than the average. When born the child—a female—was asphyxiated, and gave evidence of convulsive twitchings in both arms and legs. Artificial respiration was performed, and the child soon revived and cried in a feeble manner. On examination I found a tumour situated in the lumbar region. It measured fully three and a half inches in length and two inches in breadth. It was sessile, and presented a well-marked central cicatrix. There was talipes of both feet, with some rigidity of the knee joints. The knee reflexes appeared to be absent. The surface of the tumour was only partially covered by skin. The sac wall was very thin. The tumour was carefully dressed and protected from external pressure. In spite of our efforts, however, rupture was evident on the third day and the child died quietly on the morning of the seventh day, having previously refused the breast. Two days prior to death I observed considerable mottling of the face and trunk, with depression of the fontanelle. Examination of the heart was entirely negative. No post-mortem examination was obtained, which I greatly regret.

The mother is a very neurotic woman, constipated and anæmic, always taking a very despondent view of life. No doubt these facts help to explain this early failure of development. I may add that the placenta and cord were perfectly normal.

Edinburgh.

A CASE OF IRREDUCIBLE DORSAL DISLOCATION OF THE PROXIMAL PHALANX OF THE INDEX FINGER.

BY C. F. M. ALTHORP, M.B. LOND.,
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ON July 6th, 1900, a youth, aged 16 years, whilst at work in a warehouse in Bradford, fell off a ladder, alighting on the right hand and dislocating the proximal phalanx of the index finger. When seen at the infirmary soon after the accident the right index finger presented the following appearance. The base of the proximal phalanx formed a prominence on the dorsum of the hand, the head of the metacarpal bone projected into the palm, and the finger was shortened and there was limitation in movement. Attempts at reduction by manipulation were made by several of my colleagues as well as by myself, but without success. Gas, followed by ether was given and after the skin had been thoroughly cleansed an incision, an inch in length, was made over the radial side of the joint. The soft structures were drawn apart and the joint was freely exposed. A strong fibrous band, the glenoid ligament, was seen stretched over the head of the metacarpal bone, preventing reduction of the dislocation. The ligament was partly divided with the knife, and then with a blunt elevator I levered the stretched band over the articular end of the metacarpal bone. At once the dislocation was reduced. The wound was closed, without drainage, and when dressed a few days afterwards was found to be healed. Massage and passive movements were employed, the stiffness gradually disappearing.

In December, 1900, six months after the operation, the patient was shown to the members of the Bradford Medico-Chirurgical Society. There were some thickening around the joint and slight limitation in extreme flexion. He had perfect use of the finger and could write as well as before the accident.

The case is of interest as illustrating the fact that in these dislocations (not only of the thumb but also of the fingers) it is the glenoid ligament which is the mechanical obstacle to reduction. By freely exposing the joint I was able to see the glenoid ligament stretched over the head of the metacarpal bone.

Bradford.

DIABETES MELLITUS IN A CHILD, WITH COMA.

BY J. G. MCNAUGHTON, M.D., M.R.C.P. EDIN.

THE fact that diabetes mellitus in children, with rapid coma, is comparatively rare may make this case worthy of record.

I was called to see a girl, aged five years, on Jan. 21st, 1901, and obtained the following history. Wasting had been observed for only four weeks, and three weeks previously the mother had observed that the child was drinking large quantities of water. She would send her older sister for "drinks" during the night. At the same time she was passing more urine than usual. She complained of nothing else and played about as usual. No increase of appetite was observed. Three weeks before both ears discharged for one day, but there had been no discharge since. On examination on Jan. 21st the pulse was 116 and small; the temperature was 97·6° F. She was restless and difficult to rouse when spoken to. The skin was dry. The pupils were equal and there had been no twitching. She complained of no pain. The urine was straw-coloured and frothy, and on being tested it was found to contain sugar and albumin. The lungs and heart were normal.

On Jan. 22nd I was summoned at 7 A.M. The patient had vomited several times during the night. During the 24 hours she had passed over 20 ounces of urine. She was in great distress and complained of pain above the umbilicus. There was great dyspnœa, the respirations being 38 per minute. The lips, face generally, and limbs, especially the feet, were cyanosed; one tenth of a grain of codeia every three hours gave her some relief. The urine passed contained 6 per cent. of sugar and 3 per cent. of albumin. The patient was seen at 4 P.M.; there were even greater dyspnœa and cyanosis, and she was gradually passing into a comatose state. The coma gradually deepened and she died at 3 A.M. on the next day.

The progress of the case was apparently very rapid, no urgent mischief being suspected till two days before death. The parents are intelligent people and careful of their children. The family history was not good. The mother has had five children and the eldest, an imbecile, died when about nine years of age. An aunt of the mother died from diabetes, and a sister of the father died from the same disease when over 50 years of age.

No examination of the body was allowed. It is possible that there may have been some change in the base of the brain, but one could get no history of irritation of cranial nerves, the only fact elicited being the discharge from the ears.

On Feb. 21st the mother of the child sickened with influenza. When seen for the first time on the 22nd the temperature was 100·4° and the pulse was 98. On the same evening she became acutely maniacal and she died 36 hours later in the same state. This note may be of interest, taken in connexion with Dr. Howship Dickinson's Baillie lecture in THE LANCET of Feb. 2nd, p. 299.

Turriff, N.B.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Procemium.

ST. GEORGE'S HOSPITAL.

GLYCOSURIA DUE TO MORPHIA COMPLICATING A CASE OF FRACTURE OF THE PATELLA.

(Under the care of Mr. A. MARMADUKE SHEILD.)

THE importance of the fact that in some cases glycosuria appears as a result of the administration of morphia can hardly be over-estimated in connexion with the fact that morphia and the closely allied alkaloid codeia are prescribed more frequently perhaps for diabetes than is any other drug. The cases, however, in which this idiosyncrasy is observed are extremely few in number. In the case recorded below, although it was not definitely proved that the sugar was due to the morphia, yet it is very probable. For the notes of this case we are indebted to Mr. Charles R. Keyser, surgical registrar.

A man, aged 55 years, was admitted into St. George's Hospital on Nov. 3rd, 1900, under the care of Mr. Sheild. The history was as follows. Whilst waiting to catch a train the patient slipped and fell and on attempting to walk found that he was unable to do so. On admission to the hospital he was found to be suffering from a transverse fracture of the patella. The two fragments were separated about three-quarters of an inch and the knee-joint was much distended with blood. The upper fragment was a good deal larger than the lower. There was no head injury. Beyond the fact that he suffered from a chronic cough he was apparently in good health. The urine was normal.

On Nov. 5th Mr. Sheild opened the knee-joint by a median vertical incision and after thoroughly washing out the blood and clots brought the broken fragments into apposition by means of two wire sutures placed parallel to each other in the long axis of the bone. Two wires were used as the lower fragment was split longitudinally. The joint was again thoroughly flushed out, the skin wound was closed with sutures, and the limb was immobilised by means of a back splint and two side splints. A few days later the urine was again examined and a large amount of sugar was present. The patient had no other symptom of diabetes and it was only after some difficulty that any cause for the glycosuria was found. Finally, it was discovered that he had been taking morphia for upwards of 20 years to allay his cough. As there has been some doubt as to whether the sugar present in these cases is really sugar and not glycuronic acid Dr. G. A. Buckmaster, lecturer on physiology to St. George's Hospital, kindly examined the urine and gave the following report: "Total amount of urine for 24 hours = 1486 cubic centimetres. Deep orange colour which is due to pathological urobilin. Reaction neutral. Specific gravity 1035. It contains no sediment or smell. Froths readily. Contains sugar in quantity as determined by fermentation, but no glycuronic acid, acetone, oxybutyric or aceto-acetic acid. Total amount of urea = 31 grammes." This definitely showed therefore that the urine was not that of diabetes.

The wound in the knee healed quite satisfactorily, but for the first fortnight after the operation the mental condition of the patient was strange. He frequently tried to take off his splints and get out of bed, and whilst doing this he seemed quite dazed, and when told about it afterwards apparently had no knowledge of what he had been doing. He slept very badly and drugs such as trional and chloral were administered as required. The amount of sugar in the urine steadily decreased in amount and on Nov. 30th only a trace could be found, although urobilin was still present. On Dec. 4th, however, no sugar could be found in the urine. The knee was massaged and moved gently every day from Nov. 24th and by Dec. 2nd the patient was walking about the ward. On Dec. 12th, although he could walk quite well and could flex the knee nearly to a right angle, there was practically no union whatever between the fragments of the patella, the bone being entirely held in position by the wires. He was discharged from the hospital with strict injunctions to present himself frequently so that his condition might be observed. Unfortunately, he has never returned to the hospital, so that it has not been possible to determine whether the sugar is again present in the urine now that he has access to morphia, of which, presumably, he will avail himself to allay his cough which certainly was rather troublesome during his stay in the hospital.

Remarks by Mr. KEYSER.—The only references I have been able to find on this subject of glycosuria due to morphia are the following. In Allbutt's "System of Medicine," vol. iv., page 309, he says: "Glycosuria occurs after the administration of various drugs and poisons, more especially of morphia, chloral, opium, chloroform, and carbonic oxide. It is probable that the reducing substance in the urine is not dextrose but a compound of glycuronic acid." In Taylor's "Practice of Medicine," fifth edition, p. 851, it is stated that "the supposed occurrence of glycosuria after the administration of morphine, curare, and chloroform vapour is due to glycuronic acid." However, Mitchell Bruce in his "Materia Medica" says: "Morphine may produce sugar in the urine." In relation to these statements it is, therefore, interesting to know that it is possible for sugar as well as glycuronic acid to be produced by morphia, especially as the drug is constantly administered to diminish the amount of sugar in the urine in diabetes. The fact that sugar was only present after the operation may, I think, be explained in the following way. In the patient's ordinary condition of health his tissues were capable of disposing of the sugar-forming substances present as a result of morphia, but when the extra call on them was made they were unable to meet the double demand, and in consequence the fracture did not unite, although the skin wound healed by first intention, and sugar appeared in the urine. For permission to record the case I am indebted to Mr. Sheild.

ADDENBROOKE'S HOSPITAL, CAMBRIDGE.

THREE CASES ILLUSTRATING THE OPEN-AIR TREATMENT OF PERNICIOUS AND OTHER FORMS OF TOXIC ANÆMIA.

(Under the care of Dr. LAURENCE HUMPHRY.)

IT is now generally recognised that one of the most important factors in the etiology of various obscure morbid conditions of the blood is the presence in the circulation of toxins. These toxins may be absorbed from the alimentary canal or they may be taken up from some septic focus, such as an abscess, or they may even be formed by organisms present in the blood itself. Our chemical knowledge at present is hardly sufficient to enable us to identify in the blood the special toxin in any particular case, but we may reasonably look forward to this in the future. The value of dwelling in the open air in such conditions as these is well illustrated by the three cases Dr. Humphry has reported below. In the elaborate discussion at the Royal Medical and Chirurgical Society in 1899[1] on the open-air treatment of tuberculosis it was recognised by several speakers that the beneficial effect was not confined to the lungs, but was recognisable in tubercle occurring in other parts of the body. The improvement is probably to be attributed in great part to the increase in the appetite and in the capacity for sleep, which gives rise to a general increased power of resistance to morbid germs and their products.

CASE 1. *Pernicious anæmia with postero-lateral spinal sclerosis.*—A man, aged 53 years, married, was admitted into Addenbrooke's Hospital, Cambridge, on March 3rd, 1900. Early in 1899 he began to feel ill with loss of appetite, drowsiness, and weakness; he kept at work until about the end of the year when his gait began to be unsteady. In January, with increasing weakness, noises in the head, and difficulty in walking, he gave up work and attended at the hospital as an out-patient, but derived little benefit. On admission he appeared to be very ill; he had lost flesh and

[1] Transactions of the Royal Medical and Chirurgical Society, vol. lxxxiii.

was very anæmic, with a pale lemon tinge of the skin. The pulse was feeble and soft and the artery was slightly thickened; the heart sounds were feeble and muffled. Examination of the blood showed that the red cells were much altered in shape, numbering 1,685,000 per cubic millimetre; the white cells numbered 12,000 and the hæmoglobin amounted to 35 per cent. The urine was normal and of pale colour. The temperature oscillated between subnormal and slightly febrile. The patient's gait was ataxic; there was no absolute loss of power but great general weakness. Sensation was rather dull in the legs, with numbness and "pins-and-needles" in the fingers and toes. The knee-jerks were slightly exaggerated; there was no clonus; there was extensor response to plantar reflex. There was no loss of control over the sphincters. The pupil of the right eye reacted, the sight was good, and the fundus was normal; the sight of the left eye had been lost through accident. The digestion was fairly good. The teeth were ill-kept and the gums were swollen. The bowels were constipated. The abdominal viscera were not enlarged.

The patient was treated with rest in bed in the ward, a liberal diet, and small doses of strychnine. He improved slightly in strength, but after several weeks in spite of the administration of arsenic and iron his condition got worse, the anæmia increased, and the count of the red cells on April 6th was 1,200,000 per cubic millimetre, the hæmoglobin amounted to 25 per cent., and there were several nucleated red cells; the megalocytes and microcytes were about equal in number and formed about half the number of the red cells. In April he was given red marrow (five grains three times a day) and during the month the arsenic was increased to 10 minims of Fowler's solution three times a day. There was a slight increase in the number of red cells on April 26th, but early in May he got much worse and looked as if he was going to die, and his wife decided to take him home. It was obvious that during his stay in the ward he had steadily got worse and was much weaker, in spite of good nourishment, port wine, arsenic, and bone marrow. His wife was advised as they lived in the country and had a garden to let him remain out all day in the open air, and the drugs were continued in smaller doses, and good nourishment was to be given. By July he had greatly improved and his wife reported that since living in the open air his complexion had improved, he was gaining strength and appetite, the breathlessness on movement was less, and she thought that he would be soon able to travel in his bath-chair to the hospital. On August 14th he was brought up in a chair looking a great deal better, especially in colour; although still anæmic his skin looked healthier. The blood count was—red cells 2,320,000 per cubic millimetre and white cells 7000. Several films were stained but no nucleated red cells were found. The red corpuscles were of much better shape and size than in the previous counts. There was no obvious change in the nervous symptoms but muscular power was greatly improved. In November last, in reply to a letter, his wife said that he was not quite so well as he had been in the summer, but the weather had been bad and he had not been able to sit out.

CASE 2. *Toxic anæmia due to post-typhoid septicæmia.*—A young man, aged 20 years, single, was transferred to Dr. Humphry's care in the summer months suffering from profound anæmia after a very severe attack of typhoid fever with numerous complications followed by septicæmia. He appeared to be in the weakest possible state and he was wasted almost to a skeleton; his temperature was still febrile and oscillating and there were the remains of a sinus of a parotid abscess, but there was little discharge and there was nothing obvious elsewhere. The blood count on July 16th showed that the red cells numbered 2,842,700 per cubic millimetre and the white cells 20,000, and there was a large increase in the polymorphonuclear neutrophiles.

The patient lay in a lethargic state, half or quite asleep, with his eyelids half open. He could not turn himself in bed and looked a most piteous object. The septicæmia was evidently still going on, as shown by his temperature. On August 8th, as he was getting worse, he was given 10 cubic centimetres of antistreptococcic serum, having four doses in the course of a few days. This was followed by no apparent benefit, and at the end of the month he was drowsy, exhausted, and apparently dying. On Sept. 1st he was moved on to the balcony for night and day and the change in a few days was remarkable. His appetite soon became enormous. On the 10th he weighed 5 st. 5 lb. and on the 24th 6 st. 4 lb.—a gain of about a stone. On Oct. 3rd the red blood cells were found to number 4,368,000 per cubic millimetre. (N.B.—This patient had subsequently a severe relapse of his septicæmic state and died with pyæmic abscesses in his joints.)

CASE 3. *Hæmolytic anæmia, probably pernicious.*—A widow, aged 60 years, attended at the hospital as an out-patient in May, 1900. She had been failing in health and strength for nearly a year and was getting paler and breathless on exertion; she also occasionally had fainting attacks and vomiting. She was very pale, with a uniform lemon tinge of the skin and conjunctiva; there was plenty of subcutaneous fat; the mucous membrane was very anæmic. The heart sounds were feeble at the apex and base. There were no teeth in the lower jaw, but there were a few sound teeth in the upper jaw. The blood was of specific gravity 1036, the hæmoglobin was 34 per cent., the red cells numbered 792,000 per cubic millimetre, and the white cells 2900, and the colour index was 2·15. Poikilocytosis was well marked, three nucleated red cells being present in the film; there were more megalocytes than microcytes.

The patient was treated with arsenic and iron; she improved slightly and left off attending at the hospital. She got much worse in August and entered the hospital as an in-patient on Sept. 5th. She complained of great weakness, breathlessness, and indigestion. Her temperature oscillated between 96° and 100° F. and the pulse was soft, feeble, and regular. The urine was pale and scanty, but normal. On the 6th there was poikilocytosis; the red cells numbered 1,440,000 per cubic millimetre, and the white cells 2444. There was no hæmorrhage of the discs; the viscera were not enlarged. She was placed in bed in the ward and was given half an ounce of the glycerine extract of bone marrow twice a day and "admission diet." On the 14th she was much the same, the red cells being rather less (1,232,000 per cubic millimetre). She was placed on the balcony on the 13th, but at first she was losing weight and had several attacks of sickness and faintness and then, owing to work to be done to the roof of the balcony, she had to return to the ward. She was placed on arsenic again on the 24th, taking four minims three times a day. She complained that she had had to leave the balcony, as she slept better out of doors. She was put back on the balcony for night and day on Oct. 8th; she then weighed 8 st. 5 lb. On Sept. 29th the red cells were 1,480,000 per cubic millimetre. From Oct. 8th onwards her improvement was steady and well maintained, she slept well, and the appetite improved. On the 21st she weighed 8 st. 7¼ lb., having gained 2¼ lb. Her colour was less sallow and yellow and some fresh colour began to appear in her cheeks and lips. On the 28th she weighed 8 st. 10 lb., a total gain of 5 lb. On the 20th, the red cells numbered 3,600,000 per cubic millimetre and the white cells 4000; the hæmoglobin amounted to 70 per cent.; the red cells were of better shape and size. On Nov. 6th she was discharged from the hospital. She then weighed 9 st., a total gain of 9 lb.; she was looking well, with plenty of colour, the lemon tinge quite gone, and she expressed herself as quite well again after nearly two years' illness.

Remarks by Dr. HUMPHRY.—In the treatment of pulmonary consumption the fact has often been observed that amongst the numerous benefits derived from life in the open air there is a very decided increase in the number of the red cells of the blood. This fact should not be lost sight of and suggests a very material aid in the treatment of those severe forms of anæmia in which a great diminution in the number of red cells is a marked feature. The balconies at Addenbrooke's Hospital having been recently fitted up to accommodate patients the opportunity has been afforded of giving this mode of treatment a full trial; at the same time, owing to the work of preparing the walls, floor, &c., it was necessary from time to time to send the patients back into the wards, and in this way clinical experiments were made which were of some value.

The first case was admitted to the hospital before the balcony was ready for use, but the benefit which the patient derived from living in the open air after leaving the hospital was so marked that it was decided to give the plan a full trial on the next opportunity. This case was a well-marked example of pernicious anæmia with spinal symptoms. He was for many weeks thoroughly treated with rest in bed, liberal diet, arsenic, and bone

marrow, but he steadily got worse until he lived in the open air. The second case was one of profound toxic anæmia due to post-typhoid septicæmia. The rapid improvement in weight (nearly a stone) and the increase in the number of the red cells (nearly 2,000,000 per cubic millimetre in one month) were remarkable. The third case, again, was probably a toxic form of anæmia or pernicious anæmia. The patient after about five weeks in the open air appeared to be nearly well. The value of rest and good diet and of the administration of arsenic and probably bone marrow is of course well known, and the effect of rest on the blood in health and simple anæmia has been shown in very careful experiments by Dr. G. Oliver in his work on the blood and blood pressure. In the two cases of pernicious anæmia the treatment by rest, diet, and drugs was practically the same when in the wards as in the open air. The second case had no special drug treatment at either time.

The effect of living by day and by night in the open air upon the appetite, sleep, digestion, and, finally, upon the blood was very pronounced, and the rapidity of the improvement was also remarkable. The red cells not only considerably increased in number but in the cases of pernicious anæmia the shape of the cells was noticed to have materially improved. It was also noticed that the patients did better when they slept out than if they came back to the wards at night. The balconies are entirely open and face due west, with only a roof, and during the greater part of the year there were not even blinds to afford protection from the wind, weather, or sun. No ill-effects were noticed from wet, damp, fog, or wind, but occasionally the sun was too powerful. It is no doubt well known that what appear to be cures or improvements in this form of anæmia are often transitory and that relapse is to be expected; nevertheless, it is often not difficult to arrange for living and sleeping in the open air, and, at any rate, it may prove a gain if only in a sense of well-being and comfort, while in more favourable or earlier stages of the disease the severer symptoms may possibly be prevented.

I am indebted to Mr. Strangeways Pigg and to his assistants in the pathological laboratory for the careful blood examinations.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Immunity in Relation to the Pancreatic Ferments.—The Immediate Diagnosis of Rabies.—On a Proteolytic Enzyme in the Spleen.—The Fermentation of Glucose by Sanarelli's Bacillus Icteroides.—The Nature of the Indol-reacting Substance in Diphtheria.—The Identity of Achalme's Bacillus and the Bacillus Enteritidis Sporogenes (Klein).

A MEETING of this society was held on March 5th, at the Jenner Institute of Preventive Medicine, Mr. W. WATSON CHEYNE being in the chair.

Dr. GEORGE DEAN made a communication on Experiments on Immunity in Relation to the Pancreas and its Ferments. After reference to the resemblance between the ferments and the bacterial toxins a brief outline was given of the work previously done in connexion with ferments of animal, vegetable, and bacterial origin and their anti-ferments. Special attention was given to Hildebrandt's researches in connexion with emulsin, and Morgenroth's work in relation to rennin and anti-rennin. The latter formed the starting point of the experiments detailed. Animals were treated with gradually increasing doses of pancreatin with the view of ascertaining whether an increase in the anti-tryptic action of the blood-serum could be obtained. It was demonstrated that such an increase did occur, but that it was low compared with the case of the bacterial antitoxins. The animal body appeared to have the power of regulating the production of trypsin and anti-trypsin, an excess of the one being followed by a hypersecretion of the other.

Dr. A. MOORE made a communication on the Immediate Diagnosis of Rabies in Animals. Although the establishment of a rapid diagnosis in cases of suspected rabies was a matter of considerable importance in view of the treatment of persons bitten by such animals, yet the methods in vogue at present for arriving at this decision were all open to objection for the following reasons—viz., (1) the living animal was rarely available for observation of the characteristic symptoms; (2) the dead animal often presented macroscopically no really conclusive signs of the malady beyond the evidences in the stomach of its perverted appetite; whilst (3) the classical method of inoculation always involved a delay of at least two or three weeks and was frequently inapplicable owing to putrefaction of the material used for inoculation. The frequently advocated microscopical examination of the medulla oblongata had not been deemed worthy of general adoption. Recently van Gehuchten had drawn attention to a lesion which he considered to be absolutely pathognomonic of rabies. This consisted in a remarkable degeneration of the large conspicuous cells found in the ganglia of the cerebro-spinal nerves. A considerable number of these cells atrophied completely, their place being taken by small round cells and new-formation tissue, whilst those which persisted stained badly and presented a shrunken, wasted appearance, and in most instances a disappearance of their nuclei. These changes were most obvious in the ganglion found on the trunk of the vagus nerve close to its exit from the cranium and required no special mode of preparation to demonstrate them. The lantern slides and specimens exhibited represented sections of these ganglia taken from rabbits inoculated subdurally with the stock virus of the Jenner Institute. Van Gehuchten stated that the appearances described were found in all the rabid animals examined, being best marked in dogs, less pronounced in man, and least evident in rabbits, but highly characteristic in all. They were not found in animals not suffering from rabies.

Dr. S. G. HÉDIN and Mr. S. ROWLAND made a preliminary communication on the Presence of a Proteolytic Enzyme in the Spleen. The material on which the investigations had been made consisted (in the main) of the intracellular contents of the cells of the organs. (This material had been prepared by Mr. Rowland with the aid of special mechanical appliances devised for the purpose, whilst the search for enzymes had been conducted by Dr. Hédin.) In the first place it was tried whether such material would ferment its own albumin if allowed to stand at blood heat in the presence of an acid. The presence of proteolysis was sought for by determining the amount of nitrogen which was not precipitated by tannic acid before and after the expiration of certain times, the final products of the decomposition of albumin not being precipitated by tannic acid. In the case of the spleen it was found that this nitrogen regularly increased as time advanced. This increase was slight in alkaline and neutral solutions, but considerable in slightly acid solutions. The spleen juice itself always had an acid reaction and sometimes it was so strongly acid that the addition of an acid did not increase the acid reaction. Control experiments were made so as to ascertain whether the boiled juice digested with an acid gave any increase of the nitrogen not precipitable with tannic acid, and the same result was always found in the boiled and digested juice as with the fresh juice. A table of the results was exhibited showing the quantities of nitrogen before and after digestion in presence of acetic acid, sodium carbonate, lactic acid, hydrochloric acid, neutralised solutions, and also showing the results at various times (16, 22, 40, and 90 hours). The researches demonstrated that the albumin of the spleen juice was digested and that this action took place especially in an acid solution; and since there was no difference in the amount of albumin in the boiled and the unboiled juice it was concluded that the changes were due to an enzyme which acted most readily in acid solution. The effect of spleen juice on added albumins was also investigated. Thus a boiled portion of spleen juice was added to a portion that had not been boiled, and the altered amount of albumin was found to be larger than without the addition of the boiled portion. The effect was the same if some blood was added to the spleen juice. The most striking results ensued from the action of the spleen juice on fibrin. If 200 grammes of wet fibrin were added to 450 grammes of spleen juice it was practically all dissolved in about 16 hours. In this case the amount of nitrogen not precipitable by tannic acid without and with the added fibrin was found to be in the former case 34 cubic centimetres and in the latter 57·4 cubic centimetres. It was concluded from the various experiments made that the spleen contained an active proteolytic enzyme which acted most readily in acid solutions, and this substance Dr. Hédin and Mr. Rowland proposed to designate "lienase."

Dr. A. HARDIN made a communication on the Fermentation of Glucose by Sanarelli's Bacillus Icteroides. The culture employed was received from Kral and showed all the usual cultural tests of this organism. The organism was cultivated in a 1 per cent. solution of Witte's peptone, containing 20 grains of pure glucose and 10 grains of chalk, under anaerobic conditions, in an atmosphere of nitrogen. At the end of four weeks the evolution of gas had ceased and the products were examined and found to be the following: lactic acid, 49·2 per cent.; acetic acid, 15·9 per cent.; alcohol, 10·8 per cent.; succinic acid, 3·3 per cent.; formic acid, 1·5 per cent.; and carbon dioxide, 16·0 per cent. The lactic acid was lævo-rotatory and consisted of about 10 per cent. of inactive and 90 per cent of active acid. The gas consisted of carbonic acid and hydrogen. After allowing for the volume of carbonic acid produced by the action of acids on the chalk it was found that the carbonic acid and hydrogen had been formed from the sugar very nearly in the ratio 1 : 1. These products were precisely similar both qualitatively and quantitatively to those formed by the bacillus coli communis under the same conditions. This was in agreement with the observations of Cushing on the gas and acid production of this organism.

Dr. R. T. HEWLETT made a communication on the Nature of the Indol-reacting Substance present in Diphtheria Cultures. He had, he said, at a previous meeting of the Pathological Society of London drawn attention to the fact that cultures of the diphtheria and of the pseudo-diphtheria (Hoffmann) bacillus yielded a pink colour when treated with a nitrite and acid which resembled the colour given when traces of indol were present. The substance, however, was not indol, as it was non-volatile. Further experiments had been made to isolate and determine the nature of this substance, and these had proved it to be skatolcarboxylic acid. This compound was non-volatile, easily soluble in alcohol and ether, and feebly so in water. With nitric acid and a nitrite a reddish pigment was formed which was freely soluble in acetic ether. With hydrochloric acid and perchloride of iron it gave a cherry-red colour which was taken up by amyl alcohol. With hydrochloric acid and chloride of lime it gave a reddish colour, this pigment being likewise soluble in amyl alcohol. The substance isolated from the diphtheria cultures conformed to all these reactions. The fact that both the diphtheria bacillus and the pseudo-diphtheria bacillus formed skatolcarboxylic acid might be regarded as additional evidence of the relationship between these two organisms.

Dr. HEWLETT also made a communication (illustrated by cultures and specimens) on the Probable Identity of Achalme's Bacillus of Acute Rheumatism and the Bacillus Enteritidis Sporogenes of Klein. On one occasion he (Dr. Hewlett) had isolated from a case of acute rheumatism a bacillus which conformed in all particulars to that described by Achalme.[1] He was also struck with the resemblance between the latter organism and the bacillus enteritidis sporogenes of Klein. Having been courteously furnished with cultures of Achalme's bacillus by M. Achalme himself Dr. Hewlett had compared the two organisms and was unable to distinguish any marked difference between them. Both were anaerobic, anthrax-like bacilli, curdling milk in a peculiar way, forming spores only under certain but identical conditions (namely, on gelatin, but not on agar), forming gas and liquefying gelatin, and having a marked and distinctive pathogenic action upon guinea-pigs. Morphologically, culturally, and in pathogenic action the two organisms seemed to him (Dr. Hewlett) to be identical.

[1] Annales de l'Institut Pasteur, xi., 1897, p. 845.

MEDICO-PSYCHOLOGICAL ASSOCIATION.

Proposed Epileptic Colony.—Murder the Result of Pure Homicidal Impulse.—Death of the late Queen.—The Chemistry of Nerve Degeneration.—Morbid Changes in Dementia

A GENERAL meeting of the members of this association was held on Feb. 14th. at the London County Asylum, Claybury, Essex, Dr. FLETCHER BEACH, the President, being in the chair.

Mr. W. C. CLIFFORD SMITH, engineer to the Asylums Committee of the London County Council, read a paper on, and exhibited the plans of, the Proposed Epileptic Colony to be Built on the Horton Estate, Epsom, the building having been designed by Mr. Clifford Smith on the lines suggested by Mr. G. J. Cooper, L.C.C., in his report upon "A Scheme for the Establishment of an Epileptic Colony."—In the discussion which ensued Dr. J. WIGLESWORTH described a visit which he paid to Germany last spring to inquire into the segregation treatment of the insane there. As a result of the visit he recommended the adoption of the system for a Lancashire asylum which was then being projected. The present suggestion was that villas should be for both epileptics and imbeciles. The villa system had attained great development in Germany, particularly in the newer asylums, where a colony was established in connexion with the main buildings, or the asylum consisted entirely of such villas, accommodating from 40 to 50 patients each. He was much impressed by the comfort and general home-like surroundings, and he thought future developments should be on those lines in preference to the colossal buildings of which those at Claybury formed such a magnificent example. Much credit was due to Mr. Clifford Smith for his efforts, as he was one of the pioneers of the movement in this country. He understood it was suggested that there should be a large central dining hall, to which the residents of the surrounding villas should resort for their meals, or at least the hot ones. He (Dr. Wiglesworth) was in favour of the opposite plan—namely, that the meals should be served in the separate residences—then the conditions came much nearer those of home life. In Germany the dinners were sent to the residences on wagons from a central cooking establishment, and they succeeded in getting all the meals served in a reasonable time. The food was practically surrounded by a hot-water jacket. With regard to heating, in many of the German asylums there was a small simple boiler for hot water, in addition to open fireplaces, and he thought that on the whole such a plan was the best for warming the dormitories at night. He thought that the patients in any one villa should number from 36 to 40. For these there should be four attendants, and for the supervision of the attendants he advocated the tell-tale clock system.—Dr. A. R. URQUHART agreed that there should be four attendants to each villa, and that the number of inmates of any one villa should not exceed 40. With reference to the question of heating, in two projected asylums for Edinburgh and Aberdeen it was intended to supply steam from a central boiler. That plan had been found practicable for an American town of 30,000 inhabitants which he had visited, where the houses of the better classes were provided with steam from a central station, at prices which varied with the house rentals. The extreme distance to which the steam was supplied was about two miles. For Aberdeen he suggested a saddle boiler, like an ordinary conservatory boiler, for each villa, to be regulated by the scullery attendant. In his own house some years ago he had his kitchen boiler connected with a system of radiators, and had now the satisfaction of knowing that the heat was not passing up the chimney but was being distributed to various parts of the house. Recently a paper was read before the Institution of Civil Engineers by Mr. Roberton, in which he advocated a considerable extension of the system, claiming that by means of two specially-designed zig-zag boilers in the kitchen any ordinary mansion could be well heated. Reference had been made to the German method of conveying the meals in specially constructed vessels, but what kind of meals were they? The last such meal he saw conveyed round consisted of vegetable soup with a herring floating in it. Such meals would scarcely do for English institutions. In Hartford, Conn., U.S.A., where there were a number of villas for people of the higher social grades, dinners were sent round by means of an underground channel, and with considerable success.—Mr. H. F. HAYES NEWINGTON thought the villa system was applicable to other than epileptic patients. With regard to the food, the right object to aim at was the approximation of the conditions to those in home life, but he hoped that a more suitable name would be found for the buildings of the colony than "villa." As to heating the institution, in a new asylum in Sussex the intention was to heat the villas by means of open fire-places as far as possible, though in an epileptic colony there was the difficulty that patients might fall into the fire. In the asylum to which he had referred provision had been made underneath for a heating chamber for use if necessary. As to the arrangements for supplying food, it was decidedly institutional and not conducive to domesticity to send the patients to take their meals together in a large

dining-hall. That, however, could be overcome by supplying the dinners to the villas in carts from a central establishment, as was to be done in Glamorgan. In that county three villas were being built, and in respect of one of them the cart system would be adopted. For the other two there would be a separate kitchen in each, and they hoped to be able to get a good housewife who would be able to see to the necessities of the patients and who could so regulate the food as to effect a saving.—Dr. ROBERT JONES (Claybury) pointed out that the plans exhibited by Mr. Clifford Smith did not provide for a chapel for the patients. The epileptic was the only person who possessed the perfervidity of temperament which made him feel most comfortable in chapel. Would it not therefore be better that the patient should have his *summun bonum*, a chapel, the place which was to him a veritable haven of rest?—Mr. CLIFFORD SMITH briefly replied. He could only look at the religious feeling of the patient from an engineering standpoint. If the epileptic required a chapel the engineer would say, let him have it. The question of heating was a vexed one, and it had been his lot to deal with every type of heating which had been devised—high-pressure steam, low-pressure steam, high-pressure water, low-pressure water, and electric heating. Many grievous ills were laid by some at the entrance to the door of the system of heating, such as tuberculosis and colitis. By carrying out the scheme he had outlined they could have a system of heating such as was common in the houses of the people, and they could have the opportunity of ascertaining whether the same evils accrued from that system as were alleged against the other methods. As to food, it had been admitted that it was good to go out to dinner every day, and that was what the epileptics would do under that scheme. He was not quite sure what arrangements could be made for the staff, but if they would only walk to the central dining-hall they could be sure of a substantial cooked meal.

Dr. WIGLESWORTH read a paper entitled a Case of Murder the Result of Pure Homicidal Impulse. The murder was committed in a Lancashire asylum by a female inmate in obedience to a sudden homicidal impulse, the patient never having shown while there any such tendency. Subsequent investigation, however, showed that her behaviour at other institutions might have been so construed had the full facts been known.—Dr. L. A. WEATHERLY related the circumstances of a murder near Bristol committed by a lad, aged 17 years, the victim being a farmer who gave the lad a "lift" in his cart towards his home and was stabbed to death while driving. It was shown that the demeanour and character of the lad had changed from the time he received an injury to his kidney in a tram accident. Dr. Weatherley proved eccentric behaviour from that date, but the prison surgeon said he found nothing mentally abnormal. The result was that the boy was adjudged guilty. On strong representations being made on the subject the sentence was altered, but only to one of penal servitude.—Dr. BOYLE spoke of a murder case in Nottingham in which he would have to give evidence. The alleged perpetrator of the crime denied all knowledge of the act, insisting that he could not remember anything beyond a certain time, but he gave a very cogent history of his doings up to that time. The first thing he said he remembered afterwards was the attempt of the police surgeon to "stomach-pump" him. There was no family history of epilepsy; the father died from apoplexy, and one sister died insane. The patient himself had sunstroke some years ago. He asked whether it was possible for a non-epileptic to lose consciousness for several hours, to commit a crime during the period, and then to regain normal mental control. —Dr. R. H. NOOTT suggested that in a few days the amnesia might pass off and then careful questioning might bring out a motive for the crime. — Dr. MORRISON related the case of a man with occasional homicidal impulse who had managed to conceal it owing to his fear of being placed in an asylum, but one day on being found in a typical epileptiform attack he was closely questioned, and the facts were then admitted. He appeared to have stuck pins all over his body during unconsciousness, and to have repeatedly stabbed the site of an inguinal hernia. He suggested that Dr. Boyle's case might be one of *petit mal*.—Dr. ROBERT JONES said that the patient who formed the subject of Dr. Wiglesworth's paper was twice in Claybury Asylum, once for six weeks and again for six months, but never showed any homicidal tendency. On the certificate for the second admission, however, it was stated that in another asylum she had said that she would "kill somebody."—Dr. WIGLESWORTH briefly replied. In regard to Dr. Weatherley's case he was not surprised at the decision of the jury seeing that the medical experts differed. He was inclined to regard Dr. Boyle's case as one of unconscious cerebration. He quite believed there were such cases.

The PRESIDENT, in opening the proceedings of the Pathological Section, referred in suitable terms to the nation's loss in the death of the late Queen, and a resolution of sympathy and condolence with the King was approved and ordered to be forwarded to the proper quarter.

Dr. W. D. HALLIBURTON, F.R.S., gave an address (in the absence, through illness, of Dr. F. W. MOTT, F.R.S., pathologist to the asylum) on the Chemistry of Nerve Degeneration. The address was illustrated by numerous lantern slides.

Dr. JOSEPH BOLTON read a paper, supported by many lantern views, on Morbid Changes in Dementia.—In the discussion which followed the PRESIDENT, Dr. WIGLESWORTH, and Dr. ROBERT JONES joined.—Dr. BOLTON'S reply closed the proceedings.

WEST LONDON MEDICO CHIRURGICAL SOCIETY.—A clinical meeting of the above society was held at the society's rooms on March 1st, Dr. F. F. Schacht, the President, being in the chair.—Mr. G. L. Cheatle showed a boy on whom he had performed a new operation for Prominent Auricle. This operation was based on the principle that the antihelix was the part in excess causing the deformity, and the tissues were transfixed, a large, somewhat irregular, crescentic piece of the antihelix was removed, as was a small portion of the lower border of the helix. The result was very satisfactory, although the ears were not quite symmetrical, but the experience gained from this case would enable the operation to be performed more successfully in the future.—Dr. J. Barry Ball, Dr. Seymour Taylor, and Dr. Peyton discussed the case.—Dr. Ball read the report of the Microscopic Investigation of a Small Growth, probably an Endothelioma, removed from inside the ala nasi of a young woman.—Dr. Ball read notes of a case of Tuberculosis of the Skin and Mucous Membranes. The patient was shown at a meeting of the society last June. She was a woman, 22 years of age, who had extensive lesions of the skin, as well as of the gums, the palate, the pharynx, and the larynx. There was some difference of opinion at the time, but it was generally admitted that the condition resembled lupus. However, some maintained that the skin lesions were most probably syphilitic, and it was suggested that a thorough mercurial course would be beneficial. The patient, was, therefore, treated with mercury internally and as an inunction. During this period the condition of the mucous membranes improved, but there was no change in the skin lesions. The mercury was then given up and the lesions were treated by excision, cautery, or curetting. She rapidly improved and was on the point of leaving the hospital when she was seized with an attack of cerebral meningitis from which she died. The diagnosis of meningitis was confirmed by post-mortem examination, and Dr. Ball had no doubt that all the lesions from which she suffered were tuberculous in character.—Mr. Keetley and Dr. H. G. O. Wharry made some remarks.—Dr. Seymour Taylor showed a case of atrophy of the short muscles of the right hand in a case of tabes dorsalis. The patient had well-developed tabes, but in addition he had marked wasting of the short muscles of the right hand, which showed all the electrical reactions of degeneration. The left hand was not attacked. This, Dr. Taylor argued, proved that the patient had some local involvement of the cells in the anterior cornua of the cord supplying that particular group of muscles, this sclerosis having spread from the posterior external columns of the same side; it could not be peripheral in origin, as sensation had not been lost. He had had syphilis and had been treated for it, but with no amelioration of the symptoms.—Dr. A. Whitfield showed a male patient, aged 28 years, suffering from Neuro-fibromatosis or von Recklinghausen's disease. He was well up to nine years of age, after which these tumours appeared and gradually increased in number. They varied in size from that of a pin's head to that of a large hazel nut, were soft, normal or reddish brown in colour, adherent to the skin, and were most numerous on the trunk, then on the arms;

there were but a few on the legs. He also had a large semi-fluid swelling of the left cheek. There were no signs of myxœdema, but he had a very small thyroid. Microscopically a section of one of the tumours showed a few nerve fibres. The tumours were not painful or tender.—Mr. A. S. Grant showed (for Dr. P. S. Abraham): (1) A case of Pityriasis Rosea of Gibert; and (2) a case of Leucoderma and Melanoderma, with pruritic eczema from scabies, acne, and tertiary ulcers on the legs, the interest of the case consisting in the multiplicity of skin troubles.—Mr. Bidwell showed a case of Carcinoma of the Transverse Colon treated by excision, followed by ileo-sigmoidostomy. The patient was a man, aged 50 years, who had had attacks of abdominal pains for three years. When examined he had a long sausage-shaped tumour of some three or four inches in the left hypochondriac region. There was no intestinal obstruction. The patient refused operation, but about three months later an abscess burst near the umbilicus, another near the left inguinal region, and a third beneath the ribs on the left side. They continued to discharge pus and fæcal matter. On Dec. 20th, 1900, he was operated upon; the sinuses were slit up and scraped; the sinus under the ribs was followed up and it led to a perforation in the transverse colon, beyond which was a large growth. This was drawn outside the wound and the mesentery was tied in segments. A ligature was placed around the colon, one inch above and below the growths, and tied tightly. The abdominal wound was closed as much as possible. Three days afterwards the growth was excised, the ligature around the bowel was cut through, and an artificial anus was established. His general condition rapidly improved and on Jan. 20th the abdomen was reopened and the lower end of the ileum was united to the sigmoid by a lateral anastomosis. Three days afterwards the patient had a normal motion. As fæces still passed as well by the artificial anus the abdomen was reopened a fortnight later and the portion of intestine between the anastomosis and the cæcum was occluded. Since this the patient had put on flesh and had had a normal motion daily, although he had only about six inches of large intestine. Mr. Bidwell thought this method far safer than an end-to-end anastomosis, as there was not so great a strain on the sutures from semi-solid contents of the large intestine.—Dr. E. A. Saunders and Mr. McAdam Eccles discussed the case.

CHELSEA CLINICAL SOCIETY.—A meeting of this society was held on Feb. 19th, Dr. William Ewart, the President, being in the chair.—The President, in speaking of the Formaldehyde Treatment for Phthisis at Davos, described the remarkable improvement which had occurred in one of his patients whom he had injected on Jan. 12th, the first instance of a complete course of this treatment in the Alps. The case was that of a young man with acute asthenic catarrhal tuberculosis developing after the occurrence in Davos of a second profuse and almost fatal hæmoptysis. Before making the first injection the chances of recovery had appeared to him to be almost hopeless. Dr. F. Buol, who had continued the treatment, now reported the patient able to sit up and to take strong food, the temperature was normal instead of hectic, and the profuse, heavy, purulent expectoration had changed to a lighter muco-pus and its bulk diminished more than one third. The case illustrated the inadequacy of mere climatic treatment for the control of severe acute pulmonary tuberculosis, and the advantage which was likely to be gained when the formaldehyde treatment could be carried out with the additional help of the best climatic influences.—The President also exhibited two cases now under treatment at St. George's Hospital not quite so severe. Both had improved considerably; in one of them the bacilli were no longer found.—Mr. J. Foster Palmer made a further communication concerning an Organism passed from the Urethra of a Male Patient, which he had exhibited at a former meeting. Further investigation had shown the organism to be the larva of Homolomyia Scalaris, a small species of house fly. These larvæ, Mr. Palmer remarked, had been found in the rectum, but their presence in the urethra was exceedingly rare, not more than some 30 cases having been recorded since the time of Ambrose Paré, who was the first to describe the condition in 1582. Mr. Palmer's patient was present at the meeting, but showed no symptoms beyond some thickening in the penile portion of the urethra.—Mr. F. C. Abbott read a paper on Spinal Curvature and Physical Exercises. He dwelt on the inadequacy and failure of past lines of treatment and the disgrace that they should allow a mere temporary weakness to leave them such a legacy of cripples. Nor was the spinal deformity the only bad result; the effect on the chest was almost more important through leaving diminished resistance and increased liability to chest disease. Ordinary gymnasia run on purely hygienic lines were not sufficient and might do harm, as unless the exercises were well devised and controlled the stronger muscles must win and increase the deformity. After describing his own experience in the physical exercise department at St. Thomas's Hospital, and analysing the cases there treated, Mr. Abbott classified the cases according to prognosis into the three following groups. 1. Those in which the spine could be entirely straightened by the voluntary efforts of the patient alone. These cases rapidly improved, could take strong exercises from the first, and could easily be taught suitable "free standing" exercises for home use. 2. Those in which the deformity could not be obliterated by any effort on the patient's part alone, but could be made to disappear on suspension in a suitable position, and in bad cases by moulding as well. These were the cases true Swedish exercises did most for, while home exercises and mere free standing movements failed and might do harm During resistance movements well carried out even severe curves which neither the patient alone by her muscles nor an assistant alone by mere moulding or pressure could correct might be seen to straighten. Massage in these bad yet still hopeful cases was most useful. 3. Those in which permanent bony and ligamentous changes prevented any correction of the deformity. Forcible and strong exercises could only increase the deformity in these cases owing to the great advantage at which the muscles in the wrong side were acting. In these cases they should aim only at general muscular improvement and then fit a light spinal support. Mr. Abbott pointed out that the spinal muscles in these cases were not the only weak ones, but that weak abdominal muscles in such patients were often the cause of constipation, moveable kidney, &c., while a few patients were on the high road to general enteroptosis. For all these associated medical conditions and for increasing the chest capacity and range of movement the exercises produced really brilliant results. The importance of taking a correct fundamental position was insisted upon and the different strengths of any exercise according to the position taken were pointed out. The movements used were divided into (1) active, used as "free standing" movements without any help both as "changing position" and "fixed position" movements, without any "holdings"; (2) passive, used as general respiratory passive movements, as local passive movements, or massage, and as "mouldings," these last being of little importance except when combined with active movements; and (3) resistance, used both as "active-passive" and "passive-active." No mechanical contrivance could equal this graduated resistance of a skilled attendant, graduated as to time, strength, and point of application. Typical cases of the various deformities were shown, and the effects produced by the various main groups of exercises were demonstrated on them.—A discussion followed in which Dr. Charles Ewart, who described a method of treatment lately adopted in Paris and associated with the name of M. Lannelongue, Dr. J. Blumfeld, Mr. R. L. Norman, Mr. D. Vinrace, and Mr. R. Roche took part.—Dr. C. J. Harrison subsequently made a communication on the subject of Acute Rheumatism in Childhood.

WINDSOR AND DISTRICT MEDICAL SOCIETY.—The fourth meeting of the session was held on Feb. 20th at the Guildhall, Windsor, Mr. W. B. Holderness, J.P., the President, being in the chair.—The President opened the meeting with a few words touching the lamented death of Her late Majesty Queen Victoria, and embodied in a resolution, which was unanimously carried, the profound grief of the members of the society at the sad event and their sympathy with His Majesty King Edward VII.—Dr. W. F. Lloyd showed a specimen of an Ovum with Imperfect Development of the Decidua.—Mr. R. H. Paramore showed (by kind permission of Dr. W. A. Ellison) a specimen of Aortic Aneurysm from a man, aged 56 years. The aortic valves were rigid and heaped up with calcareous deposit.—Dr. E. B. Hulbert showed (by kind permission of Mr. J. R. Lunn of St. Marylebone Infirmary) the following: 1. An excised Bursa Patellæ showing old and recent inflammatory changes. 2. Specimens of Tuberculous Kidney and Bladder from a woman, aged 53 years. The right kidney was much atrophied and contained several caseous masses. 3. Two Photographs of a case of Elephantiasis of the Leg in a man, aged 70 years, formerly resident in the tropics.—

Dr. C. R. Elgood showed a specimen of a Dissecting Aneurysm of the Aorta from a gouty painter, aged 49 years. The aortic valves were sound. He also showed, (1) a case of Muscular Development after Sandow's Exercises; (2) a case of Ulceration of the Epiglottis; and (3) a woman whose Urine contained an abundant Deposit of Fat.—The adjourned discussion upon the Effect of Severe Athletic Exercise in the Young was resumed by Dr. M. S. Pembrey who said that the dyspnœa of exertion was not due to an accumulation of carbonic acid gas in the blood but was of cardiac origin and an effect of compensation. Rapid respiration assisted the flow of blood from the right to the left side of the heart. Alluding to "second wind," he believed that this was entirely a question of compensation between the heart and the respiratory pump. An increase of blood-pressure occurred during exercise—often reaching 40 millimetres of mercury. As evidence of heart strain caused by exercise taken by boys out of training he instanced two cases of dilatation of the right side of the heart after a hard bicycle ride. A rise of temperature also occurred during exercise; this was always apparent when the temperature was taken in the rectum or urine instead of in the mouth. The rectal temperature during exercise rose to 100° or 101° F., without any bad result. After severe exercise, and especially if the subject was unable to compensate, the rise was higher. In his opinion there was no doubt that severe muscular exercise was bad for the young, for there was often no time for efficient compensation. It was for this reason that training should be gradual and was so necessary a preliminary to a hard race.—Sir W. H. Broadbent agreed that the dyspnœa of exertion was cardiac. He had never accepted the chemical theory, for the worst dyspnœa occurred before there was time for the blood to become charged with carbonic acid gas. With regard to "second wind," the first effects of dyspnœa arose from the too rapid forcing of blood into the right heart from pressure on the veins by the muscles, the respiratory pump being unable to effect its removal sufficiently rapidly. The second wind came when the right heart had unloaded and redistribution of blood had taken place, this being helped by relaxation of the arterioles. Alluding to cardiac overstrain he laid stress on the importance of high arterial tension, and alluding to the great differences found in arterial tension among children he said that he had seen the worst dilatation of the left ventricle in high tension cases. In everyone there existed a line beyond which exercise was injurious, and as indications when that line had been reached he mentioned that after the exertion the dyspnœa continued, the heart failed to subside, and sleep was lost. He had seen a good deal of damage done to the heart mostly when exercise had been taken by persons when they were in bad health. He thought that when a murmur was traceable to an attack of rheumatic fever then exercises might be properly curtailed, but this did not hold in the case of a murmur in the pulmonary area, which disappeared on taking a deep breath and was due to an inadequate cushion of lung over the conus arteriosus. He had also learnt to disregard the importance of a tricuspid murmur which was audible in the erect but not in the supine position.—Surgeon-General Cayley said that among the more immediate effects of severe climbing exercise in the mountainous regions of hot countries he had noticed a temporary indisposition occurring in those fresh to the work. It soon, however, passed away, and was, he considered, probably the effect of a feverish condition. So, too, the "heat fever" observed in hot climates and which affected new-comers only. This, he thought, was induced by severe exercise and exposure to heat in those unaccustomed to the climate. In his experience he had found that irritable, nervous hearts were apt to fail sooner than those with more steady action.—The discussion was continued by Mr. H. E. Bruce Porter and Mr. E. W. Adams.—Dr. E. S. Norris briefly replied.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 1st, Dr. Gordon Black, the President, being in the chair.—Dr. A. Mantle (Halifax) read a paper entitled "Remarks upon Some Forms of Vaso-motor Disturbances, including Raynaud's Disease." He said that he wished the paper to be understood as a preliminary contribution to a subject which he had been investigating at the Royal Halifax Infirmary. After recalling the ordinary symptoms observable in the extremities in Raynaud's disease, which, he remarked, were frequently overlooked except when the extreme condition of gangrene was developing or was present, he dwelt upon the changes occurring in the brain which he believed to be of vaso-motor origin. Migraine was a common symptom in a large proportion of the cases. In a considerable number epileptic attacks occurred—a single attack or more at varying intervals. In the insane as well as in the epileptic vaso-motor disturbances of the circulation were observed. Palpitation was a very common symptom and angina vaso-motoria was cited as seen occasionally. Arterial tension in the majority of cases was minus and a varying degree of dilatation of the heart was noticeable. Dr. Mantle had only seen one case of hæmoglobinuria, and this was in a patient with high arterial tension who was a great meat-eater. He thought it comparatively rare and, as in hæmorrhage from the nose, uterus, or bowel, that it was associated with a plus blood-pressure These patients usually expressed themselves as feeling better after the loss of blood. Gastric cases were referred to in which food excited a feeling of pain and coldness of the extremities and body. These cases were not seen in the anæmic condition in which gastric disturbance was most frequent. Pains of a colicky character of varying duration occurring in the abdomen were also referred to. There was always a sad and anxious expression of countenance in all of these cases of vaso-motor disturbance. In some, particularly in the female sex, he had observed an enlargement of the thyroid gland, accompanied or not with proptosis, generally bilateral but sometimes unilateral. In others proptosis existed alone. These cases were quite distinct from Graves's disease and had no tachycardia and as far as he knew were undescribed. The symptoms were suggestive of a thyroid origin. In many there were changes in the nails of the fingers which were not only friable and malformed, but might have white or darker scars on them. The skin was sometimes bronzed or the condition of scleroderma was noticeable. Ophthalmoscopically in the cold stage he had observed contraction of the retinal arteries with dilatation of the veins. Dr. Samuel Lodge had noticed changes in the field of vision in several of his cases. Shock by lightning and, in the case of a soldier returned from South Africa, sunstroke had been the exciting cause in two of his cases. With the aid of lantern slides Dr. Mantle showed the chief points which he wished to call attention to in his cases and stated that he found suprarenal extract most helpful in their treatment, probably by raising the blood-pressure.—The President, Dr. Gordon Sharp, Dr. E. W. Selby, Dr. J. Kerr, Dr. T. W. Griffith, and Dr. H. J. Campbell joined in the discussion and Dr. Mantle replied.—Dr. W. Edgecombe (Harrogate) described a case of Secondary Anæmia due to repeated slight loss of blood from the nose, continuing over a period of 12 years, which finally presented all the symptoms of pernicious anæmia.—The President, Dr. S. Lodge, jun., Dr. A. G. Barrs, and Dr. E. F. Trevelyan took part in the discussion.—Mr. H. Littlewood showed a patient whose thigh had been amputated under an intra-spinal injection of cocaine.—Mr. B. G. A. Moynihan showed a patient after cholecystectomy for fistula between the cystic duct and the duodenum, the result of a calculus impacted in the termination of the cystic duct.—Other cases and specimens were shown by Dr. J. E. Richards (Huddersfield), Dr. T. Churton, Dr. A. Christy Wilson (Doncaster), Dr. Godfrey Carter (Sheffield), Dr. William Fearnley (Harrogate), Dr. J. Allan, Mr. A. L. Whitehead, Mr. E. Ward, Dr. J. B. Hellier, Dr. T. W. Griffith, Mr. Lawford Knaggs, and Dr. E. F. Trevelyan.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on Feb. 15th at Liverpool, Dr. T. B. Grimsdale, the President, being in the chair.—Dr. J. E. Gemmell (Liverpool) showed a Solid Ovarian Tumour weighing three and a half pounds which he had removed by abdominal section from a woman, aged 30 years. The patient had ascites and symptoms of twisted pedicle. The tumour reached as high as the umbilicus and a sense of ballottement was elicited on vaginal examination. The tumour was solid, hard, yet boggy in consistence, smooth on the surface and furrowed, with large veins coursing over it. On section the upper portion of the growth was firm, hard, and typically fibroid in character, the fibrous tissue being arranged in the usual concentric fashion; in other portions the tumour was softer and injected with blood due to the strangulation of the twisted pedicle. The microscopical sections of the tumour showed it to be a fibroma. Two small fibroids were also present in the uterus and were enucleated. The left ovary was normal.—Dr. Gemmell also showed a specimen of Bilateral Surface

Papilloma. The growths covered the ovaries and were cauliflower-like in appearance, of a salmon pink colour, mainly pediculated with thin slender pedicles, a few only being sessile. Microscopically the papillary projections consisted of a stroma with numerous cells and blood-vessels covered with columnar epithelium. The growths were removed by abdominal section from a patient, aged 32 years. There was no ascites and no secondary deposits existed.—Mr. Rushton Parker (Liverpool) showed a large Fibro-cystic Tumour of the Uterus weighing 23 pounds, removed by abdominal section from a woman, aged 43 years. A serous cyst of doubtful origin was also found in the left side of the pelvis. The patient progressed favourably until the ninth day when she developed tetanus, from which she died on the following day. Anti-tetanic serum was used in vain.—Dr. W. Walter (Manchester) showed a Uterus removed by vaginal hysterectomy from a patient, aged 45 years, for an epithelioma of the posterior cervical lip.—Dr. Arthur Wallace (Liverpool) related a case of Perforating Laceration of the Cervix Uteri. The patient was a young married woman with a history of missed abortion. The cervix was of unusual length and lay curled up under the bulging anterior wall of the corpus uteri. The cervix was drawn into its proper axis with a vulsellum and a laminaria tent was inserted. Some hours afterwards the tent was expelled and following it a carneous mole, the passage of the latter being accompanied with unusual pain. On examination next day the cervix was found to be undilated, but a large opening was found behind the os large enough to admit two fingers. The opening extended from the os internum through the posterior cervical wall into the vagina, leaving a portion of normal cervix both behind and in front of the opening. The uterus was still acutely anteflexed. Dr. Wallace suggested that the laceration was probably due to the resistance offered to the passage of the mole by the long acutely flexed cervix. The peritoneum was not involved.—Mr. R. Favell (Sheffield) reported a case of Cæsarean Section for Obstruction of Labour by a Dermoid Ovarian Tumour. After the uterine wound was sutured the tumour was raised from the pelvis and removed. The patient made an excellent recovery.—Dr. H. Briggs (Liverpool) exhibited a specimen of Sarcoma of the Uterus.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 19th, Mr. F. Farrow, the President, being in the chair.—Dr. W. H. Horrocks read notes on a case of Stiff Knee-joint treated by Local Hot-air Baths. The case was one in which treatment of a fractured thigh had been followed by great limitation of the movements of the right knee. The Tallerman apparatus was used and the patient received in all about 50 baths. The result was good 18 months after the conclusion of the treatment. Dr. Horrocks remarked that the temperature of the bath should be raised slowly or blistering of the skin might result; also that the general condition of the patient should be carefully watched as a rise of the temperature of the blood and faintness might supervene.—Dr. R. H. Crowley made remarks on six cases of Pernicious Anæmia and showed a tabulated report of the examination of the blood in each case. In many cases the illness commenced suddenly, signs of gastro-intestinal irritation being frequently present. One of the patients was an apparently healthy farm-labourer who was seized with sudden pallor and shortness of breath. Under treatment he improved and was able to resume his work. A second attack came on and ended in temporary recovery. A third attack was accompanied by extensive dropsy and extreme weakness, but when the man seemed to be at the point of death he suddenly began to improve and in the end was discharged from hospital. In all cases there was diminution of the count of both red and white cells. The hæmoglobin percentage was not reduced proportionately to the reduction of the red cells. Diagnostic points were: (1) the presence of large nucleated red cells; and (2) a count of red cells as low as 1,000,000 per cubic millimetre with no proportionate increase of white cells. Owing to the frequent presence of gastro-intestinal symptoms the disease had been regarded by some as due to toxic absorption from the digestive tract, but there was not conclusive evidence of this. The empirical treatment with arsenic seemed sometimes to give favourable results, but owing to the sudden variations in the course of the disease it was exceedingly difficult to estimate the effect of any remedy.—Dr. H. J. Campbell alluded to a case in which an impending fatal termination was apparently averted by the administration of cannabis indica.—Dr. S. Johnston spoke of a case in which the inhalation of oxygen had been followed by temporary improvement, the patient dying from a relapse several weeks later.—Dr. J. B. Hall showed a patient from whom the Sigmoid Flexure and Upper Part of the Rectum had been Removed for Intussusception.—Other patients and specimens were shown by Dr. James Kerr, Dr. Mason, Dr. F. W. Eurich, Dr. Crowley, Dr. S. Lodge, jun., Mr. Ling, Mr. C. F. M. Althorp, Dr. B. H. Slater, and Dr. T. Jason Wood.

SOCIETY OF ANÆSTHETISTS.—A meeting of this society was held on Feb. 15th, Dr. J. F. W. Silk, the President, being in the chair.—The President explained that the meeting was held in lieu of the ordinary meeting on Feb. 1st, which had been postponed on account of the lamented death of Her Majesty the late Queen.—Mr. George Eastes then read his paper on the Conclusions of the Anæsthetics Committee of the British Medical Association.[1] In the discussion which followed Dr. C. Childs remarked that, although he had not taken any active part in the work of the committee for the last five years, he still maintained an interest in the subject and knew what a tremendous undertaking an investigation of the sort involved. He then gave a short account of the inception and formation of the committee and spoke in admiration of their self-denial and energy. He thought that their labours had been brought to a triumphant conclusion and that certain important questions had been very definitely answered.—Dr. Dudley Buxton pointed out that in his paper at Bournemouth, in consequence of which the committee had been originally appointed, he had insisted upon the importance of attacking the subject from the clinical side, and that it was with this object that the investigation had been commenced. He thought that similar investigations should be made in every hospital and public institution. Although much of the time spent upon the commission had been lost, this was inevitable, as they had to feel their way; nevertheless, the results arrived at were of great value, as giving definite evidence, supported by statistics, of certain facts which had hitherto been only matters of surmise or probability. A great feature of the report was the abstracts of the cases upon which the conclusions of the committee were based. He thought that in one or two points the conclusions required amplification and modification, as, for instance, in respect to imperfect or incomplete anæsthesia and with regard to the after occurrence of bronchitis.—The President regretted that such a comparatively small number of "mixtures" had come under the notice of the committee, and he did not think that the conclusions drawn from such small numbers could be looked upon as reliable. He thought, too, that it was a pity that greater stress had not been laid upon the importance of carefully selecting the anæsthetic in accordance with individual requirements, and he quite agreed with Dr. Buxton that inappropriate selection accounted for a good many of the cases of bronchitis.—Mr. Eastes replied.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—A meeting of this society was held on Feb. 27th, Dr. A. J. Harrison, the President, being in the chair.—Dr. P. S. Abraham showed a case of Lupus Erythematosus in a young woman, both cheeks and the backs of the finger being affected. When first seen the patches on the cheeks were vesicating.—Mr. G. Pernet called attention to the fact that there was a history of phthisis in the patient's family, as was so often found to be the case in lupus erythematosus.—Dr. Abraham also showed a case of Raynaud's Disease in a middle-aged woman affecting the tips of the fingers and the toes.—Dr. R. L. Bowles remarked that the patient's heart was large, probably dilated, and advised that treatment should be directed to improving the nervous system.—Mr. T. J. Hitchins said that, acting on the advice of Mr. Jonathan Hutchinson, he had treated a case of Raynaud's disease of nine years' duration which had been under his care with quinine and opium with very satisfactory results.—Mr. Pernet recommended nitro-glycerine in these cases.—The President showed (1) a Photograph of a Bromide Eruption which occurred in a single patch on the site of an old injury from a kick on the leg of a boy; and (2) a drawing of a Tertiary Syphilitic Eruption on the leg

[1] Brit. Med. Jour., Feb. 23rd, 1901.

of an old man.—Mr. Pernet showed several Microscopical Specimens.

ROYAL ACADEMY OF MEDICINE IN IRELAND.—A meeting of the Section of Obstetrics was held on Feb. 8th, Dr. A. V. Macan, the President, being in the chair.—Dr. Alfred Smith showed Two Large Fibro-myomatous Uteri which he had removed for bladder symptoms. They were interesting from the fact that both tubes and ovaries were at the right side of the pelvis close to the brim. The displacement was caused by the growth of the fibro-myoma.—Dr. Alfred Smith also showed an Ovarian Cyst of the size of a six months' pregnant uterus which he had removed from a patient, aged 34 years. It had become more or less solidified by repeated hæmorrhages into its spaces. There was a history of repeated attacks of abdominal pain which was at first mistaken for peritonitis. Extensive fresh adhesions were present; there was no torsion of the pedicle and microscopic sections did not reveal any peculiarity of structure which would explain the presence of so large a defibrinated clot and the extensive fresh hæmorrhage into the centre of the cyst.—The President said it would be interesting to know what was the cause of the hæmorrhage in this case. One of the largest tumours which he had removed was a fibroid in which hæmorrhage had occurred, forming an enormous cyst. He thought that the attacks of pain which Dr. Smith had referred to were due to the hæmorrhage.

Reviews and Notices of Books.

Practical Gynæcology: a Comprehensive Text-book for Physicians and Students. By E. E. MONTGOMERY, M.D. With 527 Illustrations. London: Rebman, Limited. 1901. Royal 8vo. Pp. 819. Price 25*s.* net.

THE author of this work begins his preface by saying that he will offer no apology for presenting another text-book on gynæcology. We are inclined to think that the time has almost come when it should be incumbent upon all writers of such works to do so, unless they can produce evidence of some originality in the book they have written or some urgent need for its production. Dr. Montgomery might reply that his text-book is original in its method of classification. No doubt this is so, and possibly the method has all the advantages claimed for it. The whole subject is considered under four main divisions—viz., Malformations, Inflammations, Deviations, and Tumours. Such a classification leads to some misuse of terms; for instance, the inclusion of injuries to the cervix and rupture of the perineum amongst malformations. The first part of the book gives a good and full account of the various methods of examination of the patient, and the anatomy and physiology of the pelvic organs. The author enters into considerable detail on the matter of operative procedures, no less than 19 different methods of repairing the perineum being described. Similar detail is shown in the section upon fistulæ, which gives a clear and well-illustrated recital of the operations that may be performed for such conditions. This is one of the best parts of the book. In considering vaginismus no clear distinction is drawn between cases of true vaginismus and dyspareunia, and yet the difference is important from the point of view of treatment. Under urethritis Dr. Montgomery writes of simple hyperæmia, an acute urethritis, a chronic interstitial urethritis, and a follicular urethritis. He enters very fully into the important question of treating these conditions, which too often receive but scant notice in books upon diseases of women. We cannot agree with the statement that "chronic metritis is responsible for a large proportion of the sofa and bath-chair population—the nervous, debilitated, dyspeptic women who wander from physician to physician or crowd the watering-places during the summer." We would rather have said that the causes of chronic metritis are responsible, not the disease itself, which is a matter of much less importance than the reader would be led to believe from the long list of symptoms which Dr. Montgomery mentions as caused by its presence. Under the treatment of inflammatory conditions of the tubes due stress is laid upon the great importance of complete rest and local treatment before resorting to operative interference. The balance is duly held between the abdominal and vaginal methods of operation and the author points out how impossible it is and always will be to treat all cases by the same route. The advice is given to leave a piece of the ovary whenever possible, even if it be necessary to remove both tubes; and this is undoubtedly the right treatment in suitable cases. A good section is that dealing with displacements of the uterus. It is well written and the importance of the accompanying conditions is insisted upon. In the operative treatment of backward displacement Alexander's operation is not recommended. The medicinal treatment of fibroid tumours of the uterus receives more space than is usually allotted to it in the modern text-book, which only too often is mainly concerned with various methods of removing these tumours. We should like to know upon what authority the author makes the statement that a benign (*sic*) cystic mole can give rise to metastases. The book cannot, as we have hinted, lay claim to any great originality, nor can it be regarded as an authoritative work upon gynæcology. It contains, however, a considerable amount of useful information and is well illustrated by a large number of good and well-reproduced drawings. It is surprising to find such errors as "Kuster" for Küstner, "Wydal" for Wyder, "Gärtner" for Gartner, "Pruritis," "Ascarus Scabii" for Acarus Scabiei, and statements such as that on page 553, where, speaking of the microscopic appearance of fibro-myomata of the uterus, the author says: "Occasionally between the muscle bundles are spores—lymph glands lined with endothelium."

Medical Monograph Series. Edited by DAVID WALSH, M.D. Edin. No. 1. Contagious Ophthalmia, Acute and Chronic. By SYDNEY STEPHENSON, Ophthalmic Surgeon to the Evelina Hospital and to the North-Eastern Hospital for Children. London: Baillière, Tindall, and Cox. 1900. Pp. 84. Price 2*s.* 6*d.* net.

THIS little work, which ought to have been noticed at an earlier date, is the first of a series of monographs intended to give to students and practitioners the best and most recent information on important subjects. Contagious ophthalmia is certainly one of these, and that affection could not have been entrusted to better hands than those of Mr. Sydney Stephenson, who has had quite exceptional opportunities of witnessing its outbreak, of seeing its results, and of devising means for preventing its spread in large schools. Mr. Stephenson points out that this particular disease accounts for 10 per cent. of all cases of blindness and yet is one of those that if early recognised and properly treated may be regarded as curable without the slightest impairment of vision; and, indeed, when the circumstances that lead to its occurrence are thoroughly appreciated it may, by the adoption of judicious measures, be almost invariably prevented. In describing the various forms of the disease grouped under the term "contagious ophthalmia" Mr. Stephenson distinguishes three parts of the conjunctiva—the palpebral and ocular regions and the retrotarsal folds—and gives directions for exposing the superior fold. A retractor, he remarks, is hardly requisite, since anybody possessed of a moderate amount of manual skill can bring it into view. He gives a woodcut of the retractor which, if really required, he uses, but it is badly shaded and looks as if it had a button at the end. Recently-ulcerated spots of the cornea and parts of that membrane where the epithelium is degenerated are stained a bright green colour, and the formula given is a useful one; it is,

fluorescin two parts, sodium carbonate three and a half parts, and distilled water 100 parts. Mr. Stephenson insists on the necessity for thorough asepsis, both on the part of the surgeon and of his instruments, and also that goggles should be worn whilst injections are used, and, further, that the tear passages should in all instances be carefully examined and cleansed. Bacteriological examination of the discharge is of great importance and utility. Full accounts are given of the methods of examination both by means of cover-glass preparations and by cultures. The basic stains recommended are methylene blue, carbol-fuchsin, and thionine blue, gentian, or methyl violet. A second cover-glass should always be treated by Gram's method. A plate is given showing some of the organisms met with. Mr. Stephenson considers that mucopurulent ophthalmia, purulent ophthalmia, granular ophthalmia, and membranous ophthalmia are all separate and distinct affections and have a different etiology, though doubtless they possess certain features in common. In regard to the frequency of gonorrhœal conjunctivitis in ophthalmia neonatorum it appears that amongst 446 cases of ophthalmia neonatorum gonococci were present in 72·83 per cent. The conditions known as granular ophthalmia and membranous, croupous, and diphtherial conjunctivitis are all described with much precision. The work, though small, contains a great deal of information and will be found very useful by the practitioner.

A Contribution to the Study of the Blood and Blood-pressure. By GEORGE OLIVER, M.D., F.R.C.P. Lond. London: H. K. Lewis. 8vo, pp. 276. Price 7*s.* 6*d.*

WE should like to see more works of this kind issue from the pens of other physiologists. The author tells us that the leisure afforded by the winters of the past 10 years has enabled him to study in an experimental way several physiological questions having a bearing on clinical medicine, and his professional life during the summer months has furnished opportunities of testing the physiological positions suggested by these inquiries and the practical efficiency of the instrumental methods of observation employed. This is precisely the method in which both physiology and medicine should be studied, and if it were systematically carried out each of these pursuits would be the gainer. The very first chapter shows that as soon as precise experiments are instituted unsuspected difficulties arise. In endeavouring to obtain standard colour tests it was found that no one substance or combination of substances in solution can correctly furnish a percentage series of gradations of hæmoglobin. Such a substance, for example, as carmine, which in dilute solution exactly corresponds with a definite proportion of hæmoglobin, does not present when dissolved in larger proportion precisely the same tint as a corresponding concentration of hæmoglobin.

Dr. Oliver has found Mr. Lovibond's system of graded glasses the best means of determining and comparing variations and degrees of colour. He takes as his standard the mean percentage of hæmoglobin present in healthy human blood containing 5,000,000 corpuscles per cubic millimetre. This amounts to 15·5 per cent. of hæmoglobin and is represented by 100 degrees, and each degree of the scale is equivalent to 0·155 per cent. of oxyhæmoglobin in the sample of blood under examination. Thus 100 degrees represent 15·5 per cent. of hæmoglobin, and determinations above or below that point require the addition or subtraction of 0·155 per cent. for each degree. The examination of the colour of the blood is best conducted by candlelight, daylight being too variable. The author gives a full description of the construction and mode of using his hæmoglobinometer and hæmocytometer. Amongst the many interesting results which Dr. Oliver obtained from his experiments the following may be mentioned. The blood furnished by different regions of the body does not always afford the same proportions of corpuscles and hæmoglobin. The blood furnished by the toes, for example, is much poorer than that afforded by the fingers, but after the application of massage no appreciable difference was observable. Gravity exerts considerable influence, so that the proportion of hæmoglobin is remarkably reduced in the toes and fingers by the *passive* elevation of the hand or foot for some minutes, but if the elevation be the result of muscular effort no diminution is observed. Local muscular action, however induced, causes an immediate, decisive, and proportionate rise in the corpuscles and in the hæmoglobin. Two series of 800 night and morning observations made at bed-time and on rising demonstrated that in the subjects of the experiments the daily work of the waking hours produces a fall in the hæmoglobin value of the corpuscles, and proved that rest and sleep not merely restore the hæmoglobin lost during the working portion of the day, but provide a slight excess beyond it. There is a fall in the chromocytes and hæmoglobin during digestion. Removal from the sea-level to altitudes of several thousand feet is rapidly followed by increase in the number of the red corpuscles, but descent to plains again is equally quickly followed by a diminution in their number. The author discusses at some length the possibilities and extent of error that may lie in these statements. Hot baths lower the percentage of the corpuscles; cold baths raise it. The latter part of the book is chiefly occupied with the consideration of blood-pressure and the circumstances which modify it. Dr. Oliver has devised a hæmodynamometer, with a pad containing fluid, of convenient size, by means of which the blood-pressure in the arteries and veins can be determined with much accuracy, and he has made a large number of observations in healthy subjects on the effects on the blood-pressure of various physiological conditions. Many of the sections have a direct clinical bearing, and we recommend this interesting and very original treatise to the notice of every thoughtful physician.

Maladies du Pharynx: Traité Médico-chirurgical. Par E. ESCAT. Préface par LUBET-BARBON. Paris: Carré et Naud. 1901. Pp. 586. With 150 Illustrations. Price 16 fr.

THIS is a very lengthy work, but notwithstanding this fact a careful study of Dr. Escat's work will certainly repay anyone who is sufficiently interested in the subject to commence it; after that there is no great temptation to put the book aside, for the style is easy and from an English point of view particularly readable. The author has given us a really admirable history of the present knowledge of the diseases of the pharynx and their treatment, but his knowledge of British contemporary work is scanty. Thus the admirable researches of Kelly on pharyngo-mycosis and of Paterson on the fossa triangularis, which may be given as casual examples of omission, are not mentioned. On the vexed question as to whether there is such a condition as rheumatic tonsillitis Dr. Escat exercises a nice discrimination and concludes with a summary of the views of Charrin, that there is no specific rheumatic microbe, but that any pathogenic organism may cause it; that the passage in the blood-stream of such microbes will not alone produce rheumatism, but needs the "acid dyscrasia" to develop rheumatism. The description of the ulcéro-membraneuse angine or angine diphthéroïde de Vincent is particularly useful. Vincent's original work was not noticed by workers in this country, so that we are glad to see prominence again given to it by Dr. Escat.

Although, speaking generally, the various diseases of the pharynx are well classified and described, occasionally the author errs on the side of subdivision. To subdivide, for example, quinsies according as to whether the pus forms anteriorly or posteriorly to the tonsil is to be too precise,

and when it is found that each of the tonsils requires a special detailed description for attacks of the same nature we doubt whether any useful purpose is served by such an arrangement of material.

Amongst the more interesting chapters are those dwelling on the vesicular affections of the pharynx; tumours of the base of the tongue are not so ably treated and there is one chapter that will, we hope, obtain less prominence in any future edition, that on varices of the base of the tongue. Like too many observers Dr. Escat looks upon hypertrophy of the lingual tonsil from the point of view that the condition is the disease, whereas it is a local manifestation of a more general disturbance.

The pen-and-ink sketches are admirable and are mostly by the author. The book will certainly be valuable for reference and should find a place upon the shelves of most medical libraries.

LIBRARY TABLE.

Atlas and Epitome of Gynæcology. By Dr. OSKAR SCHAEFFER. Authorised translation from the second revised and enlarged German edition. Edited by RICHARD C. NORRIS, A.M., M.D. With 207 Coloured Illustrations on 90 Plates and 62 Illustrations in the text. London and Philadelphia: W. B. Saunders and Co. 1900. Pp. 272. 8vo. Price 15*s.* net.—A notice of the second German edition of this book has already appeared in THE LANCET of Oct. 28th, 1899. The present edition is edited by Dr. Richard C. Norris and the translation has been carried out by Dr. Hersey Thomas. It is unnecessary for us to reiterate our opinion of the work. According to the editor's preface it may be considered to occupy a position midway between the *quiz compend* and the more pretentious works on gynæcology. The coloured plates and illustrations are of value and many of them very good. They will, no doubt, be of service to those students who are unable to attend a proper clinic and for use in class demonstrations. Possibly in its English form the book may appeal to a certain number of American or English students. The translator has done his work well and the book contains a large amount of information although not in a very readable form. In these days of advanced gynæcology it is interesting to note that the editor remarks: "The paragraphs devoted to the treatment of various diseases are very conservative, in some instances perhaps too much so for the aggressive surgeon."

Atlas der Nasenkrankheiten. Enthaltend 356 Figuren in 475 Einzelbildern auf 38 Tafeln. (*Atlas of Diseases of the Nose.* Containing 356 Figures of 475 separate drawings in 38 Plates.) Von Hofrath Dr. R. KRIEG. Stuttgart: F. Enke. Glasgow: F. Bauermeister. Parts 3 and 4. Price 6 marks each.—The morbid conditions dealt with in these parts of this excellent atlas, in 10 plates, are: fractures and luxations; hæmatomas and abscess of the septum; atresia and synechiæ; acute, diphtheritic, fibrinous chronic, and hypertrophic rhinitis; polypi, posterior choanal polypi, and polypoid hypertrophies; septal hypertrophies; atrophic rhinitis and rhinitis sicca. The colouring of these plates does not show the fault that was referred to in the notice that was given of the former two; it is most faithful to nature or should we say to life? The careful notes on which the text must have been based seem to exemplify the unwieldy proportions to which our own hospital out-patient departments have grown, for it would be extremely difficult for anyone to find the necessary time to compile such notes in a London clinic. The term "rhinitis sicca" is one too much neglected in books on nasal diseases, as is also the word "operculum" for the anterior extremity of the middle turbinate, both expressions being freely used by Dr. Krieg. Papillary hypertrophy of the turbinates, a point investigated by Wingrave who considers that the condition is incorrectly termed papillary, is nevertheless one which conveys an extremely correct impression of the morbid state, and the illustrations of it given by Dr. Krieg are most instructive. In only one respect are we inclined to find fault with the draughtsmanship and that is in the representation of the cushion of the Eustachian tube, a minor point.

Die Krankheiten der Frauen. (*Diseases of Women.*) By Professor HEINRICH FRITSCH. Ninth revised edition. With 271 Illustrations. Braunschweig: Friedrich Wreden. 1900. Pp. 650. 8vo.—No lengthy notice is required on our part of such a well-known work as Professor Fritsch's Text-book on Gynæcology which has recently appeared in a ninth edition. The new edition contains two new chapters. The first is devoted to Gynæcological Antisepsis and contains a very complete account of the origin and causes of wound infection, its results, its prevention, and the best method of attaining antisepsis and asepsis. For the hands Professor Fritsch recommends prolonged scrubbing with soft soap and water, scrubbing in alcohol, and finally in a 1 in 1000 solution of perchloride of mercury. He also directs that the operator is to brush his hair with a brush dipped in the sublimate solution and is to do the same thing to his beard. The nose is to be washed over and the nostrils swabbed out with the solution and an antiseptic mouth-wash of eucalyptol or some similar substance used. After such a preparation an operator should certainly be in a condition of surgical cleanliness. The use of indiarubber or cotton gloves the author does not approve. The second new chapter is devoted to the After-treatment of Cases of Laparotomy. It deals with the best methods of suturing the abdominal wound, the dressing of the wounds, the after-treatment of the patients, the various complications that may arise, and the commonest causes of death after an abdominal section. The question of the treatment of ileus and the various complications of the operation itself, such as adhesions or the formation of fistulous communications with various viscera, is gone into and their treatment discussed. The book bears evidence of careful revision and all the approved modern methods are noticed, such as the use of steam in the uterus after curettage. A large number of new illustrations have been added, and the book well sustains its reputation as one of the best of the smaller German text-books of gynæcology.

A Text-book of Obstetrics. By BARTON COOKE HIRST, M.D. With 653 Illustrations. Second edition. London and Philadelphia: W. B. Saunders and Co. 1900. 8vo. Pp. 846. Price 21*s.* net.—In our notice of the first edition of this book in THE LANCET of May 13th, 1899, we pointed out that Professor Hirst had written a very good text-book of obstetrics. The fact that it has so soon been found necessary to issue a second edition shows that our opinion has been shared by others. The second edition, which has just appeared is in reality rather a reprint than another edition. No extensive alterations have been made and no revision has been attempted. It is a pity that this has not been done, since the first edition showed certain omissions and contained certain statements to which we called attention and which might well have been corrected or modified. There can be no doubt, however, but that the present issue of this work will meet with as much favour as the last.

How to Keep "Fit"; or the Soldier's Guide to Health in Field, Camp, and Quarters. Compiled by Surgeon-Captain H. WAITE, V.M.S. Aldershot: Gale and Polden, Limited. Price 3*d.* Pp. 40.—This is a very little book of 40 pages, measuring four inches by two and three-quarter inches, but all the same it is a most excellent work, full of practical and simple hints. We are not sure of the advisability of passing a needleful of worsted through a blister and leaving the worsted in (p. 27), but think it better merely to snip the

blister with a clean pair of scissors or open it with a clean knife. Of course, if Surgeon-Captain Waite means that the worsted should only be left in when the patient is not marching his advice is all right, but this point is not made plain. This is the only carping criticism we have to make. We congratulate Surgeon-Captain Waite on supplying the soldier with portable rules of conduct in many cases of surgical and medical trouble that may arise when he is far from expert assistance.

JOURNALS AND MAGAZINES.

La Cirugía Contemporánea.—Mexico is well known to have made rapid strides in various departments under its present esteemed ruler. Amongst other matters its medical literature is growing both in quality and in quantity. For the last three years a Mexican Surgical Society has been in existence and this has now commenced to publish a monthly organ entitled *La Cirugía Contemporánea*, under the editorial charge of Dr. Ramón Macías. The first number, that for Jan. 15th, 1901, contains articles on the Induction of Anæsthesia for Pelvic Operations by the Intra-rachidian and Intra-arachnoid Injection of Cocaine in the Lumbar Region, by Dr. Villarreal, and on a case of Complete Abdominal Hysterectomy for an Enormous Uterine Fibroid, by Dr. Armendariz.

The Cornhill Magazine for March opens with a paper by Mr. C. H. Firth on the treatment of the sick and wounded in the Great Civil War in this country in the seventeenth century, derived largely from unpublished documents. Mr. Firth tells a curious story of a medical man in the army of the seventeenth century who had been impeached for incompetence and neglect. He replied by forwarding a statement favourable to himself which had been signed by grateful survivors, while he pointed out that those who died had died by the Divine will. "What," he pleaded, "is the physician or surgeon but Dame Nature's handiman to be aiding and assisting to her. But the Great God of Heaven has ordained and appointed severall diseases which are incident to men, and they have to attend them one Death, who does and will prevail, notwithstanding the most excellent means which the gravest or wisest physician or surgeon can use in the world, and this we may see by daily experience." The whole article is worth reading. And so is a paper by Mr. Basil Williams, late a gunner in the C.I.V. Battery, founded upon a bundle of Boer war bulletins. These documents mostly consisted of copies of the official telegrams sent to Bethlehem during the earlier days of the war, and show the Boers to have been quite well informed.

ASYLUM REPORTS.

London County Asylum, Horton (Report for the year ending May 7th, 1900).—The asylum was formally opened by Mr. Hubbard, chairman of the London County Asylums Committee, on June 3rd, 1899. Patients were first admitted on June 7th into the three wards which were then ready for their reception. By Oct. 2nd all the wards in succession had been completed and opened. The average number of patients resident during the 11 months covered by the report was 414 and comprised 67 males and 347 females. The total number admitted was 782. Of these 671 were transfers from other asylums. Dr. Frederick Bryan, the medical superintendent, states in his report that "in only 2 per cent. of the transfers was there any probability of recovery," while the proportion of patients with wet and dirty habits was one in five of the total number admitted. The nucleus of the female nursing staff was drawn by permission from the London County Asylums at Colney Hatch, Claybury, Cane-hill, and Banstead. Though built mainly for female patients the Asylums Committee have allowed buildings and accommodation for 110 working male patients. Amongst this class 50 epileptic patients are included, who have been received from the sister asylums of the County of London and are destined for the future "epileptic colony." The conditions at Horton are said to be as nearly akin to those at an epileptic colony as possible and the results are thus far described as quite satisfactory. There has been no serious accident or inquest during the year. One male patient escaped but returned of his own accord the next day. A fire-brigade has been organised and is composed of female attendants, supplemented by two male attendants to work the outside hydrants. "Numerous drills have been held and the brigade is in a satisfactory condition." The health of the institution was uniformly good until the onset of winter when influenza broke out and caused much illness. During February and March, 1900, there occurred many cases of sore-throat, chiefly among the staff, and a number of cases of diarrhœa among both patients and staff. There were also several cases of ulcerative colitis. Nine patients, all females, were discharged during the year as recovered. The deaths amounted to eight, and of these one each was due to epilepsy, cerebral hæmorrhage, peritonitis, renal disease, and phthisis, while three were due to pneumonia. The heating arrangements applied to the asylum worked so well that there was no practical difficulty in raising the temperature to any required degree in the coldest weather. Open fires have been used in all the wards for the sake of ventilation and cheerfulness, and for this purpose the wood on the estate, of which there is an ample quantity, has been chiefly used. The whole of the milk-supply is produced on the estate. There being no bakery bread is obtained by contract *pro tem.* The expenditure for the year for additions, alterations, and repairs amounted to £2812. The Lunacy Commissioners in their report state that the medical case-books, which are prepared on elaborate principles, are very carefully kept.

New Inventions.

BENSON'S JACKETED ICE-BOWL.

WE have received from Messrs. W. A. S. Benson and Co. of Bond-street, a specimen of their jacketed ice-bowl. The illustration shows the appearance of the bowl. The principle upon which it is constructed is that of isolating the interior from the outside air by means of an air jacket. Everyone knows how difficult it is to keep a small supply of broken ice from melting, but from an experiment which we made with this bowl we should say it would prove very useful for the sick room. A small quantity of broken-up

ice was placed in a handkerchief and weighed. The ice and the handkerchief together weighed just over half a pound. The ice and the handkerchief were then placed in the bowl at 9.30 A.M. on Feb. 25th, which was by no means a cold day. The bowl was kept in a dining-room with a fire, the temperature of the room being about 60° F., until 7.30 P.M., when the handkerchief and the remaining ice were again weighed. The loss in weight was just one half—i.e., the handkerchief and ice together weighed one quarter of a pound. The bowl will hold 2 lb. of ice when full and we think it should prove a valuable addition to invalid furniture.

THE LANCET.

LONDON: SATURDAY, MARCH 9, 1901.

Uncertified Deaths.

IT is satisfactory to find that one of the first deputations received by the new President of the Local Government Board consisted of members of the General Medical Council who were appointed to bring under his notice the dangerous state of the law regulating the registration of deaths in cases where there has been no regular medical attendance. The interview was not a public one, but we have every reason for believing that it was satisfactory to the deputation. Mr. LONG has shown himself, in one conspicuous instance, capable of appreciating the gravity that is implied in the occurrence of a largely increased number of deaths from a rare disease; and, what is more, he showed himself capable of the courage to incur temporary abuse and unpopularity in persistent and finally effectual efforts for the prevention of this disease. This is the kind of man to whom the profession and the public may look with some hope for an effort to improve the law guiding registrars in regard to the registration of cases of death where there has been no medical attendance and where no medical certificate is obtainable. The number of such deaths, we need not say, greatly exceeds the number of deaths from hydrophobia and they constitute little short of a scandal in a civilised community where medical help abounds. The whole subject has been well elucidated by the report of the Committee of 1893, of which Sir WALTER FOSTER was the president. We have no intention of going over the evidence adduced before this Committee or even of summarising its principal conclusions. Our object rather is to urge the President of the Local Government Board to legislate on this subject. Such deaths represent carelessness, neglect, want of intelligence, and a deficient respect for human life. They occur mostly in children and in persons advanced in life—classes eminently entitled to the consideration of the legislature. If the present state of the law is not answerable for these deaths it distinctly favours their occurrence by its laxness. It is of no use to blame individual registrars, for undoubtedly the law permits them a certain discretion in the registration of deaths. The General Medical Council in bringing this subject under the notice of the Government is only doing its duty. For years past, through its late President, Sir RICHARD QUAIN, and more lately through Sir WILLIAM TURNER, it has been making representations to different departments of Government with a view to legislation. It has been moved to do so by representations from all parts of the country and even by communications from the Home Office, showing the extent to which deaths are registered on the loosest information, supplied by druggists and unqualified practitioners of all sorts.

The Home Office has lately done good service in directing public attention to one branch of this subject which requires special attention—viz., the unsatisfactory way in which coroners and juries report the result of their inquiries. According to the last published annual report of the Registrar-General, that for 1898, there were in England and Wales 34,000 inquests, but only in comparatively few of these cases is any information given in the verdicts as to the actual cause of death. The Registrar-General complains that the verdicts of coroners' juries are frequently so worded as to obscure the medical evidence given at the inquest concerning the cause of death, and, of course, as we know too well, at many inquests no medical evidence is sought at all. We take this opportunity of publishing an extract, given by the Registrar-General in his report for 1898, from a report of a departmental committee of the Home Office on this point:—"We are so much impressed by the insufficiency and untrustworthiness of the statistics relating to particular causes of mortality which can be gathered from returns of coroners' verdicts that we venture ..... to recommend strongly that some steps should be taken to secure that their verdicts shall lend themselves more readily to clear classification by the Registrar-General."

When we remember that about 6 per cent. of deaths are certified by coroners the importance of this recommendation will be apparent. In Liverpool alone 1021 deaths out of 16,861 in 1899 were the subject of a coroner's investigation. All coroners are not alike careless of the value of their verdicts as sources of information to the Registrar-General. We are glad to know that London coroners are credited with wording verdicts in such terms as to give them some of the value of medical certificates. Even without any change of the law all coroners can do the same when medical evidence is in their hands. We venture to appeal to them to do so, and doubtless in any case the subject will have the attention of the President of the Local Government Board. The great statistical records of the nation, over which we spend so much money, are impaired in their value by the carelessness of coroners. Surely it is little for the country to expect from them that their investigations shall be careful and minute and that their account of a death shall include wherever possible a statement of its cause. We congratulate the General Medical Council on its vigilance in this matter, which we trust will be continued till a much needed amendment of the law is obtained. And amendment should aim at two great points: firstly, to secure that all seriously sick persons shall have such medical attendance as will justify medical certification of the cause of death; and, secondly, failing this, that information of the cause of death, properly and clearly worded, shall be forthcoming from the coroner.

Trials for Murder at the Old Bailey.

DURING the course of last week three persons indicted for wilful murder were tried at the Central Criminal Court. One was acquitted and the others were convicted and sentenced to death. All the cases presented points of medical interest.

The most sensational case was that in which HERBERT

JOHN BENNETT, aged 21 years, was charged with having murdered his wife, 23 years of age, on the beach at Yarmouth on Sept. 22nd, 1900. A writ of certiorari had been issued directing that the trial should take place in London instead of Norwich owing to the strong local feeling that had been evinced against the prisoner. The evidence against the accused was circumstantial, but it was of such cogency as to warrant but one interpretation. BENNETT and his wife, who were married in 1897, had lived at different places and under different names. About July 12th, 1900, Mrs. BENNETT took 1, Glencoe-villas, Bexley Heath, and remained there till Sept. 15th, when she went with her little girl to Yarmouth under the assumed name of HOOD. Her husband during this period was living as a single man at Woolwich, where he was employed at the Arsenal. On the night of Sept. 22nd a man and a woman were observed by two people on the beach at Yarmouth and a cry of "Mercy, mercy," and subsequently groans were heard. Early the following morning the dead body of a woman was discovered. Round her neck a mohair bootlace was tightly tied and this had killed her by strangulation. A coroner's inquisition was held and adjourned to Oct. 29th, when the jury returned an open verdict as the woman could not be identified. On the evening of Sept. 22nd Mrs. BENNETT received a letter bearing the Woolwich postmark. Her clothes had on them the laundry mark "599." These were the clues that eventually led to the elucidation of the mystery. On March 7th, 1900, BENNETT booked passages for Cape Town in the names of "Mr. and Mrs. HOOD." After staying four days at the Cape they returned to England. In the house at Glencoe-villas some articles of clothing were found bearing the mark "599." In Mrs. BENNETT'S possession was a key which unlocked the door of the house. In the summer of 1900 the prisoner became acquainted and eventually engaged to a girl named ALICE MEADOWS who believed that he was a single man. He endeavoured to obtain rooms for himself and her at the house in which his wife afterwards stayed at Yarmouth, but failing to get accommodation he took her to the Crown and Anchor Hotel, where they occupied separate rooms. When arrested BENNETT said, "I have never been to Yarmouth, I have not lived with my wife since January"—a palpable falsehood. A photograph of Mrs. BENNETT and her child which had been taken at Yarmouth showed a watch-chain. Neither this nor a watch were found upon her body or at her rooms; but in BENNETT'S lodgings at Woolwich a chain and a watch which were proved to have belonged to the deceased were discovered after his arrest. It was alleged by the prosecution that the accused took his wife to Yarmouth on Sept. 15th, left her there without going to her intended residence, and returned to Woolwich. As proof that he could not have been at Yarmouth on the day of the murder, Sept. 22nd, he referred the police to the evidence that two fellow-workmen could give, but these persons did not endorse his statement. For the defence an *alibi* was set up. A witness testified that on the evening of Sept. 22nd he was in BENNETT'S company for an hour, but this evidence, instead of being disclosed at an early date, was only brought forward towards the end of the trial. Without questioning the *bona fides* of the witness he may have mistaken the identity of BENNETT and also the date. Moreover, there was absolutely no corroboration, and the accused, who was absent from his lodgings on the night of Sept. 22nd, had not himself referred to the alleged incident. A prisoner on trial for murder is an admissible witness in his defence. His declining to go into the box is not considered to weigh against him, yet in most cases an innocent man would gladly avail himself of the opportunity, and this BENNETT failed to do. As regards the motive for the deed there was abundant evidence. The criminal had treated his wife cruelly and had once been heard to threaten her life. He was living apart from her though near to her, and that without any assigned adequate reason in so far as her conduct was concerned. He was leading a life of misrepresentation, and he had contracted an engagement with another woman who was ignorant of his guilt. His past was one of moral laxity; his present is that of a cold, cruel, convicted murderer.

Of another type of the criminal homicide was GEORGE HENRY PARKER, *alias* HILL, who was arraigned before Mr. Justice PHILLIMORE for having killed Mr. WILLIAM PEARSON in a railway carriage on the South-Western Railway on Jan. 18th, 1901. The evidence in this case was direct or personal, not circumstantial as that which secured the conviction of BENNETT. The deed was done in the presence of a third traveller who was seriously wounded at the same time either accidentally or intentionally. The accused man, aged 23 years, had apparently led a wild, dissolute life. On the day of the murder he took a ticket from Portsmouth to Winchester. At the latter station Mr. PEARSON, who was previously unknown to the prisoner, got into the train. After reading a paper he fell asleep. Soon after passing Surbiton PARKER without any warning shot Mr. PEARSON in the head, and immediately began to rifle his pockets. He threw the revolver out of the train, and on arriving at Vauxhall left the carriage whilst it was in motion and made a determined effort to escape. A Mrs. KING, the witness of the tragedy, raised an alarm, and PARKER, after an exciting chase, was caught. After the murder of Mr. PEARSON he offered Mrs. KING a sovereign, part of the money rifled from the dead man's pocket. Whether he had bought the revolver with the intent of committing murder is doubtful. For some days prior to Jan. 18th he had been drinking heavily, and it may be that he found the instrument a ready agent to carry out an impulsive homicidal act. He was known to be without money, and the "getting some of his own back," as he expressed it, seems to have been the only motive for his act. Whilst in prison he made no attempt to extenuate his guilt, but wrote piteous letters to his father, to the widow of his victim, and to the woman with whom he had been staying at Portsmouth. His counsel argued that "love and drink had driven the prisoner mad." PARKER was convicted and sentenced to death, the judge holding out no hope of mercy.

MAUD EDDINGTON was indicted for the murder of her sweetheart, JOHN BELLIS, at 94, Fleet-road, Hampstead, on Jan. 14th, 1901. The coroner's jury who inquired into the death of BELLIS returned a verdict to the effect that the prisoner intended to commit suicide and that in a struggle

for the possession of the revolver the deceased was accidentally shot. Subsequently to this finding further evidence was forthcoming. The charge at the police court was continued and the prisoner was committed for trial. The evidence, partly confirmed by the statement of the accused, showed that she had felt some resentment against the relatives of the deceased, with whom he lived, for having, as she believed, slighted her and tried to cause an estrangement between her and her *fiancé*, and that this resentment had later been extended to him. The scene of the tragedy was a small closely packed oil and colour shop. On the afternoon of Jan. 14th a tramcar conductor heard the sound of shots. Upon going into the shop he found the deceased in a crouching position, insensible, and bleeding from wounds in the head. In one hand was a string which held some brushes together. A similar bundle had evidently dropped from the other hand. EDDINGTON was lying at full length on the floor with her head towards the door. Between the two stood some steps. At the far end of the counter beyond the man was some blood which had apparently fallen on the floor. Some five feet or so distant, and close to the right of the deceased, was a quantity of blood that had run down from his head. The deceased had two bullet-wounds, one of which passed obliquely downwards from left to right through the upper lip, the other one and a half inches behind the left ear. The shot which had caused the latter had gone through the lateral sinus and lodged against the opposite side of the skull. The prisoner had a graze and some small blisters on the right side of her forehead. Deceased did not regain consciousness before he died six and a half hours after the injury. The prisoner said that she had written a letter to deceased telling him of her intention to shoot herself in his presence. This letter was not discovered, but an envelope in her handwriting and bearing the date she named was found in a locked box belonging to the deceased. A letter which had been written by her at her home she had torn up and thrown into the fireplace. In it were the words "he shall lose everything." The prosecution relied on this as proving malice, but for the defence it was contended that the letter was torn up because it did not truly represent the feelings and ideas of the accused woman. The facts and suggestions put before the jury in seeking for a conviction on the capital charge were: (1) a motive of revenge for neglect and unrequited love; (2) the statement in the letter before referred to; (3) that the steps stood between the two persons; (4) that the clothes of the accused were not disarranged and that there was no blood upon them; (5) that the objects of merchandise in close proximity had not been disturbed; (6) that the man was holding in his fingers the string which tied the brushes together; and (7) that the two patches of blood were some distance apart, with no intervening marks. Lord COLERIDGE for the defence contended that the man was accidentally shot whilst endeavouring to wrest the revolver from her, and the prisoner swore that BELLIS seized the weapon in his left hand and it went off in the struggle. The jury adopted this view and acquitted the prisoner, who pleaded guilty to the further indictment of having fired with intent to kill herself. The judge for this offence sentenced her to 15 months' hard labour, remarking that by her wicked and foolish act she had sacrificed the life of the deceased who had by a praiseworthy act—according to the previous finding of the jury—tried to save her life.

Glasgow's Predicament.

GLASGOW is at present the *corpus vile* on which is being performed an experiment which if interesting to the onlooker is serious to the city. In the spring of last year small-pox was introduced through the port by a sailor whose case proved fatal. Since then the disease has lingered on persistently, no month being entirely free from it, though in one fortnight in August the notifications, which had been about 100 for the month of June, were reduced to three. In November there was another lull, but for December the cases numbered over 70, and, after the new year holidays had had time to show their influence in the way of infection conveyed by crowds moving about all through the city and collecting in places of amusement, the notifications increased to 350 in a fortnight. Since then they have considerably diminished, so that in two weeks in February they were down to 157, though again some increment is reported.

The experiment to which we refer is that of voluntary revaccination. Primary vaccination in Glasgow is well attended to, so far as numbers are concerned, but, in the absence of all official supervision such as exists everywhere in England, there is grave reason to fear that one-mark and two-mark vaccination is much commoner than it ought to be, and that the area even of the one or two marks is not such as would be considered satisfactory south of the Cheviots. In these circumstances revaccination is being advocated by the corporation and its medical officers, and every medical man who cares to undertake the duty is being remunerated for all operations performed on behalf of the sanitary authority. The results are noteworthy. When the offer was first made the people were lukewarm. They did not realise the dangers of small-pox and few took the trouble to protect themselves. Then increase of small-pox was followed by increase of vaccination, so that now it is said that in a population of some 700,000 about 300,000 have been recently revaccinated. Adding to these the children who do not require revaccination—for even poor vaccinations give an appreciable period of protection—there is now only a minority of the inhabitants liable to attack or death by variola. Yet the disease continues to linger on among this minority, and such is the general indifference that every lull in the attack-rate is followed by a lull in the revaccination-rate. It is obvious from these facts that Glasgow has no rooted objection to vaccination. The question is merely one of sufficiency or insufficiency of stimulus. Meanwhile, the epidemic drags on among those who have neglected to protect themselves, and the town council is at its wit's end how to stem the pestilence before it ruins the exhibition, which is to be formally opened by Royalty early in May. This condition of mind gives just the kind of opportunity required for the advocacy of all kinds of alleged remedies. Even the so-called Leicester system, which was dealt with at length in THE LANCET

several years ago,[1] and which proved so terrible a failure in unvaccinated Gloucester, is being trotted out as applicable to the case of Glasgow. Glasgow's plight may be bad enough, but we hardly think that, in an attempt to manage small-pox without vaccination, it is prepared to empty its scarlet fever wards and to distribute scarlet fever all through the community as Leicester did, or to risk such an extraordinary prevalence of that disease as Leicester experienced in its wild efforts to deal with small-pox. And as to revaccination, few lessons are more striking than that which Leicester has to offer Glasgow in respect of the behaviour of small-pox to its hospital staff. Of 40 nurses and attendants at the Leicester hospital six were foolish enough to refuse revaccination when small-pox broke out, and the enlightened borough council had too much respect for the liberty of the subject to think of exercising pressure on its municipal servants. Of these six members of the hospital staff only one needs any protection against small-pox to-day. Five of the six were attacked by the disease and one of the five died. The fact that Glasgow is most keenly anxious to stamp out small-pox in time to save its exhibition need not have the result of making it either badger its officials or lose its own head as to the preventive measures to adopt. There is one measure, and one only, which is capable of dealing with the present emergency. That measure is revaccination. Already a large part of the population is perfectly safe against small-pox. Those who have been successfully vaccinated under the offer of free vaccination, or privately, need have no fear whatever of the disease. They can go where they please and do what they please so far as small-pox is concerned. It is not in their hands that the saving of the situation lies. If the unvaccinated minority wish to protect themselves against small-pox and to prevent the forthcoming exhibition from ending in disastrous failure they can do so at once by accepting the protection which is offered to them. We are glad to learn that an additional staff of vaccinators is being appointed and that the offer is to be pressed home by house-to-house visitation. This should be done systematically and thoroughly. Every vaccinator should have his area mapped out for him and he should not merely make a single call at every house, but should call again and again, if necessary, till he has seen every individual and pointed out the personal responsibility which lies on everyone to take care that he at least shall make himself insusceptible to variolous infection. The town council should make perfectly certain that the staff appointed is amply sufficient, not only to do this work, but to do the whole of it in the course of a single week. If it does so, and if the people rise to a true sense of their individual responsibility in the matter, then we have no hesitation in definitely promising that by about the beginning of April the Glasgow small-pox epidemic will be a matter of history.

In trying to impress these truths on the people of the second city of the Empire, as they are proud to call themselves, we have of set purpose refrained from saying one word about cleanliness and ventilation and limewashing of houses and removal of nuisances and so forth. All these things are excellent, but to prate of them at present might be seriously misleading. It might be thought to mean that there is more than one way of stopping the small-pox which prevails in Glasgow. Cleanliness is good, but it will not stop this epidemic; so is lime-washing, but it will be equally futile for the purpose in hand. By all means ventilate and wash and remove rubbish and filth wherever found; but whether these things are attended to or not, at least make sure of vaccination, and if Glasgow carries out thoroughly this last duty immediately it will have all the rest of the year, undisturbed by small-pox, to attend to other points, while it will be free to enjoy itself over the glories of what is intended to be a great world's fair, but which the great world will certainly shun if small-pox continues to prevail. Later Glasgow may well consider whether vaccinal protection of its adult population from small-pox should not be carried on regularly when the time of life arrives at which every youth should be revaccinated and whether some steps should not be taken to see that the primary vaccination of infants is done thoroughly as well as systematically. These are questions for the national legislature, but Glasgow has its own share of representation and has never been backward in giving voice to its own demands or even to the needs of Scotland which in this respect are identical with its own.

[1] THE LANCET, Nov. 20th (p. 1341) and 27th (p. 1407), and Dec. 4th (p. 1475), 1897.

The Metropolitan Authorities, the Local Government Board, and the Water Companies.

THE metropolitan water companies have withdrawn the regulations in regard to water fittings for which they wished to obtain the sanction of the Local Government Board. The regulations ought never to have been proposed by the companies. When they were submitted to the President of the Local Government Board he should have declined to sanction them. No public inquiry concerning them was needed. The inquiry has caused great expense to the London water consumers. Mr. LONG acted thoughtlessly in respect of the interests of the people of London, for he appointed the Water Examiner, an official whose duty it is to safeguard the interests of the water consumers and to note and report upon the delinquencies of the water companies, to conduct the inquiry. In consequence of the loss of the officer who was their natural protector the representatives of the Corporation of London, of the London County Council, and of the metropolitan boroughs were practically compelled to employ counsel to look after their interests in the inquiry. We fear that Mr. LONG does not even yet appreciate the hardship which he has inflicted on the people of London, for in answer to a question asked in the House of Commons he said that the regulations proposed by the water companies were the practical outcome of the recommendations of Lord LLANDAFF'S Commission, and that therefore the metropolitan boroughs and the other bodies which opposed the regulations ought rightly to pay the expenses which they had incurred in that opposition. We do not think that the people of London will agree with Mr. LONG in this contention, and the fact that all the representative bodies interested were at one in opposing the regulations will, it may be hoped, suffice to show that

although Londoners are a patient people there are limits to the measure of their endurance.

The election of the new members of the London County Council has fortunately occurred at the present juncture and there is no occasion to regret the turn which affairs have taken. The Moderate party have met the fate which they deserved and have been thoroughly beaten. The fact that candidates at the last moment changed the name of the party from "Moderate" to "Conservative and Unionist" has certainly been of no service to them. Electors are not so foolish as to suppose that a change of name means a change of nature. Party politics have no connexion with municipal government. In their policy in regard to water-supply the Moderate party have unfortunately been dominated by some members of the London Municipal Society who have a very close connexion with the business of the metropolitan water companies. This fact has probably not been without effect in deciding the casting of many votes at the late elections. The Progressive party of the Council have now such a large majority that they will have no difficulty in passing any measures which seem good to them. We hope that their power will be wisely used. In the past the Council have failed to be of service in matters concerning water-supply. They have not used the means of control which they possessed over the metropolitan water companies, but they have spent, and not always wisely, large sums of money on agents and surveyors. The expenditure has produced a large quantity of printed matter. The water consumers, however, unfortunately have not been benefited; they have, indeed, been out of pocket by these transactions. It has been conclusively shown that the scheme propounded by the Council for the compulsory purchase of the metropolitan water companies' undertakings could not be advantageously carried out in the interests of the purchasers. It is to be hoped that the Council will waste no more of the ratepayers' money this year in useless or harmful Parliamentary proceedings.

The metropolitan boroughs are to be congratulated on the part which they played in causing the water companies to withdraw their proposed regulations. We egret the expense to which they were put by Mr. LONG'S action in the matter, but, on the whole, we hope that much good will result from the fact that thus early in the history of the boroughs their representatives have had their attention forcibly called to one of their most important duties. To the metropolitan borough councils we chiefly look for the initiation of improvements in the water-supply. Up to the present time the county councils and the vestries have failed to exercise due supervision over the water companies. We confidently trust that the interests of the water consumers will in future be more carefully guarded, and in order that this may be done it will be well for the councils to encourage the burgesses to appeal to their engineers in all cases of difficulty. As a rule, the people of London, and especially the poor, have wished to be interfered with as little as possible in their domestic arrangements, but when they find that help is to be had they will readily avail themselves of it. Up to the present time it has never been tendered to them.

The boroughs will, we hope, obtain and record the important facts in regard to the water-supply in the districts over which they exercise control. Amongst the questions which will require attention it may perhaps not be out of place to suggest some which are of interest:—

1. Has every house a constant water service, and is the pressure at which water is supplied sufficiently high to ensure a supply for the upper storeys of the house?

2. Has the water been efficiently filtered? A daily examination at least of the colour of the water should be made in the case of each company which gives a supply in the borough. Should the water be turbid or of brownish colour a complete chemical examination should be made.

3. A plan should be made of the mains of the water company and their depth below the surface of the ground should be ascertained. Should any of the mains be placed at an insufficient depth notice should be given to the company, so that in case of frost the company should be liable for damage if through their default in so improperly laying the main the water should fail.

4. In the case of excavation in the streets a note should be taken as to the condition of all the mains thereby exposed. It is believed by some engineers that more water is wasted by escaping from the mains of the companies than is lost by defective fittings in private houses. Definite information on this matter would be of great value.

Annotations.

"Ne quid nimis."

MEDICAL AND SURGICAL AID FOR SICK AND WOUNDED OFFICERS.

THE first report of the Duke of Abercorn's Committee, dealing with the work done during the year 1900, was presented for adoption and duly adopted at Hampden House, Green-street, W., on Wednesday, March 6th. The indisposition of the Duke of Abercorn prevented his attendance, and Mr. P. Lyttelton Gell presided and moved the adoption of the report. The report commences by recapitulating the statements contained in the Duke of Abercorn's letter which appeared in THE LANCET of Jan. 13th, 1900, p. 133. It goes on to state that so far back November, 1899, offers of hospitality and of medical assistance reached the War Office not only from the United Kingdom, but also from Madeira, France, Belgium, Italy, Switzerland, Germany, Austria, and Egypt. Many leading consulting physicians and surgeons offered to place their professional skill at the disposal of invalided officers if they were recommended by some accredited authority. To render such generosity available the committee was formed by the Duke of Abercorn and was inaugurated at Hampden House on Jan. 22nd, 1900. The consideration of the conditions upon which the assistance of the professional members of the general committee might be rendered was referred to a sub-committee consisting of Sir Thomas Smith, F.R.C.S. Eng., acting as chairman, Sir Thomas Barlow, M.D. Lond., Mr. Christopher Heath, F.R.C.S. Eng., Mr. Edmund Owen, F.R.C.S. Eng., Surgeon-General J. B. Hamilton, and Dr. Dawson Williams. This committee drew up a report according to which the following regulations were adopted at a meeting held on Feb. 7th, 1900:—

1. Certain physicians and surgeons have definitely agreed to give their services to invalided officers without remuneration, but medical men in general practice who may be in frequent attendance on the clients of the committee will be remunerated at customary rates.
2. Chloroformists and assistants at operations shall be paid the usual fees.
3. All applications for help in connexion with this fund shall be made through the Executive Committee.
4. The Executive Committee shall decide to what nursing-home or

private house each patient is to go, and who shall be invited to attend him.

5. Patients shall be allotted to surgeons or physicians on the General Committee, as far as practicable, in rotation.

6. The Executive Committee shall notify to patients when they are fit to be discharged, either on the recommendation of the medical or surgical attendant, or at the request of the householder.

7. Operations shall, if possible, be performed in nursing homes rather than in private houses.

8. The Executive Committee shall decide where convalescents shall go.

9. The services of electricians, rubbers, and nurses, if recommended by the medical man in attendance, shall be paid for at the discretion of the Executive Committee.

10. The cost of instruments and apparatus recommended by the surgeon in attendance shall be met by the Executive Committee in cases where such assistance appears to them to be necessary.

11. These regulations are subject to revision from time to time as experience of the working of the system is gained.

The Executive Committee was constituted as follows:—The Duke of Abercorn, K.G. (President), Mr. P. Lyttelton Gell, Surgeon-General J. B. Hamilton, Dr. Donald W. C. Hood, Mr. F. A. Johnston, Mr. J. H. Morgan, Colonel J. Stacpole, Colonel on the Staff, and Lieutenant-Colonel H. Charlesworth, R.A.M.C., representing the committee at Southampton; and the Hon. Arthur Brodrick, honorary secretary and treasurer. The duty of making preliminary inquiries into the condition of every applicant was undertaken by Dr. Donald Hood and Mr. J. H. Morgan, and their places were filled during August and September by Dr. Henry John Davis and Mr. T. H. Kellock. Hampden House was on the invitation of the President made the headquarters of the fund, and office accommodation, clerks, and the like were supplied by the British South Africa Company. The Executive Committee desire to pay a warm tribute to the unremitting devotion of Mr. Brodrick. Over 250 cases were considered and of these nearly all received assistance. Of these about 100 were medical cases and 120 surgical, while the remainder were chiefly convalescents. The majority of the medical cases reported upon by Dr. Hood were cases of enteric fever, dysentery, or chronic rheumatism. Except a few who are still under observation, these patients have been satisfactorily restored to health. Of the 120 surgical cases reported upon by Mr. Morgan 39 were operated upon in nursing-homes by surgeons on the General Committee, and the x rays, used under the direction of Mr. Mackenzie Davidson, were found to be of the greatest service. A large number of patients were treated by massage and electricity, while three officers were supplied with artificial limbs under Mr. Morgan's personal direction. There were only two deaths among the whole number of the committee's patients and of these two one was due to incurable disease unconnected with the present war. In addition to officers of the regular army, officers of the Royal Marines, the Imperial Yeomanry, and the colonial forces have also been benefited by the fund. A few of these applications came from officers serving in China or in West Africa. No applications were received from officers of the Royal Navy or from volunteers, though it should be understood that all the advantages of the fund were equally open to officers of these services. Many officers received treatment without applying to the fund through the inexhaustible kindness of members of the medical profession and the hospitality of private persons. The Executive Committee tried to carry out the principle of contributing only towards the exceptional expenses incurred exceeding those which an officer would be unable to defray under the ordinary circumstances of his position. But while pursuing this principle the committee were conscious that many cases might exist in which, though the sufferers were eminently entitled to assistance, yet they might be unwilling to apply. In dealing with such cases the committee were constantly aided by the tactful coöperation of Georgina Countess of Dudley. The generous hospitality of Mr. George Donaldson and of Mrs. Wagg at Brighton and of Mr. George Bullogh in the Island of Rum is acknowledged with special gratitude. The report was seconded by the Commander-in-Chief, F.M. Earl Roberts, in a brief speech, and adopted without a dissentient voice. It tells a tale of most valuable work excellently done.

THE BENNETT CASE.

JUDGMENT has been done in the case of one of the most calculating and cold-blooded murderers on record who within a week or so will pay the penalty for his crime with his worthless life. The trial was one remarkable in many ways. Besides the passions which it aroused making it necessary that the venue should be changed, besides the details which came out, of the existence of a very curious set of people, the proceedings showed that among a certain section of English journals the old-time regard for truth and honour is at a vanishing point. Nothing could have been more damning than the words of the Lord Chief Justice as to the conduct of such journals. The liberty of the press as of the subject is a thing not lightly to be thrown away, but liberty is not licence. Everyone of those responsible for the shameless misuse of their position should be made to answer for his conduct and to pay for it, either by imprisonment or else by a fine so heavy that the process of catching half-pennies by pandering to the worst passions of human nature should be proved to be not worth the risks attendant on such conduct.

URGENT OPERATIONS IN HOSPITALS.

AN inquest was held on Feb. 7th at the North Cambridgeshire Hospital, Wisbech, by Mr. Coroner Welchman upon the body of Joseph Wallis, a farm hand, who died in the hospital on Feb. 6th. Evidence was given that on Feb. 1st deceased was kicked in the abdomen by a horse. He complained of some pain, but went on with his work for about half an hour, after which he went indoors. Mr. T. H. Hills was called and attended deceased up to Feb. 2nd, on the evening of which day the patient was admitted to the hospital. Dr. C. H. Gunson, the house surgeon, said that on admission there was no discolouration or abrasion, but there was a slight distension on the right side of the abdomen. By the evening of Feb. 5th deceased had become very much worse and an operation had to be performed. Mrs. Wallis was not communicated with with regard to the operation, but she knew of the patient's serious condition. Deceased had agreed to the operation himself. The cook at the hospital, who was deceased's niece, said that she had written to Mrs. Wallis on the evening of Feb. 5th, but she said nothing about an operation. The jury returned a verdict of "Accidental death" and added as a rider, "That in the opinion of the jury the deceased's relatives should have been communicated with before the operation and that in all serious cases in future the relatives ought to be communicated with." At a meeting of the hospital committee held on Feb. 19th the rider was discussed and the committee unanimously resolved that they approved of the steps taken by the medical officers and that they were convinced that to have delayed the operation in order to communicate with the patient's wife would have been culpable on the part of the medical officers and prejudicial to the patient. The committee, while anxious to consult the nearest relatives before an operation, as is invariably done when possible, could not accept the rider but preferred to trust in the judgment of the medical officers. It was also resolved that the resolution, the verdict, and the rider should be forwarded to the Home Secretary in order that he might inquire into the matter with a view to the removal of the rider from the records of the coroner's court. We are glad to see that the hospital committee made such a firm stand, for it is obvious that the rider of the jury if acted upon would in many cases render hospital treatment

useless. Cases are constantly arising where immediate operation offers the only chance of life and where it may be impossible to communicate with the relatives who in the country especially may live miles away and who even if a messenger is sent may be out on his arrival. We can only hope that the Home Secretary will decide that this very foolish rider shall not be allowed to remain on the records of the coroner's court.

THE MINERAL WATERS OF FRANCE.

THE society for promoting the study of the natural mineral waters existing in various parts of France intend during the present year to organise an excursion to visit the health resorts in the south-eastern parts of that country. It is intended to include in the projected tour Evian, Divonne, St. Gervais, Sanatorium d'Hauteville, Aix-les-Bains, Marlioz, Challes, Salins Moutiers, Brides-les-Bains, Allevard, Uriage, La Motte, Vals, and Lamalon. Following the successful precedents of former years the excursion is to have the advantage of the presence of Professor Landouzy, who will at each of the places visited give a brief account of the nature and therapeutic value of the waters found there. The excursion is to take place during the first fortnight in September. We are informed that those of previous years have proved highly satisfactory. English visitors were received with every courtesy, and the holiday was pleasant, instructive, and the reverse of expensive. Particulars of the forthcoming tour may be obtained from Dr. Leonard Williams, 8, York-street, Portman-square, W.

INSANITY IN TWINS.

DR. A. CULLERE, medical superintendent of the asylum at Roche-sur-Yon, has published an interesting account of insanity in twins in the February number of the *Archives de Neurologie* and has given the records of two new cases. He first asks the question, "Is there a special insanity affecting twins?" (*folie gémellaire*), and answers the question as follows. The special predisposition of twins renders both liable to one common form of insanity. The attack is characterised by the three following features: first, simultaneity of the attack and more or less parallelism of the symptoms at the onset; secondly, analogous course and similarity of termination of the malady; and thirdly, the spontaneous origin of the disorder arising from a common organic basis. When these features are present it is possible to recognise in the insanity of twins an origin in degeneracy, for the common basis of development is usually some form of congenital mental debility or even imbecility. The onset of intellectual disorder is often early, it is characterised by variability of mental symptoms (polymorphism), and it has a tendency to pass into premature mental enfeeblement (dementia præcox). Dr. Cullere is inclined to view the very fact of twinship (*gémellité*) as itself an indication of inferiority, and quotes to this effect the experiences of Keim, Fournier, and Jonathan Hutchinson that twins are relatively common in the offspring of tuberculous and syphilitic parents. A strong neuropathic heredity is almost always met with in the genealogical history of insane twins, and this even when but one of the twins is the subject of insanity. Thus in six out of seven such cases the parental taint appeared in the form of phthisis and lithiasis, phthisis and nephritis, insanity of the litigious paranoiac form, moral imbecility, or other nervous defect. The following cases illustrate insanity in twins. Case 1.—The patients were twin sisters, firstborn; the father was alcoholic and of precarious health. The mother was in normal health but bearing a neurotic taint from alcoholic and phthisical grandparents. The twin sisters were backward in speech and intelligence but otherwise enjoyed good health. They menstruated at the age of 16 years. One became a seamstress and the other a domestic servant. At about the age of 17 years both began to show signs of mental confusion, irritability, and violence of temper. Both suffered from terrifying dreams and nightmare. They grew worse and one of them had to be placed in an asylum, the chief symptoms being maniacal excitement and irresistible impulses to violence and murder, which continued with remissions and intermissions for some years. She then became mentally enfeebled. The other sister exhibited similar symptoms of mania and murderous impulses and had intermittent attacks of frenzy mingled with incoherent screaming, cursing, and crying; she made several attempts to dash out her brains. She gradually subsided to a quieter condition after a few years and exhibited a less degree of mental enfeeblement than did her sister. Both sisters exhibited facial asymmetry. Case 2.—The patients were twin brothers, the sons of a hypochondriacal man whose sister was insane. The twins were born at the fifth confinement and were during childhood noted to be weak-minded. Their mental disorder began to develop at about the age of 20 years. Both had a marked propensity to alcoholism; one became a soldier and while on military duty was seized with an attack of mental confusion and excitement. After this he had repeated maniacal attacks, and drinking always brought them on. He then developed delusions of a grandiose nature. The other at the age of 20 years had subacute delirium and passed into a stage of stupor. He subsequently developed delusions of persecution of a persistent kind.

THE VALUE OF SALINE ENEMATA IN COLLAPSE AND IN URÆMIA AND PUERPERAL ECLAMPSIA.

THE great value of saline enemata in a number of conditions, of which the most important are severe hæmorrhage, uræmia, and puerperal convulsions, is not sufficiently appreciated. One reason for this appears to be that intravenous or subcutaneous saline injections are much more recommended by authorities. Why they neglect to enforce the value of the much simpler, far more generally available, and equally efficacious method of rectal injection we cannot imagine, unless it be that its very simplicity has caused them to overlook it. In the emergencies of general practice instruments for intravenous or subcutaneous injection will often be wanting and can be procured only after a loss of valuable time. In an annotation [1] we referred to the value of saline injection in the hæmorrhage of typhoid fever, and *à propos* of this Mr. W. M. Gabriel [2] pointed out the advantage of the less cumbrous method of rectal injection over intravenous. He related the case of a man *in extremis* from repeated intestinal hæmorrhages in typhoid fever. Other means having been exhausted, a pint of hot saline solution was injected into the rectum and had to be retained artificially owing to the atony of the sphincter. After several minutes a faint radial pulse was perceptible and recovery followed. In the *Journal of the American Medical Association* of Feb. 9th Dr. T. B. Greenley has related two cases which show the value of saline enemata in collapse from hæmorrhage. He was called to a woman suffering from hæmorrhage due to abortion at the end of the second month. She was collapsed, pulseless, and very pallid. As soon as he could have it prepared he injected nearly half a gallon of hot salt solution into the bowel and kept it there by pressure on the anus for one and a half hours. The pulse returned and turpentine and ergot were given every two hours. The hæmorrhage ceased and the ovum was expelled. Next day the patient was doing well. In a second case a woman was flooding in the third

[1] THE LANCET, Jan. 14th, 1899, p. 112.
[2] THE LANCET, Jan. 21st, 1899, p. 190.

month of pregnancy; she was nearly pulseless and her heart was beating very feebly. The same treatment was adopted and clots were removed with the fingers from the uterus. She rallied in less than an hour, when the hæmorrhage was completely arrested. In another case a child, aged eight months, was suffering from cholera infantum. For three days there had been vomiting and purging, and food had been kept on the stomach only 10 minutes. The "small vibration" of the pulse at the wrist could not be counted. Nearly a pint of salt solution was injected into the bowel and retained by pressure. In less than an hour the pulse improved. A teaspoonful of milk was then allowed every 15 minutes. The child ceased to vomit and recovered in a few days. Dr. Greenley comments on the astonishing rapidity with which the injection is absorbed when the blood-vessels are empty. He uses salt solution at a temperature of from 110° to 115° F. and of the usual strength (a drachm to the pint). He rightly points out that in such cases transfusion would be attended with greater risk and entail much trouble and that there is no time to send for instruments or further medical assistance. Possibly in extreme cases, as Mr. Thelwall Thomas insists,[3] nothing short of intravenous injection is of use, though we are inclined to think that cases of hæmorrhage in which an intravenous injection would save life and a rectal injection would fail are few if, indeed, any. Moreover, the former operation is often impracticable or, if practicable, involves the loss of invaluable time in preparations, sterilising instruments, &c., which more than counterbalances any possible advantage of intravenous over rectal injection. The *rationale* of this treatment was explained by Dr. William Hunter in his lectures at the Royal College of Surgeons of England in 1889. In fatal hæmorrhage death results because the heart is not supplied with sufficient fluid upon which to contract; saline solution supplies the necessary fluid. This treatment should have precedence of all others, though such may also be adopted. Exactly the same applies to the treatment of uræmia and puerperal eclampsia. In these conditions the all-important indication is to re-establish the renal secretion and not, as is often thought, to endeavour to stop the convulsions by chloroform, bromide, morphia, &c. (That these measures are of some value is not denied.) Now the introduction of saline solution into the circulation is the most trustworthy of all methods of re-establishing the renal secretion and the simplest means of accomplishing this is by saline enemata. In addition barley water or other diluents may be given by the mouth—as drinks if the patients can swallow, by the stomach pump if they cannot. If this rational treatment, which aims at removing the cause of the uræmia or eclampsia, were generally adopted, instead of the mere treatment of symptoms by sedatives, we believe that many valuable lives would be saved.

THE INCREASE IN APPENDICITIS.

IN a discussion at the meeting of the Paris Academy of Medicine on Feb. 19th M. Lucas-Championnière expressed the opinion that appendicitis is rapidly increasing in frequency and he is inclined to attribute this to an increase in the causes of intestinal infection, the chief of which he considers to be the eating of meat in large quantities. In this way he explained the fact that appendicular affections are most common in countries where much meat is eaten, such as England and the United States. The explanation of the increase of appendicitis need not be considered until it has been certainly shown that an increase has occurred. M. Lucas-Championnière thought that if appendicitis had formerly been as frequent as at present the fact would have been noted by observers. This does not necessarily follow, for until appendicitis was recognised to be the lesion present in most cases called "typhlitis" and "perityphlitis" it was hardly ever diagnosed till the post-mortem examination. A large proportion of the cases formerly called "idiopathic peritonitis" must have been cases of appendicitis. That ulceration and perforation of the vermiform appendix might occur was known many years ago—for instance, in 1856 Dr. Lewis, in the *New York Journal of Medicine*, collected 47 cases of perforating ulcer of the appendix—but the name "appendicitis" is of comparatively recent origin. There is, in fact, but little, if any, reason for thinking that a real increase has occurred in the number of cases of inflammation of this process, but the transference of many of these cases to the surgeon and the great increase in recent years of laparotomy for obscure abdominal conditions have led to an apparent increase.

[3] THE LANCET, Nov. 26th, 1898, p. 1390.

THE CHEST PANTOGRAPH.

IN the New York *Medical Review of Reviews* of Jan. 25th there is an illustrated description of an instrument devised by Professor Winfield S. Hall of the North-Western University Medical School, by the use of which he claims that chest-contours can be accurately measured and recorded. It has the usual four jointed arms of a pantograph, but differs from the ordinary pantograph in having attached to it at the angle most remote from the fixed point a brass or steel semicircle which lies altogether outside the parallelogram of the frame and has its diameter in a line with one of the arms forming the angle there. The extremity of the semicircle most remote from the pantograph serves as the tracing-point. The object of the semicircular arm is, of course, to permit the tracing point to be carried round the thorax and the semicircle can, when required, be rotated round its diameter so as to reach both sides of the chest. The seat upon which the patient sits is adjustable for height and has back and side supports for the waist, so that the upper part of the body is not allowed to move from side to side, distorting the contour. The patient sits beside a table on which the fixed point of the pantograph is pivoted in the usual way and the contour is drawn by the writing pencil on paper ruled in squares of one millimetre. Professor Hall places the writing pencil so that the contour drawn is one-fifth of the contour copied, giving a size convenient for reference and preservation. He prefers his instrument to the apparatus devised in Sweden for the same purpose. The diameter of the semicircular arm is 40 inches. The parallelogram is, of course, equilateral; the length of the sides is not stated, but it is apparently about 54 inches.

THE "SAINT-PIERRE."

AT the end of a brief summary of the medical transactions in Newfoundland waters carried out under the auspices of the Société des Œuvres de Mer during the year which has just expired, Dr. Bonnafy makes the welcome announcement that in order to replace their present hospital ship the *Saint-Pierre*, which is a sailing vessel, the authorities of the association have caused a steamer to be constructed with special fittings for medical and surgical work amongst the fleet of French ships engaged in the cod-fishing industry. Although dependent for progression on sails alone the *Saint-Pierre*, which left St. Malo last April in charge of Dr. Bonain of the French naval service, was nevertheless able within the space of six months to complete five cruises embracing the whole of the fishing ground. In the course of these continuous peregrinations, during weather that sometimes was calm but more often "dirty," communication was established with 301 fishing

boats, when all slight cases of sickness or injury among the crews were duly attended to on board their own craft, the more serious cases, 88 in number, being transhipped into the *Saint-Pierre* for treatment. The average duration of each of the latter cases was a fraction under seven days, but the time spent on board by 27 additional patients who were carried back to France at the end of the season is not included in this calculation. In addition to affording medical aid the officials of the hospital ship also undertook post-office duties, delivering 7261 letters among the fishers and receiving 4020 in return for conveyance to families and friends at home. Ten sailors adrift in four dories were picked up and rescued by the *Saint-Pierre* during her cruises. This remarkable fact exhibits in a very sombre light the difficulties and dangers of the life led by the cod-fishers. Every year there are numerous victims, sometimes more and sometimes less, swallowed up by the impenetrable fogs. In the season of 1899 the number saved by the hospital ship was 20; in the previous year it was 10. Among the 115 admissions the chief diseases were as follows: typhoid fever, 15; bronchitis, 14; pulmonary tuberculosis, five; scurvy, seven; nephritis, six; rheumatism, six; pleurisy, three; alcoholic gastritis, two (10 slighter cases were treated on board the patients' own ships); phlegmon, nine; ulcer, 10; fracture and dislocation, seven; *embarras gastrique*, four; wounds, &c., 12; and venereal affection, one.

SYMPTOMS OF CEREBRAL SYPHILIS.

DR. JAS. MACBRIDE draws attention in the *Journal of the American Medical Association* of Feb. 2nd to the fact that in the majority of cases of cerebral syphilis the mental symptoms are largely of a negative kind—e.g., loss of mental power and of self-control, impairment of memory, loss of interest in surroundings, and a liability to undue emotional disturbances such as anger and crying. Attacks of loss of speech or of sight ("blind spells") occur not uncommonly at an early stage and demand careful diagnosis, as an error may be serious. Thus one patient suffered from "blind spells" which had been erroneously diagnosed and treated as biliousness until it was found that they were due to cerebral syphilis. Delusions, if present in an early stage, are incongruous and of quickly-changing character, and never deeply affecting belief or conduct. There is general confusion of mind. Drinking and drug habits are prone to be indulged in at this stage, the patient seeking a narcotic or anodyne to relieve his mental distress. The lapsing into such habits at this stage also betokens a loss of mental balance and self-control. Mental disorder may appear in the syphilitic subject very soon after the appearance of secondary symptoms; one such case has been recorded where it developed within three months of infection, and in a case observed by Dr. MacBride the interval was six months. It is found that syphilitic inebriates are particularly liable to commit suicide after a drinking bout. Syphilitic insanity sometimes closely resembles general paralysis, but has more frequent focal symptoms—e.g., paralysis of one or more cranial nerves, local cerebral hæmorrhages or softenings with Jacksonian convulsions, and sometimes recovery may result, though in true general paralysis recovery probably never takes place. Charcot long ago called attention to a characteristic of syphilitic brain disease—viz., irregular and temporary attacks of aphasia, a condition which is correlated with atheroma and disease of the cerebral arteries. In one case noted by Dr. MacBride when the patient took a long walk or played tennis he had transient spasm in the right arm and leg followed by temporary paralysis. "If he talked for any length of time he developed a temporary ataxic aphasia, showing what little reserve power was left to the brain as the blood-stream was gradually shut down" by atheroma. In syphilitic meningitis there was always cortical arteritis. According to its location there were symptoms of headaches, neuralgias, and oculo-motor and other palsies of cranial nerves. The mental symptoms varied from stupor to active delirium and furious violence. Gummata produced local symptoms, and while predisposition had much to do with determining a special encephalopathy following syphilis, yet it was probable that a special virulence of the syphilitic virus was sometimes the cause, as in the case mentioned by a French writer of a woman who infected five youths with syphilis, with the result that three of them died from general paralysis, while two suffered from cerebral syphilis. Syphilis of the brain occurring after 10 years from the date of infection was rare. M. Fournier mentioned a patient who was entirely well for 17 years after syphilitic infection and then died from cerebral syphilis.

THE FIFTH TRIENNIAL INTERNATIONAL CONGRESS OF PHYSIOLOGISTS.

THE fifth Triennial International Congress of Physiologists will be held at Turin this year from Sept. 17th to 23rd. The University Institute of Physiology, under the direction of Professor Angelo Mosso, will be placed at the disposal of the Congress. In connexion with the Congress an exhibition of apparatus will be open from Sept. 14th to 23rd; to it the Marine Biology Station of Naples will contribute a collection of marine forms of animal life useful for comparative physiology. Those desirous of contributing to the work of the Congress should communicate with Professor Sherrington, general secretary for the English-speaking countries, Thompson-Yates Laboratories, the University College, Liverpool.

EPILEPTOID TREMBLING: A SYMPTOM IN PULMONARY TUBERCULOSIS.

IN the *Revue Neurologique* of Jan. 15th an interesting communication upon this new and little known clinical sign of "epileptoid trembling" in pulmonary tuberculosis appears from the pens of M. Léopold Lévi and M. Follet. Epileptoid trembling as a symptom observable in phthisis is far from being exceptional; it is now known to clinical observers, though no mention is made of it in the text-books of medicine. Out of 50 cases this symptom was ascertained to be present in nine instances. The following is a typical case. A young woman, aged 22 years, suffered from pulmonary tuberculosis and had a cavity in the apex of the right lung. When she put her foot on the ground a jerky spasm of the flexors of the ankle came on and was followed by clonic movements if pressure against the ball of the foot was maintained. Ankle clonus and patellar clonus were easily elicited. There was no local muscular atrophy and cutaneous sensibility was everywhere normal. Her occupation was that of a compositor, but she seemed quite free from symptoms of lead-poisoning. She was free from symptoms of hysteria and of epilepsy, but had suffered from attacks of indigestion, with headache, disturbances of vision, nausea, and epigastric discomfort. The visual disturbances occasionally took the form of hemiopia. A second case was similar to the above. Of the seven other cases two were males and five were females, the ages varying from 18 to 30 years. Three of the latter had a previous history of typhoid fever, while another was at one time addicted to absinthe-drinking and appeared to be an unstable, emotional, neurotic person, subject to cramps of the great toe and vaso-motor troubles of the feet. The fifth was nervous and was occasionally subject to hysterical fits. M. Lévi and M. Follet point out that none of their cases suffered from paresis, amyotrophy, trembling, or myoidema. It was not possible to elicit the reaction of debility or of cachexia in the muscles. The

existence of pulmonary cavities in all the cases in which the symptoms of epileptoid clonic trembling were observed suggests the question whether such symptoms were due to the action on the spinal cord of toxins produced by the micro-organisms in the lungs. M. Lévi and M. Follet do not believe that the symptoms belong to the class of phenomena known as idio-muscular contraction. While admitting that "epileptoid trembling" indicates a condition of excitation of the pyramidal tracts which, however, does not result in degeneration of the nerve fibres, they incline to the belief that the trembling is due to the action of toxins of tuberculous or para-tuberculous origin. The symptoms, in short, indicate the presence of the "mixed infection" which supervenes in the progress of pulmonary tuberculosis.

ENDOWMENT OF A LECTURESHIP AT GUY'S HOSPITAL.

IT was announced a few months ago that a generous donor had presented to the governors of Guy's Hospital the sum of £6000, the interest of which was to be used for the purpose of medical education and research. The question of the best means of utilising the benefaction was referred to the staff of the medical school and with the approval of the donor it has been decided to endow a lectureship in experimental pathology. The holder of the appointment will be known as the Gordon lecturer, to commemorate the fact that the endowment is due to the generosity of Mr. Robert Gordon. It will be a matter for general satisfaction that so important an addition has been made to the extremely small number of endowed lectureships in connexion with medical education in London. It is particularly appropriate that this addition should have been made at the moment when the metropolitan medical schools have become affiliated to the University of London. It is confidently hoped that the reconstitution of the University may do much to improve medical education in London, but without money substantial reforms are with difficulty carried out. If Mr. Gordon's example is followed by other wealthy men who appreciate the great benefit to mankind of the increase and dissemination of medical knowledge, the Faculty of Medicine of the University of London will approach its labours in the cause of reform with a light heart.

COLORIMETRY IN WATER ANALYSIS.

THERE is little doubt that with greater attention to colorimetry this convenient method of diagnosing the quality of water for drinking purposes will become more accurate and reliable. The colour of water itself is some indication of its purity and origin while the approximate determination of the degree of turbidity is valuable in the same direction. The value of observations on colour and turbidity depends largely upon the standards adopted. The standards must of course be unvarying and uniform. It may be noticed that in the monthly reports of the chemists to the London water companies the colour of the water is recorded in degrees of brown and blue based respectively upon solutions of standard bichromate of potassium and copper sulphate. Both these salts are permanent and are therefore very convenient and accurate for the purpose. Blue, of course, is the normal colour of pure water, the degree of brown indicating more or less organic matter. It has been shown that the degree of brown varies directly with the proportion of organic carbon in water. In America the determination of the yellowish-brown colour of water has been based upon a standard of Nesslerised ammonia. But better than this standard is that obtained by mixing solutions of a definite strength of potassium platinic chloride and cobaltous chloride. This standard appears to be perfectly uniform and practical and accurate for the determination of the colour in water. It is known as Hazen's platinum cobalt standard. As regards turbidity, permanent standards are made containing a weighed amount of kaolin to distilled water. Permanent standards may be obtained in the case of determining the nitrogen in nitrates in water without recourse to artificial colours; for the production of a yellow colour by the action of nitric acid upon phenol, as is depended upon in the analysis of water, is quite permanent. Permanent ammonia standards for both free and albuminoid forms may be prepared with the cobalt platinum solution already mentioned. In the case of the estimation of nitrites depending upon the production of a pink colour with sulphanilic acid and naphthylamine hydrochlorate, this may be matched perfectly with a cobalt copper solution. In the same way the iron in waters, converted into the ferric form by suitable means, may be exactly measured by means of a mixture of standard platinum and cobalt solution. The permanency of a standard solution is an immense advantage and all contributions to our knowledge relating to these factors in analysis will be welcomed. The latest contribution, upon which some of the above statements are founded, is from the Mount Prospect Laboratory in Brooklyn, New York, by Mr. Daniel E. Jackson, and his observations will be read with interest by all those concerned in the analysis of potable water.

MASQUERADING AS A MAN.

ON March 2nd a person described on the charge-sheet as "Catherine Coome, aged 66, house decorator, of no fixed home," appeared in connexion with a case of alleged fraud. She appeared in court dressed as a man and, according to her own story, she was married at 15 years of age. Having served as a schoolmistress she went to Birmingham where she determined to personate a man, as she thought she would get on better. She served for two years on board of a Peninsular and Oriental liner as ship's cook and became acquainted with the maid of a lady who lived at Hampton Court. This maid she "married" and they lived together for 14 years. The "husband" then returned to London, where, on account of meeting with severe injuries, she had to enter the workhouse, where her sex was discovered. The story is strange enough, but there is nothing particularly new about it. Besides such heroes of romance as Billy Taylor, the immortal Rosalind, and the love-sick crew who (according to Mr. Gilbert) shipped with Lieutenant Belay, there are historical instances of women who have passed their lives as men. Such a one was Christina Davis, who died in July, 1739, after having served many years in the 2nd Dragoons, afterwards the Scots Greys. She was born in 1667, and when quite a young woman married a man named Welsh. One day Welsh was forcibly recruited and sent to serve in Holland in Lord Orrery's regiment. Christina thereupon dressed herself as a man and enlisted as a foot soldier so as to find her husband. After many adventures, during which she served in the battle of Landen, was wounded, taken prisoner, exchanged, and fallen in love with, on account of which last affair she had to fight a duel, she enlisted in the cavalry and was present at the siege of Namur. After the peace of Ryswick she returned to Ireland without having found her husband, but on war being again declared she took up service again. After the battle of Blenheim she was on prisoners' guard and there met her husband, who had long thought her to be dead. They decided to pass as brothers and continued to serve. At Ramillies she was severely wounded and her sex was discovered. Her husband was killed at Malplaquet, but she was twice married afterwards. At her death she was buried in the grounds of Chelsea Hospital with military honours. Two other remarkable women were Anne Bonney and Mary Read, who lived about 200

years ago and carried on a successful career as pirates, but the classical instance of a woman passing as a man is that of James Barry, M.D., of the Army Medical Staff, a full account of whose remarkable career was incorporated into a novel, "A Modern Sphinx," by Lieutenant-Colonel Rogers.[1] The sexual problems involved in such cases form a curious chapter in medical psychology.

MEDICAL MEMBERS OF THE LONDON COUNTY COUNCIL.

THE following medical men are among the members of the newly-elected County Council of London: Dr. W. J. Collins (St. Pancras, W.), Mr. G. J. Cooper (Southwark, Bermondsey), Dr. G. B. Longstaff (Wandsworth), and Dr. J. F. Little (Marylebone, E.). With the exception of Dr. Little, who gained his seat by one vote, all these gentlemen were members of the last council. Among the members of the profession who unfortunately failed to secure a seat on the council was Dr. E. B. Forman who offered himself for re-election.

FARQUHAR, NORTH, AND CO. *v.* LLOYD.

IN commenting upon this case in an annotation in our issue of Dec. 1st, 1900, we expressed the view that the damages awarded by the jury were excessive, even assuming that the article complained of which appeared in the *Daily Chronicle* exceeded the limits of fair comment upon the proceedings in the county-court. It may be remembered that the plaintiffs were manufacturers of tinned provisions and had sold goods to a tradesman who had refused to pay for them, contending that they were defective and that had he sold them they would have proved dangerous to the public. The defective condition of the goods was admitted, but the *Daily Chronicle* appears to have erred in its criticism by implying, in accordance with the view of the jury, that the stock of the plaintiffs' beyond those articles sold to the retailer in the case would be found in an equally defective and dangerous condition. For ourselves we maintain that the press does the public an eminent service by its honest criticism and, if need be, censure. This particular case is one which concerns us as medical journalists, for we are constantly dealing critically with foods and proprietary preparations, and if we found poisonous material in a food or a food dangerous to health we should not hesitate to say so. But in thus performing a public duty it is of course most desirable to restrict all censure to the real facts of the case and to keep it free from the smallest external implication. This the *Daily Chronicle* did not do. All the same, the damages awarded were very excessive, but we are glad to find that on contesting the award of £1900 in the Court of Appeal this week the proprietors of the *Daily Chronicle* were allowed a new trial. The Master of the Rolls said that only a very gross libel could command such excessive damages. The verdict, he added, was a scandal, and there must be a new trial unless the parties would agree that the damages should be reduced to £500. The ultimate issue will be interesting.

LOCAL AUTHORITIES AND THE COST OF CONVERTING CONSERVANCY TO WATER-CARRIAGE SYSTEMS.

DR. MEREDITH YOUNG, the medical officer of health of Stockport, raises some pertinent points in a paper in the January number of the *Sanitary Inspector* in regard to the position of local authorities in embarking on large schemes in connexion with the conversion of conservancy systems to water-carriage systems. As is well known, a number of towns have within the past few years obtained Parliamentary powers to contribute towards the cost of converting privy middens into water-closets. While from one point of view this step, as he points out, is commendatory, it may be, perhaps, scarcely equitable from the standpoint of the general ratepayer. In considering the cases of some large Midland towns he shows that the assumption that the results are in favour of local bodies contributing towards the work of conversion in a wholesale manner is hardly justified when certain points in the information are emphasised. Rather it is evident that care should be exercised in taking advantage of the clauses of a private Act or the general body of ratepayers may have to bear the whole of the cost of transforming foul and dilapidated privies into efficient water-closets. In the same number of the journal referred to Mr. C. W. Laskey, the chief sanitary inspector of Eccles, contributes a paper on the same question in which he points out that, owing to the late Lord Chief Justice's decision, magistrates have now no power to order the conversion of an existing privy into a water-closet under the Nuisances Clauses of the 1875 Act, and that local authorities must either have recourse to section 36 or else obtain a private Act of Parliament.

THE annual clinical debate of the Chelsea Clinical Society will be held at the Jenner Institute of Preventive Medicine on March 12th and 19th. The subject for debate is "The Clinical and Pathological Relations of the Chronic Rheumatic and Rheumatoid Affections to Acute Infective Rheumatism." The debate will be opened by Dr. Archibald Garrod, and the following gentlemen will speak, amongst others, on March 12th, Dr. F. J. Poynton, Dr. Alexander Paine, Dr. G. A. Bannatyne, Mr. N. C. Macnamara, and Dr. C. O. Hawthorne. The meeting will be held at 8.30 P.M.

THE Brussels Medical Graduates' Association have unanimously resolved to send an address to the King which sets forth that the members of the association humbly desire to offer their respectful sympathy to His Majesty in his recent bereavement, "caused by the death of our late Sovereign Lady Queen Victoria." The address further congratulates the King on his accession and prays that he may long occupy that exalted position and may worthily extend the beneficence of that rule "so happily inaugurated by her late Majesty."

IT is announced that the honorary degree of LL.D. is about to be conferred by the University of Edinburgh upon Sir John Williams, Bart., M.D., F.R.C.P. Lond.; upon Dr. James Little, Regius Professor of Physic in the University of Dublin; and upon Sir Robert Bannatyne Finlay, the Attorney-General. Sir Robert Finlay, who has attained such great distinction in the faculty of law, began his career as a medical man and graduated as M.D. at the University of Edinburgh. He is also a Fellow of the Royal College of Physicians of Edinburgh.

A TELEGRAM from the Governor of Cape Colony, Sir Alfred Milner, to Mr. Chamberlain, received at the Colonial Office on Feb. 27th, states that the bubonic plague report for the week ending Feb. 23rd was as follows: There were 29 cases remaining under treatment at the end of the week, seven deaths have occurred since the commencement of the outbreak, and there are 21 cases remaining under treatment and 167 "contacts."

WE regret to hear that the Lord Chief Justice is so unwell as to be obliged to cease work temporarily, though we are glad to learn that he is not likely to be much longer confined to his bed. There is no doubt that Lord Alverstone's illness had its origin in the atmosphere of the Central Criminal Court where he presided for six days over the trial

[1] THE LANCET, Jan. 4th, 1896, p. 82 et seq.

of Bennett. We shall have more to say concerning the condition of this court.

THE St. Patrick's Festival Dinner of the Irish Medical Schools' and Graduates' Association will be held at the Hotel Cecil on Saturday, March 16th (St. Patrick's Day falling this year on Sunday), at 7.15 P.M., the President, Dr. William Alexander, in the chair. Applications for tickets should be made without delay to Dr. J. Hutchinson Swanton, honorary secretary to the Dinner Committee, 40, Harley-street, W.

THE King, as Sovereign Head and Patron of the Order of St. John of Jerusalem in England, has approved the election by the Chapter-General of His Royal Highness the Duke of Cornwall and York, K.G., Sub-Prior of the Order, to the office of Grand Prior, vacant by His Majesty's resignation.

OWING to an epidemic of infectious disease, presumed to be influenza, which is prevailing on board H.M.S. training-ship *Britannia* the cadets were on March 2nd sent home for a period of three weeks.

MR. G LESLIE EASTES, M.B., B.Sc. Lond., who has been Laboratory Director of the Clinical Research Association, Limited, having vacated that post, has opened a laboratory for similar work at 62, Queen Anne-street, W.

HIS MAJESTY THE KING has signified to the President and Council of the Marine Biological Association his pleasure in becoming the patron of the association.

DR. HENRY WARD IRVINE has announced his retirement from the post of consultant to the Birmingham Consultative Medical and Surgical Institution.

THE YESTERDAY AND TO-DAY OF AURAL SURGERY.

BY SIR WILLIAM DALBY, F.R.C.S. ENG., &C.

THE rapidity with which events in any department of surgery crowd upon each other and engross the attention of those who practise our art leaves little time for reflection, but it may not be altogether useless sometimes to pause for a few moments and consider, not only the extraordinary changes which have taken, and are taking, place, but the influence which such changes may be expected to have on the future. After the foundation of the Otological Society of the United Kingdom, which did me the honour of electing me President, the first meeting was held on Feb. 5th, 1900. Subsequently all the meetings were largely attended, the interest never for a moment flagged, and there was more material (all of which was most valuable) than could be presented and discussed. Finally, after the session the Transactions were published.

Not so many years ago it was a prevalent idea amongst surgeons that there was not a great deal of surgery in aural surgery, and that those who practised it were chiefly, if not entirely, engaged in endeavouring to give relief to the symptoms of deafness, tinnitus, and pain in the districts within and around the ear. If any such person is alive at the present moment—and I make no doubt that there are many—let him read those Transactions to which I have referred. He will there find some 30 contributions. Most of the cases were shown, submitted to the careful examination of the members present, and discussed most thoroughly. Anyone who reads these Transactions will find nothing but modern surgery and pathology, and throughout the whole volume hardly a mention (beyond what was incidental to the cases) of deafness or tinnitus. In short, the gravity of the cases in regard to life hardly permitted more than a passing attention to these symptoms. The time of the meetings was chiefly taken up in discussing cases of cerebellar abscess recently operated on, cholesteatoma removed from mastoid and meatus, thrombo-phlebitis of lateral sinus, adeno-sarcoma removed, ossicles removed for long-standing suppuration, complete mastoid operation, papillomatous growths removed, epithelial grafting of the labyrinth after removal of the semi-circular canals, sarcoma of the temporal bone, epithelioma of the meatus, &c.

Surely in this list, which might be enlarged, there was no lack of surgery except that sort of surgery which was supposed to engage the attention (to the exclusion of all else) of the aural surgeon. A not altogether unnatural conclusion to which the reader might arrive is that the aural surgeons were so much engaged in, and so fascinated by, the operative surgery that has been mentioned that they had no time or inclination to bestow to what, after all, the multitude is seeking, the relief of deafness which so interferes with their occupations, their careers, their pleasures, and their happiness. Now this would be an assumption not in accordance with facts. It should be borne in mind that for many years past aural surgeons have been working incessantly and bestowing the most unremitting attention to the pathology of the changes which take place within the middle ear with a view, not only to their remedy, but their arrest and the protection against their advent, in this latter direction, especially in the case of childhood and early life, as our records, our daily practice, and results will show, with remarkable success. Let it be also remembered that nothing but the most laborious attention to details and the most careful watching of minute changes has effected this—so laborious that it has required faith in the possibilities that might follow to sustain the workers. One bit of knowledge (the fruit of experience) must always be present to the mind of the aural surgeon who intends to succeed with his cases, and this is that the most minute variations which are extraordinarily apt to escape the notice of a not very earnest observer make all the difference between bad and good hearing. This applies with especial force to middle-ear troubles, but in a measure also to nervous ones.

The surgery which our Transactions have displayed is no doubt very attractive. It is conceivable then, I repeat, that the reader might be led to think it possible that the more work a surgeon of this sort gets the less inclined he may be to trouble himself about the more wearisome and oftentimes disappointing though numerous cases in which the results are not so striking and life-saving. As one who has borne the burden and heat of the day I may be forgiven for assuming for the moment the position of the reader who asks this question and for sounding a note, not of warning, but rather of suggestion, to those who may be thinking of adopting a speciality the advancement of which has been the chief object of my life for some years. If it were necessary to do so I could point out endless examples in which nothing but the expenditure of a great deal of labour can teach the observer the best treatment of minor troubles and give him the delicacy in manipulation that is so necessary and so appreciated by the patient. Again, notwithstanding all the failures that have attended intra-tympanic operations preceded by incision of the membrane for the relief of obstruction within the tympanic cavity; notwithstanding that at some periods incision of the membrane was largely practised, at others given up (except in acute cases to let out pus), only to be revived again and again discontinued, the problem of relieving labyrinthine pressure will, I believe, some day be solved. Those who share this view with me will gain a ray of hope on reading in the Transactions a case by Mr. C. A. Ballance in which, when removing portions of dead bone from the petrous bone, "the semicircular canals were in part destroyed and the back of the vestibule opened." Later, after epithelial grafting operation, the hearing, which had been absent since childhood (there had been otorrhœa and mastoid disease), returned.

Whilst, therefore, I cannot but think that the reading of our Transactions will be a revelation to some as to the work which has been done, and so interesting a revelation that I venture to recommend their perusal, I should much regret if an impression should arise that any part of the province of aural surgeons was in danger of being neglected by our members, so I have anticipated the possible suggestion that may arise in order to combat it and dismiss it as untenable.

HISTORY OF RENAL SURGERY.

BY DAVID NEWMAN, M.D., F.F.P.S. GLASG.,
SURGEON TO THE GLASGOW ROYAL INFIRMARY.

II.[1]

NEPHROTOMY FOR RENAL CALCULUS AND FOR SEPTIC DISEASE.

IT is in the writings of the ancient Arabians that we first meet with a distinct indication that a desire occupied the mind of the surgeon to incise the kidney for the evacuation of an abscess or the removal of a stone. In the eleventh century Avicenna[2] (A.D. 1037) along with Rhases (A.D. 850) and Serapion (ninth century) had taken a distinct step backwards, and he recommended for bleeding from the kidney to inject the rennet of a hare. Avicenna, however, did not take a favourable view of incision for stone in the kidney. He states as follows: "Sunt qui laborant extrahere (calculum renalem) per incisionem ilii et per dorsum"; which he characterised as "Operatio ejus qui rationem non habet." Severe though this judgment may appear to be, it is still clear from Avicenna's words there is reason to believe that cutting the kidney was practised in his time, for without the practice having been employed the judgment above quoted would not have been given. Charles Bernard[3] says:—

> But from Avicen's words there is some colour to believe it was practised in his days, though undoubtedly if it were, from him talking so slightly of it it was only by persons of mean character, such, perhaps, as our mountebanks, who having no regard or concern for the lives of men and little reputation of their own to lose venture boldly and sometimes successfully upon those things which wary and more judicious men avoid.

And Turner (page 429) says of Avicenna:—

> There are some, saith he, who attempt to take the stone out of the kidneys by incision of the ilea, but there is a great danger therein and it is an unreasonable operation.[4]

In the fourteenth century Guy de Chauliac advocated the advice given by Galen—viz., the administration of drugs to break up the stone, and he regarded stone in the kidney to be beyond the sphere of the surgeon. He says, however, that should medical treatment fail, although it is dangerous, the stone should be cut out of the bladder, but for renal calculus no operation is justifiable. Cardanus (A.D. 1501) complained that the influence of the teaching of Hippocrates had become lost by his time and strongly advised the revival of the methods advocated by the great teacher. According to Turner he thus expostulates:—

> How many operations have we lost, which were common in the days of Hippocrates? Even Galen has been so far from making addition, that he has pretermitted many useful parts of Surgery, practised by him; such as the operation for the Empiema, the cautery for tumours on the liver, the perforation of the Cranium in the Hydrops Cerebri, the Extraction of the stone from the kidney, by section, and of water *inter* cutem. All which, though many, saith he, now take upon them to perform, yet not in the manner done by the direction of the divine old man, when very many were preserved; whereas now they die under the same, scarce one surviving out of many, notwithstanding their great pretences to know more than the Ancients.

He quotes a case of Albertus[5] who reported that he saw a woman, who having been long afflicted with the nephritic illness, the place being cut into, there were taken out 18 stones of the bigness of a die. Casper Bauhine, according to Turner,[6]

> Makes mention of a young girl, born of nephritic parents, who labouring long under suppression of urine, a swelling arose about the loins, which having long waited for suppuration to no purpose, and finding only an induration of the part, the surgeon boldly cut through the same, and drew forth a couple of stones; after which her water came right as formerly, the wound being healed up. This history, saith he, I had from my master Gulielmus Capellus when I was at Paris.

In the fifteenth century the most remarkable instance of an operation upon the kidney, and the first case in which nephrotomy is supposed to have been performed for the removal of a renal calculus from a kidney that was not suppurating, is related in the Chronicles of Jean de Troyes[7] and quoted by Ambrose Paré.[8] In 1474 a free-lance of Meudon or Bagnolet was imprisoned in Chastollet because of several thefts that he had committed in various places. He was condemned to be hanged. The physicians acquainting the king that many of the citizens of Paris were troubled with stone, colic, and affection and illness of the side, more particularly one of his nobles, Monseigneur de Bochaige, and that the free-lance had been similarly troubled, having long suffered under the same disease, it was their request to His Majesty that a dissection might be made for inspecting the particular seat thereof and that an endeavour be made to extract the stone during the operation, and that the malefactor's life might be granted if he survived the same. Accordingly, at the command of the king the section was made and he ordered that it should be done very carefully. The parts having been examined the wound was sewn up and within a fortnight the prisoner was completely cured, and he was granted remission of his crimes. The man is said to have lived for several years in excellent health. The account of this interesting case is not clear and the question has been raised whether the wound was made through the abdomen, in the lumbar region, or into the urinary bladder. Ambroise Paré says that the intestines were replaced and the wound sewn up. It is very reasonable to believe that the stone was in the kidney rather than in the bladder. There is mention made of the prisoner being subject to nephritic pain, as also pain in the side of the abdomen and from the kidney by the passage of the ureter. Besides, in these days the operation for stone in the bladder was not uncommon, and would not have attracted the attention of the profession as this case has done. It appears from the account of the case that the incision was made through the peritoneal cavity, or at least the cavity was opened. Paré himself discredits this operation, and it is very difficult to know how much importance to attach to it. Certainly Paré disapproved and condemned the operation of nephrotomy. The various accounts of this case differ considerably and it would be inadvisable to place too much confidence in them.

In the sixteenth century Roussetus (1581), who had considerable experience in the Cæsarean section, records two cases of operation upon the kidney, which, however, were followed by urinary fistulæ. In one case a pyonephrosis was opened by an actual cautery by Gérard and a drainage-tube was inserted to keep the fistula open for a period of 26 years. The second case was that of a man, 20 years of age, who had suffered from nephritic colic for a long time, culminating in the formation of an abscess in the thigh, which was opened by the surgeon, and a calculus of the size of a bean abstracted. The fistula remained open until the death of the patient by accident. Roussetus takes pains to prove the practicability of lumbar nephrotomy. As far as we can understand, he wished to open the abdomen at the side, grasp the kidney in front, and cut the stone out from behind, but he never defines this transperitoneal operation as one must define it now. Turner[9] says:—

> I find Rousset has taken pains to prove it practicable, instancing, farther, where it had been done, and even proving, from the Structure of the Parts, that a good Knife's-Man may cut into the same, without dividing any large Vessels; and that both the Muscles, and the Substance of the Kidney, will bear wounding; the whole of the latter being often found wasted by Abscesses and Ulcers that leave little more than its outward Capsule, which is found like a Bag full of Sand or Stones; Yet, after all, he owns there are difficulties in the way to the operation as, the uncertainty that there is a Stone which cannot here be explored, as in the bladder, and therefore, he says it must be the last Remedy, practised only, as his Cæsarean birth, when there is no possibility of delivering the woman otherways. His words are these:—Quo ad Renem videtur vulnus, non necessario esse lethale, sive spectemus actionem et usum proprium (modo alter ren sanus et integer fit suoque satisfaciat officio) sive spectemus ipsius substantiam cum per se satis oblaesus, imo saepe ex maxima parte putridus, et per consequens vel ex parte, vel ex toto mutilis, ita ut a bono, et exercitatissimo anatomico, qui solerti, sit manu, et in similibus casibus exercitatus, possit facile, et cum honore, haec sectio administrari, sed in corpore robusto, et cum judicio solum dissecans eum locum ubi calculum persentit, cavendo, quoad fieri potest, ne vel insertionem venae emulgentis, vel ureteris exitum laedat postmodum vero consolidationem naturae committens, quod a natura praestari id possit, praeter rationem non est. Franc. Rousset. de partu Caesario apud nos. Sect. 3, p. 66.

Roussetus eventually withdrew these proposals, but for what reason is unknown.

Schenck von Grafenberg (A.D. 1584), like many of his contemporaries, approached the subject from the philosophical standpoint, theoretically agreed with Roussetus, and distinctly advised the removal of calculi from otherwise healthy kidneys. A dissertation by the French anatomist

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[1] Part I. was published in THE LANCET of March 2nd, 1901, p. 649.
[2] Canon, lib. iii.
[3] Philosophical Transactions, 1696.
[4] Canon, lib. iii.
[5] De Varietat, lib. viii., ch. 44.
[6] Art of Surgery, second edition, vol. ii., London, 1725, p. 487.
[7] Les Chroniques de Jean de Troyes, appelées Histoire de Louys Unziesme, Autrement dicte la Chronique scandaleuse, publiées par Petitot; collection complète des mémoires relatifs à l'histoire de France, tome xiii., p. 452.
[8] Book 24, chapter xix., ex Monstrelati Chronicis.
[9] Art of Surgery, second edition, vol. ii., p. 487.

Roilan attracted considerable attention after the beginning of the seventeenth century. He was one of the first to point out that the concretions were formed in the pelvis of the kidney and in the ureter, and he distinguished between their form. In an article which appeared in 1618 he showed that the kidneys were situated behind the peritoneum and might be reached without opening the abdomen, but that on account of their deep position he considered that it was not safe to expose them unless the situation of the organ was revealed by an inflammatory swelling. From the beginning to the end of the seventeenth century several discussions took place as to the feasability of the operation, but comparatively little actual progress was made. But certainly towards the end of the century considerable advance had been made in philosophical opinion, and in 1700 Méry strongly advocated cutting down on the kidney in order to relieve patients who were unable to be helped otherwise. Besides the above-mentioned writers, Jean Ducledat (1620), Beverwyk (1638), and Sinibaldi (1650) contributed to the discussions.

Towards the end of the seventeenth century (1670) a very distinct advance was made in the method of inquiry. Previously to the time referred to physicians knew that a kidney might become destroyed by disease or be congenitally absent without seriously interfering with the health of the individual, but experiments upon living animals to show that life could be maintained after removal of one kidney had not yet been demonstrated. The Italian Zambeccarius[10] undertook various physiological experiments upon animals for this purpose. He was the first to suggest the operation of nephrectomy and in one animal the operation was successful. S. Blancard[11] (A.D. 1690) also successfully extirpated the kidneys of dogs and mentioned that kidneys containing stones or abscesses could be operated upon after ligature of the vessels. Several surgeons who saw his operations were of the opinion that they might be performed upon the human subject, but there is no evidence that any of them ever practised nephrectomy. Blundell also performed excision of the kidney in animals. By these experiments as well as by observations in morbid anatomy, a department of knowledge still in its infancy, the surgeon of the day came to recognise that the removal or destruction of one kidney was not inconsistent with life; but, notwithstanding these indications of advancement, many surgeons opposed all operations upon the kidney. Probably the most influential writer who took up the subject was the scholarly and accurate M. Hévin,[12] who saw and examined Mr. Hobson, the English consul at Venice, whose case was, as far as we know, the first authenticated case of nephro-lithotomy. The case is one which has led to much dispute, and while the decision of most writers has been against its authenticity it appears now to have been rejected by them on insufficient grounds. The case is so important that it is worthy of description in detail. It is also due to the memory of the operator to vindicate his right to the honour of having performed the first authenticated nephro-lithotomy. Dominic de Marchetti was born in Padua in 1626, and in 1654 he published his "Anatomia." In 1662 he succeeded his father as professor of surgery, and in 1680 he became professor extraordinary of practical medicine. He died in 1688, and according to an obituary notice in Papa Dopoli's History he is spoken of as having surpassed all his contemporaries in renown for anatomy, surgery, and physics. With respect to the history of nephrectomy Mr. Henry Morris[13] says:—

> The cases of the archer of Meudon, of the British consul at Venice, and others, which had found their way into surgical literature, may be dismissed in the words of M. Hévin, who wrote in the year 1757: "It is very doubtful, if not absolutely improbable, that cutting into the kidney had ever been practised without the operation having been determined by an abscess swelling or by a fistula due to renal abscess which had broken and discharged in the lumbar region."

And in a paper read before the Clinical Society of London Mr. Morris rejects Marchetti's case in the following words[14]:—

> A precedent of undoubted authority had been much needed to give encouragement to the treatment. Surgeons do not seem to have been convinced by Marchetti's operation, doubtless partly for the reason that he does not appear to have referred to it in his own writings, and that the description which has come down to us was written by one (Charles Bernard) who was not a medical man, and to whom the facts were not narrated until ten years after the event. If this operation by Dominicus de Marchetti, of Padua, upon the English consul Mr. Hobson, towards the end of the seventeenth century, consisted, as is believed by some, in the removal of calculi which could be felt through a sinus in the loin—or, as is thought by others, after laying open an abscess of the kidney—then there is no ground for belief that nephro-lithotomy has ever been performed.

The following is the record of the case given by Dr. Charles Bernard, F.R.S.,[15] a distinguished surgeon in London, Master of the Barber Surgeons' Company in 1703, and elected surgeon of St. Bartholomew's Hospital, August 26th, 1686, upon the special command of the king, who occupied the position of serjeant-surgeon to Queen Anne:—

> This gentleman who was consul for the English at Venice, having been long afflicted with the stone in the kidney, was at length attacked with a fit of that duration and violence that it reduced him almost to desperation, and finding no relief from any means that had been used, he determined to apply himself to Dominicus de Marchetti, who, as Ch. Patin in his Lyceum Patavinum tells us, was "Primarius practiciae Extraordinariae Professor" at Padua, a famed and experienced practitioner there, the son of Peter, both well known to the learned part of their profession. To this person, Mr. Hobson, under the greatest extremity of pain imaginable, addressed himself, imploring of him that having made use of all conceivable means and the best advice that was to be had in Venice, without success, he would be pleased to cut the stone out of his kidney, being fixed in his belief that no other method remained capable of relieving him; adding that he was not insensible of the danger, but that death itself was infinitely more eligible than a life in that misery under which he had long and did then groan. Marchetti seemed very desirous to have declined it, representing not only the extreme hazard, but as he feared the impracticableness of the operation, that 'twas what he had never attempted, and that to proceed to it was in effect to destroy him. But Mr. Hobson persisting that if he refused it, he would never desist till he found out one who would do it, Marchetti was at length, by his resolution and importunity, prevailed upon to undertake it; and having prepared him as he thought convenient, he began with his knife, cutting gradually upon the region of the kidney affected, so long, till the blood disturbed and blinded his work so that he could not finish it at that attempt, wherefore dressing up the wound till the next day, he then repeated and accomplished it by cutting into the body of the kidney, and taking thence two or three small stones, he dressed it up again. From this instant he was freed from the severity of his pain, and in a reasonable time was able to walk about his chamber, having been in no danger either from flux of blood or fever. Marchetti continued to dress the wound for a considerable time, but was not able to close it up, it soon becoming fistulous from the continual flowing of the urine through the sinus; but being in all other respects restored to his former health and vigour, and the matter discharged being little, he took leave of the professor and returned to Venice under the care and management of his wife, who, one morning, as she was dressing the sore, fancied she felt something hard and rugged as she wiped it, upon which, examining a little more carefully with her bodkin, which served her instead of a probe, she found it to be a stone of the figure and magnitude of a date-stone, which, being removed, he never after complained of the least uneasiness in the part. About 10 years after this he returned to London, where the learned Dr. Tyson and myself were, by Dr. Downes who had known him formerly in Venice, invited to see him, which we did at the Castle Tavern, in Paternoster Row, when, after we had received this account from himself, he gave us the satisfaction of viewing the sore, which continued open, and permitted me without any complaint (the callosity being great) to pass my probe into the sinus so far that we concluded it reached into the kidney; the matter it then discharged was but little in quantity, but always diluted with and smelt strong of urine. The orifice would sometimes close for three or four days together, and then the matter made its way through the common passages with the urine, yet without any difficulty or pain. There is no question but that there was a coalition of the kidney and the psoas muscle. When we saw it he applied nothing to the orifice but a clean linen rag which had a strong urinous scent. He was then as able in appearance to perform all the functions of life, and to undergo any fatigue, as any man of his years, being then, I conceive, upwards of 50, and was the next day to ride about 40 or 50 miles. I have heard that he is since dead, but could not be informed of what disease.

The question of the authenticity of this case is very fully discussed by Mr. Howard Downes.[16] He says:—

> Mr. Morris gives us five reasons for rejecting the case: (1) Dominicus de Marchetti does not refer to it in his own writings. (2) Charles Bernard, the reporter, was not a medical man. (3) The reporter only heard of the case ten years after the operation. (4) Some people believe that the operation consisted of removing calculi felt through a sinus in the loin. (5) Others believe that a kidney abscess was opened and calculi found.

Mr. Downes meets these objections very fully in the paper above referred to, so that this case seems to be the first authentic instance of a surgeon cutting down upon a kidney free from suppuration and extracting from it a stone. The case, however, remained a *curiosa chirurgica*, no surgeon following the example of Marchetti, and many, indeed, considered the operation as indefensible.

Schurrigius (1744) discusses the whole question under the name "nephro-lithotomy" and takes as a text the case of a certain General Herr von Brickholz, general-in-waiting to the King of Poland and Elector of Saxony, who suffered from stone in the left kidney. In this case, however, the

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[10] Experimenta circa divers Var. Animal Viv. esset. Visc. et Supplem. (act. nov. erudit Lipsiæ), sect. 6, p. 275.
[11] Article, Nephrotomia Lex. Med. Renovat. et Prax. Med., tome ii., cap. 13, pp. 252, 253.
[12] Mém. Académie Royale, &c., 1757, tome iii., p. 238.
[13] Hunterian Lectures, 1898, On the Origin and Progress of Renal Surgery.
[14] Transactions of the Clinical Society, vol. xiv., p. 34.
[15] Philosophical Transactions, London, for 1696, p. 333.
[16] Medical Times, vol. i., 1885, p. 238.

surgeon refused to operate because he thought the stones were blocking the ureter too low down to be reached. When the general died examination of the body showed the left kidney to be completely destroyed and occupied by several calculi. Schurrigius[17] is certainly the first to employ the word "nephro-lithotomy," the term employed by the older writers being "nephrotomy." Joachim Camerarius[18] (A.D. 1598) relates a case in which a surgeon successfully extracted a stone that was plugging one of the ureters in a nobleman who was suffering agonies from renal colic and who demanded something to be done for his relief.

During the eighteenth century marked progress was made in our knowledge of renal disease. Human anatomy came to be more carefully studied, at least by those who aimed at being competent surgeons, and was expounded more fully to the student. The study of pathology was called into existence also. It is true that previously to this time Malpighi and Swammerdam, by the use of injections and with the aid of the microscope, had given a wonderful impulse to researches into the minute structure. Wharton had investigated the structure of the glandular organs, William Harvey (A.D. 1666–1723) had discovered the circulation of the blood, while Aselli had demonstrated the existence of lymphatic vessels; but Morgagni, who must be regarded as the founder of pathology, had still his work to do and to make his extraordinary influence felt. In Italy, a country which still retained its pre-eminence in medical science, we find during this century Pacchioni, Valsalva, Morgagni, Santorini, Mascagni, and Cotunni; in France Winslow, D'Aubenton, Lieutaud, Vicq d'Azyr, and Bichât; while in Germany the accomplished Haller and Meckel were starting a school of medicine and preparing the way for the remarkable achievements of medical science in their country during the following 150 years. In Holland scientific progress was represented by Sandifort, Bonn, Albinus, Boerhaave, and Camper; while in Great Britain the two Hunters, Cowper, Cheselden, William Lawrence, Cruikshank, Charles Bell, and the Munros worthily developed anatomical and pathological science at home. The work of these men marked a great epoch in the development of the sciences and led up to an exact knowledge of surgery.

During this period there was considerable advancement made regarding the pathology of renal and vesical calculus and the situations in which they were liable to form. Previously the idea entertained was that stones were situated either in the substance of the kidney or in the hollow behind the kidney, and that the swelling or abscess associated with calculus ruptured into the kidney and caused a swelling externally. The most important contribution to the subject is that given to us by the scholarly and accurate M. Hévin[19] (1757) in his historical and critical researches into nephrotomy. He criticises the subject very severely and even the case of Consul Hobson he rejects. The following are his opinions in respect to nephro-lithotomy:—

> To establish the possibility of an operation it is not enough to presume that it will not prove fatal to the patient, but it is necessary that science can assure the execution of it. The plans for any great operation, which is wanting in the certain rules that science demands, can only be suggested by researches and views which may lead if possible to determine exactly the technique of the operation. Great operations are always very dangerous; therefore an operation whose execution is more uncertain than its success is not a lawful one, and can only be undertaken by a surgeon who is honest and religious.

With reference to cases in which suppuration has occurred and where fluctuation can be made out in the lumbar region, or if the abscess lies outside of the kidney, he recommends that the organ itself should be cut into and the stone removed from its pelvis, by opening the kidney with the cautery, and when fluctuation is not distinct a trocar and canula should be inserted, and the wound stretched out until it is large enough to permit the stone being removed. Mr. John Douglas,[20] a surgeon of Edinburgh, records a case of old-standing renal calculus. The patient died in 1731 and at the post-mortem examination he says:—

> Having always been of opinion that there was a stone in the right kidney, I resolved first to imitate the operation called by authors nephrotomy.

This he attempted, but the difficulty was so great on account of the very muscular condition of the subject that he failed to reach the stones and had to open the body in front.

(To be continued.)

[17] Litholog., Hist. Med., cap. 13.
[18] Schenck: Observ. Med., lib. iii.
[19] Mém. Académie Royale, &c., 1757, tome iii., p. 238.
[20] Medical Essays and Observations, vol. i., p. 186.

NOMENCLATURE AND CLASSIFICATION.

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A UNIFORM and logical system of nomenclature and classification is a great help in the study of any science. In medicine it is to be feared that such a system is impossible, but, at any rate, our present systems are capable of great improvement and it is my object to endeavour to show in what ways we can effect this improvement. Our conception of what a disease is will vary according to the standpoint from which we regard it. On the one hand, we can say that a disease is characterised by a definite causal agent, and on the other, that it is characterised by definite lesions. We, therefore, have two systems of nomenclature and classification—one based on cause and the other on effect. Both these systems are useful, and, indeed, necessary, but neither can take the place of the other. There are some names (e.g., syphilis) which have no inherent pathological meaning; these have mostly come to be regarded as having an etiological significance.

NOMENCLATURE.

The chief factors concerned in producing the unsatisfactory state of medical nomenclature are (*a*) the bias of antiquity, (*b*) the bias of authority, and (*c*) the progress of knowledge which has caused us to look upon diseases from a different aspect to that from which our forefathers regarded them. A name should comply with certain conditions: it should be classical, preferably Greek, in form; it should express by its derivation the condition to which it is applied; its form should correspond with that of other names expressing corresponding conditions; and it should not be too cumbersome. Although we cannot hope to create an ideal system of nomenclature we can improve the present system to a great extent (1) by removing illogical and redundant terms; (2) by always using corresponding terms to express corresponding senses; (3) by making new names to express new meanings instead of altering the meanings of established words; and (4) in the case of alternative words by choosing that which best expresses the condition.

1. *By removing illogical and redundant terms.*—The most important of the illogical terms at present in use are the prefix "pseudo-" and the qualifying adjective "false." It would be a great improvement in medical nomenclature if these two terms were entirely removed. Why, for instance, should we call a fibroma of a nerve a "false neuroma"? We might with equal reason call a fibroma of the kidney a "false adenoma." These terms have arisen from the advance of pathological knowledge and the consequent alteration in the meaning of terms. For example, the term "tuberculosis" used to mean a disease characterised by the presence of certain structures called "tubercles"; now, however, it means a disease due to the bacillus tuberculosis and, in consequence, some diseases which, having the necessary tubercles as characteristics, would rightly be included in the term in its old sense, now are indicated by the term "pseudo-tuberculosis." Among redundant terms which might be discarded with advantage may be mentioned "atheroma," "epithelioma," &c. The term "cirrhosis" should be used in a clinical sense only; "fibrosis" is a much better term to express the pathological condition of increase of fibrous tissue.

2. *By always using corresponding terms in corresponding senses.*—This is especially necessary in prefixes, suffixes, &c. Terminations:— *-trophy.*—This termination, which really implies nourishment, is always used to imply growth, and it should be restricted to this sense. *-plasia.*—This implies development and it should have this meaning whatever prefix is attached to it. The usual definition of hyperplasia that is given is "hypertrophy by increase in the number of cells," as opposed to simple hypertrophy, which is "hypertrophy by enlargement of individual cells." This, however, implies a meaning of the termination which is not found in the other words of which it forms part; moreover, it is not sufficiently definite because it includes too much. For instance, the term "hyperplasia of the liver" does not indicate whether the change is due to an increase in the number of the lobules of the liver or to an

increase in the number of cells in each lobule. Again, hypertrophy of the kidney may take place in three possible ways. 1. By an increase in the number of tubules and glomeruli. 2. By an increase in the size of individual tubules, the number remaining the same: (*a*) by an increase in the number of cells in the tubule, and (*b*) by enlargement of individual cells. With the ordinary meaning of the terms 1 and 2*a* would both be included in the term "hyperplasia," although they are totally distinct processes. I should call 1 "hyperplasia," 2*a* "numerical hypertrophy," and 2*b* "simple hypertrophy," and I should express the difference between hyperplasia and hypertrophy as exactly that between development and growth. That this is a true distinction is shown by the fact that hyperplasia, as I have defined it, only occurs during the period of development (at least, if compensatory in origin), and that simple and numerical hypertrophy are usually associated together. For instance, if one kidney fails to develop the other undergoes hyperplasia; but if one kidney, having developed, undergoes atrophy or is removed the other undergoes hypertrophy. *-ergia.*—We have the termination "-trophy" and "-plasia" to express growth and development, and I have proposed to introduce the termination "-ergia" to express functional activity; thus "hyperergia" would mean "increased functional activity." *-aemia.*—This termination has two significances, one referring to the condition of the blood and the other to the distribution of the blood in the vessels. This is unfortunate but it would seem to be unavoidable. The other terminations do not need discussion as there is no ambiguity in their use. Prefixes:—Prefixes should always be used systematically and in different words should express the same meaning. The prefix *a-* or *an-*, which really implies absence, is sometimes unfortunately used in the sense of diminution, as in the word a-trophy. In the word an-æmia it implies sometimes absence and sometimes diminution. Strictly speaking, "atrophy" should mean that the part though developed had not grown; it is, however, always used in the sense that the part which had grown afterwards has diminished in size. The prefix *ana-* is sometimes used in this sense, as in the term "anaplasia," which means "backward development." The prefix *hypo-* implies deficiency and should not be used as implying absence. The other prefixes need not be discussed. Suffixes:—*-oma.*—The suffix "-oma" should be limited to the designation of the true tumours and it should not be applied to other conditions. The term "atheroma," besides being redundant, is used in more than one sense and there would seem to be little advantage in retaining it. *-osis.*—This suffix expresses (*a*) an overgrowth or multiplication of the structure designated by the root to which it is affixed. Thus fibrosis means an overgrowth of fibrous tissue and fibromatosis implies multiple fibromata. (*b*) Sometimes this suffix implies that the cause of the disease is expressed in the root to which it is attached; thus anthracosis is a disease due to coal-dust, aspergillosis is a disease due to the growth of an aspergillus, &c. The suffix, therefore, has sometimes an anatomical, sometimes an etiological, significance. *-itis.*—This suffix has an anatomical significance and implies inflammation, and the root to which it is attached should express the organ or tissue which is inflamed. Some authors recently have expressed a wish that the term "inflammation" and the corresponding suffix should be removed from medical nomenclature. This, however, is impossible, as we should in that case have no terms to describe the inflammatory conditions as met with in the post-mortem room. A purely etiological nomenclature can never be suitable for the purpose of describing anatomical conditions, since a specific causal agent does not always give rise to the same morbid lesion, and no single lesion is always due to one and the same causal agent.[1]

3. *By inventing new terms to express new meanings instead of altering the meanings of established words which already have a definite significance.*—For instance, the word "diphtheritic" has long been used to describe a particular form of inflammation and there is no other word to express this meaning. When, however, the disease "diphtheria" was isolated and found to be due to a specific bacillus there was a natural tendency to limit the application of the term "diphtheritic" to conditions met with in diphtheria and so to alter its significance altogether. It is much more satisfactory to leave "diphtheritic" in its old sense and to use the term "diphtherial" as the adjective of "diphtheria." This is done by many writers and editors at the present day and it would be a great advantage if it were the universal custom.

4. *In choosing between two alternative names that one is to be chosen which best expresses the condition*—Thus, "leucocythæmia" is to be preferred to "leukæmia," and "fibrosis" to "cirrhosis," &c.

Nomenclature of tumours.—I have given elsewhere[2] my views as to the nomenclature and classification of tumours, so that I need say very little about them here. Simple or tissue tumours are to be named by affixing the suffix "-oma" to the root expressing the name of the tissue which constitutes the essential part of the tumour. Exceptions occur in the case of epithelial and endothelial tumours since the terms "epithelioma" and "endothelioma" have been applied to malignant growths. The place of these terms is taken by the terms "papilloma," "adenoma," "angeioma." I should call any simple epithelial tumour in which the epithelium forms tubes and spaces lying in a connective tissue stroma an "adenoma," whether the growth starts from a gland or from a surface epithelium. Carcinomata are to be named according to the kind of epithelial cells of which they are constituted; such words as "adeno-carcinoma" are not necessary and only lead to confusion. Cancer.—Most writers at the present day use the term "cancer" as synonymous with "carcinoma." In this sense the term is redundant and therefore unnecessary. It would be much more satisfactory to revert to the older meaning of the word as signifying any malignant growth, since we often have occasion to speak of malignant growths without specifying whether we are speaking of carcinoma or sarcoma.

Another direction in which reform is desirable is in the use of the word "coagulate." This is applied indifferently to the change which occurs in albuminous bodies by the action of heat, alcohol, &c., and to the changes occurring in the clotting of blood or muscle. There would seem to be no reason for this double use of the word.

CLASSIFICATION.

It may be said at once that it is absolutely impossible to find a system of classification which shall be useful for all purposes. A disease is not a definite entity, but is an action. It has been defined as "an abnormal interaction between the structure of the living body and its environment."[3] Our conception of disease is therefore inseparable from life. For example, we can speak of lead intoxication as a disease, but it is not the lead that is the disease, nor is it the effect that lead produces on the body, but it is the action of the lead on the living body. Since, then, diseases are not entities we cannot classify them in the same way as we classify material substances; we can only classify them according to the cause of the disease or according to the effects that are produced on the body. Classification by cause is useful for the systematic consideration of diseases, as, for example, in a text-book of medicine or surgery. When, however, we have to do with clinical symptoms or morbid conditions of the different organs the most useful system of classification is by the effects produced on the body by the causal agent. Whenever we make a diagnosis we make a mental classification by effect. We first observe the effects of the disease and then by successive stages we arrive at a conclusion as to the cause. We thus in diagnosis and in the post-mortem room argue from effect to cause and not *vice versâ;* in the systematic study of diseases, on the other hand, we often argue from cause to effect.

The confusion arising from the use of an illogical and unscientific system of classification is seen in the result of classifying tumours on an embryological basis. In this system carcinoma is said to be epi- or hypo-blastic in origin; those, therefore, who adopt this system must, if they are consistent, deny the existence of carcinoma arising from the renal, testicular, ovarian, or uterine epithelium. Moreover, since the neuroglia is almost certainly epiblastic in origin, the gliomata should be included among the epiblastic rather than among the mesoblastic tumours. At a recent meeting of the Pathological Society of London one of the members is reported to have doubted the existence of carcinoma arising from the hepatic cells because it has been suggested that these cells are of mesoblastic origin.[4] There is no reason whatever why we should classify tumours according to the layers of a three-layered embryo; it is much more scientific

[1] The Relation between Cause and Effect in Disease, Brit. Med. Jour., Dec. 15th, 1900.

[2] Journal of Pathology and Bacteriology, vol. vi., p. 220.

[3] Harry Campbell: The Causation of Disease, London, 1889.

[4] THE LANCET, Jan. 19th, 1901, p. 180.

to classify them on a histological basis, since we can observe their structure and can only infer which embryonic layer they belong to.

Any classification should satisfy certain conditions. 1. It should be based on observable facts and not on inferences. 2. In dividing a class into sub-classes the basis of division must be the same for each sub-class formed; thus it is wrong to divide cirrhosis of the liver into multilobular, monolobular, and syphilitic, as is done in many text-books. 3. The sub-classes of any class should be mutually exclusive—i.e., there should be no overlapping. 4. The sub-classes when added together should include the whole of the class and no more.

Classification by cause.—The factors concerned in the causation of disease can be divided into (*a*) extrinsic and (*b*) intrinsic. A cause which is extrinsic as regards a particular organ may be intrinsic with regard to the whole body. Causal factors can also be divided into (*a*) essential and (*b*) adjuvant, the essential cause being that without which the disease could not occur and the adjuvant causes being those which assist in the production of the disease without in themselves being individually necessary. We can therefore classify diseases as follows. 1. Diseases in which the essential factor is extrinsic—(*a*) parasitic diseases; (*b*) intoxications; (*c*) diseases due to physical or chemical irritants; (*d*) diseases due to alteration in amount or pressure of the surrounding medium; and (*e*) diseases due to altered nerve-supply, &c. The processes concerned in these diseases are inflammation, consecutive atrophy, consecutive hypertrophy, degenerations, &c. 2. Diseases in which the essential factor is intrinsic. For example, those diseases which are characterised by the processes primary atrophy, progressive hypertrophy, tumour formation, maldevelopment, &c. The actual nature of the intrinsic factors in the causation of disease is unknown to us; we cannot, therefore, subdivide the second class in the same way as we can the first. It is obvious that it is very difficult to allot a place to every disease in this system of classification.

Classification for general pathology.—General pathology is the study of pathological processes, their causes and effects, without reference to any particular locality or disease. In any scheme of classification for general pathology we must provide for certain processes or conditions which may be called "physical"—namely, those processes or conditions which depend purely on physical causes. Such are the distension of blood-vessels in obstruction of the circulation and the emptying of the vessels beyond the obstruction, the distension of ducts from obstruction, wounds, deformities, &c. We might classify the pathological processes as to cause in accordance with the scheme given above, dividing them into (*a*) consecutive processes, and (*b*) primary processes. We should subdivide (*a*) according as the processes are the result of irritation, alteration of blood-supply, nerve stimuli, functional activity, &c. This method has the disadvantage that the processes "atrophy," "hypertrophy," &c., would appear under (*b*) and also under most of the subdivisions of (*a*). We might, on the other hand, classify them according to the nature of a process thus: (*a*) alterations of development; (*b*) alterations of growth; (*c*) alterations of functional activity; (*d*) degenerations, &c.; and (*e*) physical. The best method, however, is as to the results of the processes.

If we consider the strictly pathological processes we find that we can divide them into three groups. 1. Those which are characterised by a destruction or diminution of tissue or functional activity (destructive processes). Such are atrophy, hypo-ergia, &c. 2. Those which are characterised by a replacement of tissue or functional activity lost, or by an increase to meet extra demands (reparative processes). Such are repair. regeneration, and the compensatory processes. Inflammation would also come under this heading as a preparation for repair. 3. Those which are characterised by an actual increase of tissue or functional activity beyond the needs of the organism (constructive processes). Such are tumour formation, &c. I should subdivide the first group into primary and consecutive processes, and the third into those which are collateral, such as hypertrophy from increased blood-supply without any demand for extra work, and those which are progressive, such as tumour formation, &c.

Our knowledge of the infiltrations is too incomplete to allow us to assign them their proper place in this classification. In accordance with custom they may be provisionally classed with the degenerations.

SCHEME OF CLASSIFICATION FOR GENERAL PATHOLOGY.

A. Etiology, including parasitology.
B. Developmental errors: monsters; malformations (aplasia, hypoplasia, hyperplasia, and kakoplasia—i.e., irregular development); and malpositions.
C. Physical processes: deformities; displacements; solution of continuity; distension of tubes and spaces; and blocking of tubes and spaces.
D. Cessation of physiological processes: necrosis.
E. Destructive processes: consecutive (atrophy, anergia, &c.; degenerations, &c.); and primary (atrophy, anergia, &c.).
F. Reparative processes: inflammation, repair, regeneration; compensatory hypertrophy; compensatory hyperergia; and compensatory metaplasia.
G. Constructive processes: collateral—e.g., hypertrophy from increased blood-supply; and progressive (progressive hypertrophy, progressive hyperergia, progressive metaplasia, and tumour formation).

Classification for macroscopic morbid anatomy (museum or post-mortem room).—In the arrangement of a museum one section should be devoted to specimens illustrating general pathological processes. This section is best arranged on an etiological basis and it should contain specimens illustrating the various processes and also typical specimens illustrating diseases which are not limited to any particular organ, such as tuberculosis, metastatic carcinoma, &c. It should also contain specimens of the various parasites, animal and vegetable. The rest of the museum should be divided into sections corresponding with the different systems, each of these sections being subdivided according to the organs in the system. In the case of the bones classification should proceed according to the scheme to be given before subdividing according to individual bones, and this should be the case with regard to the joints, muscles, &c. The primary classification should be based on the macroscopic appearances and not on etiology. Cause should be used as a basis of subdivision. In this scheme the inflammatory conditions present the greatest difficulty. I think that the best division is into non-suppurative, suppurative, and ulcerative; they could then be subdivided into diffuse and nodular conditions. Fibrosis (sclerosis in bone, &c.) should be accorded a separate class because it is not necessarily a post-inflammatory condition. Inflammatory conditions and tumours should, if possible, be subdivided according to the portion of the organ affected; thus, tumours of bone should be divided into central and peripheral growths. Cathcart[5] advocates the classification of a museum on an etiological basis, but his system is open to many objections. In the post-mortem room, as at the bedside, we argue from effect to cause and not *vice versâ*. If, then, the museum is to be of assistance in clinical work the primary basis of classification should be the effects produced on the organs by disease, cause being used as a basis of sub-classification. Another objection to Cathcart's system is that similar conditions of an organ, instead of being placed together, would be found under several headings; there is also an unjustifiable separation of syphilis from tuberculosis, the one being called a blood poison and the other a local irritation.

SCHEME OF CLASSIFICATION OF THE MORBID CONDITIONS OF THE DIFFERENT ORGANS.

A. Alteration in form or position: malformations; deformities; malpositions; and displacements.
B. Alteration in structure: metaplasia—e.g., ossification of tendons.
C. Solution of continuity: wounds, fractures, &c.
D. Repair—e.g., cicatrices, healing of fractures, &c.
E. Disturbances of circulation: hyperæmia, embolism, &c.
F. Retrogressive changes: atrophy; and fatty, calcareous changes, &c.
G. Inflammatory conditions: non-suppurative (diffuse and nodular—e.g., tuberculosis, &c.); suppurative (diffuse—e.g., cellulitis, and abscess; and ulcerative).
H. Fibrosis (sclerosis).
I. Necrosis (gangrene).
J. Hypertrophy: compensatory and progressive.
K. Tumours.
L. Cysts.
M. Animal parasites *in situ*.

Classification for clinical purposes.—It is not possible to give a complete scheme of classification for clinical purposes, since it will necessarily vary according to the organ which is affected. The natural system is one based on the symptoms to which the diseases give rise. Thus, we speak of diseases of the liver associated with ascites or jaundice and we divide affections of the serous membranes into those with and those without effusion, &c.

Classification for histological purposes.—In classification for histological purposes we use as our basis the histological characters of the lesions found in the disease; thus, we divide inflammations of the kidney into glomerular, tubal, and interstitial nephritis. In describing the microscopic

[5] Classification in Pathology, Edinburgh Medical Journal, 1896, vol. xlii., pp. 37, 141.

appearances of any lesion we should not use words implying an etiological classification such as "syphilitic cirrhosis," "scarlatinal nephritis," &c. As examples of these various systems of classification let us consider cirrhosis of the liver. 1. Classification according to the cause: (*a*) alcoholic; (*b*) syphilitic; (*c*) biliary; and (*d*) post-febrile, &c. 2. Classification according to the symptoms: (*a*) cirrhosis with ascites; and (*b*) cirrhosis with jaundice. 3. Classification according to the macroscopic appearances: (*a*) small cirrhotic liver; and (*b*) large cirrhotic liver; or (*a*) hobnail liver, and (*b*) smooth cirrhotic liver. 4. Classification according to the histological appearances: (*a*) multilobular; (*b*) monolobular; and (*c*) pericellular. 5. Classification according to the nature of the fibrotic process: (*a*) inflammatory; (*b*) replacement; and (*c*) progressive. It will be noticed that no two of these classifications coincide and that a system which is suitable for one purpose is not suitable for another.

In the foregoing remarks I have endeavoured to indicate some of the rules that should guide us in the construction of names and schemes of classification. It has been impossible to give more than a few examples, but those given are, I think, sufficient to show that nomenclature and classification should proceed according to definite rules and not in the hap-hazard manner which is too common at the present day.

Leeds.

THE ROYAL COMMISSION ON SOUTH AFRICAN HOSPITALS.

(Continued from p. 657.)

III.

IN our issue of March 2nd we gave an abstract of the report of the Commission as far as it dealt with matters up to the occupying, and advance from, Bloemfontein. We now continue the abstract of the report as it deals with the advance to Pretoria and the incidents which occurred on the way.

The advance to Kroonstad was, say the Commissioners, similar in most ways to the advance to Bloemfontein, though the condition of affairs was somewhat better. The sick and wounded accumulating during the advance were sent back to Bloemfontein, except some who were detained for a time at Glen and at Karee. As to the passage by railway from the rail-head to Bloemfontein the Commissioners say:—

As a rule the men were properly supplied with necessaries, but there were cases of prolonged detention when there was a deficiency of supplies. And the open trucks which had generally to be used for the less serious cases must have caused hardship to their occupants. We ought, however, in considering this subject, to observe once for all, with regard alike to this particular advance, to the advance upon Bloemfontein, and also to the subsequent advance of the army to Johannesburg and Pretoria, that, though men may have fallen out from the ranks during the march, there is no real foundation for the suggestion that to any appreciable extent sick or wounded men were left lying on the veldt unattended.

There is one incident connected with this advance referred to in Mr. Burdett-Coutts's evidence which we should particularly notice. It concerns the repulse of the Inniskillings and the Scots Greys. It is said that the wounded were left unattended from 9 A.M. to 4.30 P.M. and that they were then taken to a tin hut by Major Eames, of the New South Wales Bearer Company, and left in charge of a civil surgeon there; that two days afterwards an order was sent to the civil surgeon that the hut must be evacuated; that he protested, on the ground of the condition of the patients, against the order, but that he was obliged to carry it out notwithstanding his protest, and that the sick and wounded were sent away by ox-wagons, excepting only three officers who were detained in the tin hut under the care of a doctor. Mr. Burdett-Coutts adds that it appeared to him that the detention of these three officers alone was an unfair distinction. The facts of the case appear to be as hereafter stated, from which it will appear that any suggestion of unfairness in the treatment of the officers and privates is wholly unfounded. The troops were mounted and had been fighting a skirmishing action in front and it was quite impossible for ambulances to keep up with them. When the loss to the Inniskillings and Scots Greys occurred the wounded could not be collected until some ambulances came up. The first to come up were the ambulances of the New South Wales Ambulance Corps which was well in front and provided with good horses instead of mules. These ambulances at once gathered the wounded men without any undue delay and took them first to a Kaffir kraal where they were tended for a night, three surgeons being present, one of them a gentleman temporarily serving as a private. The next day the men were removed to a tin house at Ventersberg Siding and there they were operated on and carefully and properly attended to by the three surgeons, assisted by Mr. Cheatle, one of the civilian consulting surgeons. Then the surgeon who had been previously serving as a private volunteer was left in charge after his skill had been tested by the other surgeons. Some days after this the wounded in the hut had to be removed, so far as they could be without injury to themselves, on account of the military situation and the fact that the enemy were threatening the position. Before the removal three surgeons had consulted together and selected those patients who, in their opinion, could be removed with safety. No protest of any kind was made in respect of the removal by any surgeon. They all agreed that the patients who were sent could properly be removed. Three patients, and three patients only, were kept because their condition was such that they could not be transported with safety to themselves. Of those, two were officers and one was a private. Their injuries were very severe. They were kept wholly irrespective of rank and entirely upon considerations of their medical condition. That no question of rank entered into the determination of the matter is obvious, not only from the nature of the wounds of the men who remained, but from the fact that amongst the patients who were sent away were included three officers.

Glen and Karee Siding Hospitals.

We may here deal shortly with the condition of the hospital at Glen. Between 200 and 300 patients were kept there during the advance under the charge, as above mentioned, of the 14th Brigade Field Hospital. Complaints have been made, and justly, with regard to the site of the hospital. It was, no doubt, a bad site and unsuitable for a hospital. Lying in a hollow, it was liable to become extremely damp during wet weather, and, accordingly, we find that the men in the tents did complain greatly of the state of the ground on which they were lying, and said that they had become worse instead of better since they had been placed there. The Rev. Robert McClelland, acting as a Presbyterian chaplain to the forces, who gave evidence as to the condition of the hospital, visited it on the 28th April, and he points out how, on removing the waterproofs under the blankets of the men, he discovered a fungus growth existing there. This is sufficient in itself to show the nature of the ground. We inquired from the officer who selected the site (Major Faunce) how it came to be chosen. He said that it was the only possible site that could be selected, because there were military reasons against encamping on higher ground, and then goes on to say: "We should have been behind the outposts and there were other military reasons; in fact, there was no other ground at Glen where we could have encamped, and it was the only clean piece of ground."

It is difficult for us to judge whether another and better site might not have been selected. The hospital was, in fact, evacuated shortly after Mr. McClelland visited it. Apart from the nature of the site there are not many complaints with regard to this hospital except those inseparable, as previously pointed out, from the fact of a field hospital being used as a fixed one. Probably it is to this evacuation that Mr. Burdett-Coutts alludes when he speaks of a convoy being subjected to nameless torture owing to the patients being huddled together in rough springless ox-wagons and jolted over spruit and drift for 40 miles. In his evidence he informed the Commission that in his statement he referred to a convoy which came from Glen some time about the 28th April, and as the 14th Brigade Field Hospital reached Kroonstad on the 14th May Mr. Burdett-Coutts's date would coincide closely with the period of its evacuation. It should be noted, however, that Glen is only 14 miles from Bloemfontein and not 40 miles.

With regard to the temporary hospital formed at Karee it appears to have been overcrowded and to have had the usual drawbacks attributable to a hospital formed under its conditions.

KROONSTAD.

With regard to Kroonstad itself the town was small and the buildings which had to be taken for hospitals—the only existing hospital being full of Boers and British prisoners—were not well suited for the purpose. There were undoubtedly great pressure and corresponding discomfort for the patients, but after the line to Bloemfontein was open the state of matters improved. The army of occupation arrived on May 12th and soon after the state of matters is well shown in the following extract from the report:—

On the 16th May Major Ford of the 18th Brigade Field Hospital took charge of the buildings. Several witnesses bear testimony to the great credit due to this officer for what he did under very trying and adverse conditions, and in our opinion the work he did was, under the circumstances, remarkably good. Those difficulties, as may be easily seen, were very great. For the first few days the staff of the 19th Brigade Field Hospital had practically alone to look after all the sick and wounded in the town though the field hospital of the 3rd Cavalry Brigade appears to have been there for two days. (*Vide* Minutes of Evidence—Captain McMeekan.)

Such a staff was wholly insufficient in numbers and equipment to look after the patients requiring attention. At the time that Major Ford took over the buildings there were in the Kroonstad Hotel 16 officers and 127 men (not 200 as one witness has stated). These men were placed chiefly in the dining-room of the hotel, and all, with the exception of about a dozen, had mattresses. With regard to these latter men, directly Major Ford took command of the building he at once commandeered mattresses for them, and on the next day all the patients in the hotel were provided for. Dr. Manning, a local doctor, was placed in charge of the Grand Hotel to which about 150 patients were removed from the field hospitals on Lord Roberts's advance. Dr. Manning as a civil surgeon was, of necessity, not much experienced in military hospitals, but did well under the circumstances, having to assist him only 15 untrained orderlies. This hotel had not been prepared for the reception of the patients when they first came in, and the rooms in which they were placed were very inconvenient. Great discomfort was, of necessity, suffered by the men, and there was great difficulty in attending to them at all. The men had to lie on the tables and floors of the buildings, and could not be, and were not, properly looked after or nursed for the first few days. But all the patients within three days after the occupation of the hotel had mattresses to lie upon, or their equivalents, and the worst cases had change of clothing provided for them within two days after the hotel was first taken. On the 22nd May Major Ford cleared some of the patients from this hotel to the Rest Camp which had been prepared, and within the next three days the hotel was cleared of all the patients except a few officers who were left in the small rooms on the upper floor, where, having their own servants, they could be properly attended to. There these officers remained until the hotel was closed altogether as a

hospital. Of the privates sent out from this hotel by Major Ford 50 were sent to the Rest Camp, 60 were sent down by convoy to Bloemfontein, and the rest were accommodated in the Dutch Church which was then taken over and turned into a hospital.

On the 17th May the Town Hall was taken and patients placed in it. It was small and inconvenient and very unsuitable for a hospital and was only used because of the great pressure for room existing at the time. 70 patients were temporarily placed there, but the building was only used as a hospital for four days and was then closed. During these few days the men there, or most of them, had mattresses to lie upon, but they must have suffered considerable discomfort. When the hall was given up the patients in it were moved to the Dutch Church. During the temporary occupation of this town hall no separate doctor was in attendance and the patients had to be looked after by the doctors attached to other buildings when they could be spared.

The Dutch Church was first taken and used as a hospital about the 20th May. It was the best building in the town available for the purpose, being large and airy. There was a difficulty originally in ventilating it properly owing to most of the windows being permanently closed, but this difficulty was overcome by the tops of the windows being broken. The church had not a stone floor, as was stated inadvertently by Mr. Burdett-Coutts; it had a wooden floor and the building stood in a large and airy compound which was soon utilised for the sick and wounded by tents being placed in it. For this purpose the compound was very suitable. It had not been used as a burial ground, as has been suggested, but was a perfectly sanitary and good site. Mattresses were obtained for all the patients as they were moved into this church.

In these ways accommodation of a rough kind was provided for all the sick and wounded in Kroonstad. For the first few days after its occupation there were very few doctors in the town, though their number has been somewhat understated by some witnesses owing to their not being aware of, or forgetting, the existence of the doctors in the Boer hospital. At first there were only five doctors in the town. Then shortly afterwards, and before the 25th May, two more doctors arrived. But these were too few in number to properly look after the number of sick and wounded in the town. Orderlies, and especially trained orderlies, were also insufficient in number, and could not cope properly with their duties. There was also an insufficiency of bedpans, commodes, urinals, and so forth. These deficiencies of necessity led to results similar to those which we have pointed out with regard to Bloemfontein in its early days and need not be repeated here. On the other hand, there appear to have been at Kroonstad sufficient medicines, medical appliances, and comforts, such as brandy, wine, jellies, &c.

Owing to the above condition of matters, and also to the fact that Kroonstad itself was for some time threatened by the enemy, it became advisable that all patients who could stand the journey should be removed by convoys to the rail-head for the purpose of being sent down by rail to Bloemfontein. For some time the rail-head to which they were sent was the station at Zand river, the railway between that and Bloemfontein being ready at a comparatively early date. Accordingly, patients were selected to be sent down. The best selection we believe was made that circumstances permitted; at any rate, we are satisfied that the medical officers did their best to judge fairly as to the condition of those selected for the journey, though, of course, in individual cases mistakes may have been made. The men were sent down with such provisions for their comfort during the journey as could in the emergency be provided. But at times (especially when the enemy threatened the town and the lines of communication) the convoys had to be sent hurriedly, and the provisions for their journey down could not be made in a satisfactory way. To many men in some of these convoys there must, of necessity, have been considerable suffering caused during the journey, but as a whole they bore the journey well. Surgeon-General Wilson in his evidence says that he saw them on their arrival at Bloemfontein up to the date he left that town and that they arrived in a satisfactory condition. But it was not always possible to send any convoys away, owing to the interruption of the lines of communication by the enemy. For example, on the 20th May, a convoy had been arranged to start with 200 men in it for Bloemfontein, and the men were put into the wagons prepared. It was then found impossible for the convoy to be sent with safety and the men had accordingly to be shifted and accommodated again in the town.

On the 22nd May the advance of Lord Roberts from Kroonstad commenced, and of course the field hospitals, having to accompany the troops, were cleared of patients who had to be accommodated elsewhere. All the field hospitals did not accompany the advance, inasmuch as one-half of the 18th Brigade Field Hospital had to remain behind until the general hospitals could be got up to Kroonstad. We have evidence as to the state of the buildings occupied as hospitals at the date of the advance. According to Major Ford it appears that in the Grand Hotel there were 174 patients with one medical officer and 20 orderlies (mostly untrained) to attend upon them. In the Kroonstad Hotel there were about 25 officers and 170 men to be attended to. In the Dutch Church and Compound there were 200 patients, 90 being in the church itself; to attend to these there were two medical officers and four trained orderlies, the rest being merely regimental. In the Russo-Dutch Hospital there were 20 officers and from 80 to 100 soldiers with two doctors to attend. This does not show a satisfactory state of things.

By the 25th May the railway line up to Kroonstad was made fit for traffic and on or about this day the first train from Bloemfontein arrived. The opening of railway communication greatly relieved the pressure of things in Kroonstad. Surgeon-General Wilson came by the first train and brought up the *personnel* of the Scottish Red Cross private hospital, and the staff and equipment of half of No. 3 General Hospital, the remaining half arriving shortly after. He also brought some nurses, orderlies, and hospital equipment. On the 26th May there were sent from Bloemfontein to Kroonstad 500 mattress cases; on the 1st June 200 beds were sent up, and 300 more on the 6th.

No. 3 General Hospital on its arrival helped to supply beds for such patients in the buildings used as hospitals as had up to that time only had mattresses to lie upon. Part of the staff of this general hospital took over the Dutch Church from the 18th Brigade Field Hospital, which then advanced and joined the army at the front. No. 3 General Hospital opened and took in about 140 patients on the 28th and 29th May. In this hospital, for the first few days after its occupation slight cases had to remain in bell-tents lying on mattresses. The severe cases were accommodated in marquees.

Professor Henry Edward Clark, chief surgeon in charge of the Scottish Hospital, in his evidence shows how urgently aid was needed at Kroonstad on the 25th May when he arrived. He found all the buildings which had been taken as hospitals overcrowded; for instance, he found men in the Grand Hotel lying on and under the billiard table and on the settees and floors. All had mattresses, but three-fourths of them had no bedsteads to lie on. Owing to the lack of orderlies and utensils he found that some men had remained unwashed for some few days and that their clothing remained unchanged, even, in a few cases, when fouled by evacuations. He further says that sometimes men could not get proper comforts and that there was a temporary deficiency of certain medicines, and he adds that this condition of affairs lasted till about the 8th June. Dr. Cowan, of the same hospital, however, points out that the very severe cases were attended to, and other witnesses show by their evidence that all essential drugs were forthcoming.

Immediately the railway was opened patients were sent down by it to Bloemfontein both from the buildings and from the field hospitals. For this purpose the hospital train, which had been telegraphed for by Surgeon-General Wilson immediately on his arrival in the town, was used for the conveyance of severe and bad cases, and the men in these hospital trains could be, and were, sent to Bloemfontein with comfort. Cases not so severe had to be, and were, sent by ordinary trains. A selection was made as to the men to be sent down and as to the kind of train by which they should travel. As a rule, we think that proper food and comforts were provided for the men on their journey, though there have been some complaints in certain cases where food and proper comforts are said to have been insufficient. No doubt cases of the kind did occur, though not, we think, frequently. In the case of the ordinary trains, owing to lack of better carriages, some patients had to be sent down in open trucks. These were slight and non-fever cases. Some of these trains had no doctor or trained orderlies accompanying them, for the reason that at Kroonstad at the time there were none available to send. But in these cases regimental orderlies were sent, and some of these being medical students who had volunteered were very suitable for the purpose. The food and comforts necessary for the journey were committed to the care of the senior non-commissioned officer accompanying the train. However, at times there must undoubtedly have been considerable suffering in these trains.

In one respect Kroonstad differs from Bloemfontein, inasmuch as from its very first occupation commandeering was resorted to, and in this way most necessaries were obtained for the hospitals. We think, however, that with regard to a few things commandeering was not pushed to the full extent that it might have been.

On the day after Kroonstad was first occupied the landrost was told to commandeer for 200 mattresses and 400 blankets. He did so and obtained the quantities required and even more, and these were put into the Dutch Church. The landrost also obtained stretchers and had more made. He further commandeered for and obtained many bedsteads and much linen. Still there was a delay in obtaining a few articles; for example, more bedsteads might have been obtained at an earlier period. Professor Clark says that some beds were required by his hospital and were bought by his junior officer in the town as late as the 10th June. We can only attribute this delay in the early days to the confusion caused by the military occupation of the town and the fact that the medical officers were wholly occupied with looking after the sick and wounded. But this does not explain the later delay, unless, indeed, the landrost's explanation be correct—namely, that more bedsteads were not commandeered or ordered because, even had they been obtained, there was no room for them at the time in the buildings which were then occupied. At the same time, as Professor Clark points out, the patients did not appear to suffer to any serious extent from the lack of bedsteads, and he endorses the statement that several of the rooms in the building which had been taken and which were being used could not have accommodated so many patients if more bedsteads had been used.

With regard to fresh milk there was the usual deficiency, but though a few individuals in the town may have been able to obtain some we think on the evidence as a whole that no substantial increase of milk could have been obtained by the medical authorities.

By the 3rd June the trains had removed so many patients that the overcrowding in the town was greatly reduced, and by the 8th June its troubles were to a great extent over. It is clear from Colonel Richardson's evidence that there were at Kroonstad, from and after the 9th June, ample supplies of all kinds for the hospitals at Kroonstad. All witnesses are practically agreed that by the third week in June matters were put on a satisfactory footing and the grounds of complaint to which we have called attention disappeared. As things improved the buildings which had been taken were gradually cleared of their patients. The Kroonstad Hotel was cleared on the 21st June, the Russo-Dutch Hospital on the 27th June, the Dutch Church on the 31st July, and the Grand Hotel (which had only been used for officers from the date of the arrival of No. 3 General Hospital) on the 31st August, shortly before the Commissioners arrived there.

We have investigated the subject, and on the whole, bearing in mind the difficulties in the way, we think there was no undue delay on the part of the medical authorities in getting up the general hospitals. As we have pointed out, No. 3 General Hospital arrived practically on the very day the railway was opened, and could not have been got up earlier. The Scottish private hospital arrived on the 27th of May, complete except as to some huts which were heavy and which arrived soon after, and it opened on the 4th June.

We do not think, looking at the position of matters, that blame can rightly be attached to the medical authorities for not sending up, before the railway was opened, doctors, trained orderlies, or nurses, in carts (as it has been suggested they might have done), even assuming doctors and trained orderlies to be available for the purpose. The fact that it was possible for a private individual like Mr. Burdett-Coutts to get up to the town with cart and mules does not, we think, justify an inference that it was practicable for the authorities to have sent up staff in this way.

As already pointed out from the evidence of Lord Roberts it is clear that the amount of sick and wounded at the time of the first occupation of the town was more than could have been reasonably anticipated.

The troubles at Kroonstad which we have pointed out were undoubtedly chiefly due to three causes—namely, the insufficiency in number of the field hospitals, the deficiency of the Royal Army Medical Corps staff, and the difficulties of transport.

JOHANNESBERG.

The army left Kroonstad on May 23rd and reached Johannesburg on May 31st. No great difficulties arose on the march and the Commissioners state that there was no lack of suitable buildings for hospitals and that on the whole the patients therein were well looked after. There was a good deal of friction at the hospital in the Victoria Hotel which somewhat hampered its working.

PRETORIA.

Pretoria was occupied on June 5th and the report says:—

When the British force first occupied this town on the 5th June the field hospitals accompanying it brought with them many sick and wounded. There were good buildings which were suitable for hospitals and there was no difficulty in procuring hospital necessaries and equipment in the town, or from Johannesburg, which was within easy distance. Steps were at once taken to prepare and equip some of the buildings, in which many of the patients were placed, but the equipment put in was in many respects deficient at first, and there was a delay of several days on the part of the medical authorities in remedying this deficiency. Moreover, the best building in the town, the Palace of Justice, was not taken for a hospital as quickly as it should have been. Surgeon-General Stevenson's explanation on this head is that he had, immediately on his arrival with the forces, considered the advisability of taking that building as a hospital, but thought he had sufficient other buildings available, and that there might be a difficulty in warming and ventilating such a large place, and he so informed Lord Roberts when the latter suggested its being taken. But on or about the 13th June the question was reconsidered. There is a little discrepancy between some of the witnesses on this subject as to how ultimately it came to be taken, but that is a matter of but slight importance. The essential fact is that shortly after the 13th June it was taken and equipped by the army medical and military authorities and the care of it was then committed by Lord Roberts to the Irish Hospital, of which Sir William Thomson was the chief surgeon in charge. That hospital had come on with the advancing force from Johannesburg and immediately on its arrival at Pretoria had pitched its tents on the racecourse, and had to keep, or take in and temporarily provide for, rather over 100 patients, whereas it was equipped at that time for only 50. It was originally equipped for 100 patients, but half of the staff had been left behind at Bloemfontein. For some few days, therefore, in this hospital on the racecourse only 50 patients could be provided with mattresses and stretchers to lie upon, the remainder of the patients having only their blankets and waterproofs. But Sir William Thomson, who was in charge, says that the weather was dry at the time and that no suffering ensued.

There is some difference of opinion amongst the witnesses as to whether or not other buildings might have been taken as hospitals as, for example, some of the hotels and churches; but having regard to the difficulty of warming, lighting, and staffing them we think on the whole that there was no want of judgment displayed by the medical authorities in selecting such buildings only as were in fact taken.

For some days after the first occupation of the town there were undoubtedly deficiencies experienced in the hospitals of many material things, and in particular of beds, mattresses, bed-pans, commodes, cups, and similar articles. For example, it appears from the evidence of Sir William Thomson and Mr. Murray Guthrie, M.P., that the Irish Hospital, which arrived on the 6th June, was for some days short, not only of mattresses and stretchers but also of change of clothing for the men, who had accordingly to be kept in their khakis, and that the men suffered in consequence.

As already pointed out, we think that many of these deficiencies might or should have been made good by the medical authorities earlier than they were, for the things required might have been obtained in the town or from Johannesburg, except such articles as bed-pans and commodes, which apparently could not be obtained at all.

There is some evidence to the effect of deficiency in respect of drugs, dressings, and blankets in the hospitals in the town, but on the whole we think that these articles were not wanting to any substantial extent, though in a few cases a deficiency was experienced for a short time. For example, there was a shortage of blankets in the 14th Brigade Field Hospital, owing to the number of sick that was sent into the hospital from the Boer prisoners and the British released prisoners, who had with them no blankets at all. Major Faunce, the principal medical officer of that hospital, was told by Surgeon-General Stevenson to purchase or otherwise obtain in the town such blankets as might be required, but finding that Mr. Murray Guthrie, on behalf of the committee which we shall presently mention, had bought up all the blankets in the place, he bought plushette, which he cut up and made into suitable coverings for the men. When the Palace of Justice was taken as a hospital a large supply of cots, mattresses, and blankets for it were obtained from contractors in the town. And after the lapse of about 10 days from the first occupation of the town Lord Roberts appointed a committee consisting of Mr. Murray Guthrie, Sir William Thomson, the Honourable Rupert Guinness, and Mr. Wood, who bought for the authorities and supplied to the hospitals most of the equipment which was then deficient. This committee sent a circular round to the various hospitals in the town informing the medical officers that any deficiency in their equipment could be remedied by application to the committee, and the hospitals appear to have availed themselves freely of the opportunity thus afforded.

For some time after the occupation of the town there was also an insufficient number of doctors and of orderlies, especially trained orderlies. There was also an insufficient number of nurses for a time, but we do not think that this state of things could have been remedied easily, having regard to the fact that the communications with the town were interrupted by the enemy and that there were considerable risks attending the transport of nurses. But the deficiencies we have mentioned were at any rate to a great extent made up directly the condition of the railway permitted fixed hospitals being transmitted, and on the whole we think there was no undue delay on the part of the authorities in regard to this.

On June 30th Surgeon-General Wilson arrived and brought with him a full supply of beds and other articles. Thereafter all substantial grounds of complaint ceased, and at the time we arrived in the town we found nothing concerning the care of the sick and wounded which could form fair or substantial matter for complaint.

Notwithstanding the temporary deficiencies after the first occupation of Pretoria above pointed out we are able to say that the condition of things there was much better than that existing at Bloemfontein and at Kroonstad after these places were first taken by the British. We believe that after a time no considerable hardships were endured by the sick and wounded in Pretoria and scarcely any complaints have been made with regard to their treatment.

Having regard to some of the evidence given we think it advisable to add a few words upon the sanitary arrangements in the town. There was no existing system of drainage and consequently, from this point of view, and for some time, the arrangements with regard to sanitation were not satisfactory. After a short period, however, Dr. Turner, the medical officer of health to the Cape Government, was consulted on the subject by Lord Roberts and authorised to deal with the sanitation, and under him matters were soon remedied. But previously to his appointment great need existed for a good expert sanitary officer to properly supervise the town and the camps, &c., and also to select proper and healthy sites for the troops to camp upon. This need of a good sanitary officer who should have authority, amongst other things, to select suitable and healthy sites for camps is shown by a statement made by Dr. Turner in his evidence that a very insanitary site was selected for the Welsh Regiment on its arrival which might have led, if it had not been changed, to considerable sickness being developed in that regiment.

After a few general remarks as to the care of the sick and wounded at the front the report goes on to consider the question of the conveyance of patients to and from fixed hospitals. With regard to this point the Commissioners say:—

Many complaints have been made, and many cases of hardship referred to, in connexion with the circumstances under which patients have been removed to and from the hospitals. We have already dealt to a certain extent with some of these cases under previous heads, especially with reference to patients being sent by convoys from the front. As already appears, beyond question considerable hardships had on many occasions to be endured by the men. Where the railway could be employed in their removal they naturally had to submit to comparatively few privations, but complaints are forthcoming with regard even to the train service. No doubt there are cases where inconveniences or even hardships have had to be endured by the sick and wounded conveyed by railway. The most severe cases, however, were always sent by the hospital trains when available. These were very well equipped and the men in them were well looked after. Others had to be sent in ordinary carriages and on occasions some convalescents had to perform the journey in trucks, owing, first, to the deficiency of suitable carriages, and, secondly, to the necessity of hurriedly relieving the congestion at the front, even at some risk to the men, as being the lesser of two evils. In these cases undoubtedly at times the patients must have suffered. An example is given by Dr. Jones, civil surgeon, of a convoy of convalescents arriving from Bloemfontein at Norval's Pont on the 10th June. These men had been 18 hours in open trucks on the way, some of them being convalescents from dysentery and enteric fever. The witness points out the deleterious effect the journey had upon them and states that one died five days afterwards from bronchitis. But though we cannot regard this as an isolated instance we have had the testimony of a great many patients who were conveyed by railway under various conditions, and we think that the cases in which such hardships as we have indicated were endured were not numerous and in most instances could not be avoided.

We have already dealt, under the head of Bloemfontein, with cases of ordinary railway carriages containing convalescents being sent down without the provision of proper blankets and how this was after a time remedied. We find complaints about similar cases where men were sent down without suitable arrangements for relieving themselves in cases of necessity between the stations; also statements as to the trains conveying them being occasionally foul and evil-smelling; as to the insufficiency of food during some of the journeys, and, in a few instances, as to want of attention to the patients at the intermediate stations during the journey. Cases of the kind no doubt did occur. Professor Chiene points out in his evidence how, in the matter of food, in the case of journeys by ordinary carriages, the patients' wants might have been relieved by placing a portable stove in the train, though this course did not apparently recommend itself to the medical authorities. But at most stations on the railway through which the sick and wounded had to pass the medical authorities provided medical comforts in sufficient quantities to supply the men, and before the men started on any journey they were, as a rule, well supplied with such comforts as well as with proper food. We have also already pointed out the existence of cases where, owing to the insufficiency of the medical staff, some convalescents or patients had to come down from the front without being accompanied by a medical officer or by trained orderlies; but these cases were not very numerous, and the men were generally able to a great extent to look after themselves, though, no doubt, there were individuals who suffered.

Speaking generally, though the hardships or inconveniences endured by some of the men in the cases above mentioned ought not to be made light of, we think, judging from the large number of witnesses who gave evidence on the subject, that as a rule the men were well looked after during their conveyance from the front, especially bearing in mind the conditions existing. This view of the case is supported by the fact that the mortality arising from these journeys was remarkably low, as appears from the following returns of the principal medical officer at the base (*vide* Appendix—*Supple* 1):—From commencement of the campaign to Sept. 1st, 1900: total number of sick and wounded sent down from the front in ambulance trains, 11,880; number of deaths in ambulance trains in transit, 14; number of deaths within two days of arrival at the base hospitals in ambulance trains, 20; total number of sick and wounded sent down from the front in ordinary trains, 10,867; number of deaths in ordinary trains in transit, *nil*; number of deaths within two days of arrival at the base hospitals in ordinary trains, one.

Touching the hospitals on the lines of communication the Commissioners say that there were not many complaints, but as regards Sterkstroom and Norvals Pont they find that there was good cause for the complaints. Sterkstroom at the time during which the causes of complaint arose was only a field hospital which had to be used as a fixed hospital. Concerning the deaths of three volunteers in the Kaffrarian Rifles the report says:—

As to one of these volunteers, a painful dispute arose with regard to his coffin, which it is not necessary for us to dwell upon. These deaths certainly occurred under very regrettable circumstances and formed the subject of much indignant comment in the local newspapers, and the correspondence relating to the subject was forwarded to the Commander-in-Chief. Without endorsing to the full the complaints against the hospital, still, after making allowances for the fact that it was only a field hospital, we are satisfied that its management and condition were not satisfactory.

NORVALS PONT.

The Commissioners say:—

The complaints as to the stationary hospital for some time after its opening show that its condition was far from satisfactory. It was deficient in bedsteads, bed-pans, commodes, feeding cups, basins, and similar articles, and according to some witnesses was lacking for some days in apparatus such as is to be found in well-equipped hospitals. For some time, also, this hospital had but few nurses or properly trained orderlies, and the attendance on the patients appears to have been accordingly somewhat lax. The deficiencies we have mentioned caused the inconveniences and hardships usually flowing therefrom. For example, the lack of sufficient commodes and bed-pans led to several enteric and dysenteric fever patients having to go long distances from their tents to the latrines, which were themselves not properly equipped or kept. It is right to state that the latrines were after some short delay moved nearer to the tents and were then properly provided with buckets, seats, and disinfectants.

BASE HOSPITALS AND HOSPITAL SHIPS.

These were satisfactory, even the much-abused Woodstock Hospital being in the opinion of the Commissioners suited to its purpose. There were bugs, but they did not materially affect the patients. Speaking generally of the base hospitals the Commissioners say:—

Base Hospitals Generally.

We need not dwell on the base hospitals (properly so called) in Cape Town or the neighbourhood, there being nothing in our opinion beyond what we have already stated which calls for special comment or forms just matter of complaint. These hospitals, or most of them, were visited by us, and with regard to each hospital as it existed at the time of our visit there will be found in the Appendix a short account prepared by our medical members (*vide* Appendix—*Church and Cunningham*). Speaking generally, the condition of these base hospitals appears to be well summed up by Colonel Cooper, the staff commander at the base, who visited the hospitals constantly at the time of greatest pressure. In speaking of the patients he says: "They were all housed and all had good mattresses to lie on, and were well looked after—much better than I have ever seen on service elsewhere." And in answer to the question: "Have you ever seen as much done for the sick and wounded as in this campaign?" he said, "Never. It was a revelation to me when I arrived here to go round the Wynberg Hospital." This favourable view of the base hospitals as a whole is corroborated by the fact that from the commencement of hostilities up to the 21st August last there were admitted therein 31,305 patients, and that only 362 deaths occurred out of this number, being an average of 1·15 per 100 (*vide* Minutes of Evidence—*Colonel Supple*). But there are some places in the neighbourhood of Cape Town which were not, properly speaking, used for the purposes of base hospitals, but which we may properly deal with under the present head. At these places some sick and wounded were tended, and much complaint has been made about their treatment, the complaint in our opinion being to a great extent made with good cause. We refer particularly to McKenzie's Farm and Maitland Camp, and they require some detailed consideration.

As regarding McKenzie's Farm and Maitland Camp they were neither of them intended for a hospital originally, and—

until McKenzie's Farm was changed into a hospital it was not, nor was Maitland Camp, suitable for the retention of sick men who ought to have been accommodated in proper hospitals, as in these camps they could not receive the full care and attention they needed. At Maitland Camp at one time for a few days matters were made worse by the illness of the civil surgeon there. The retention of sick men in these camps naturally caused suffering and formed the ground for substantial complaint. There were no proper beds for the sick and, of course, no nurses and for some time no properly trained orderlies. It is much to be regretted under the circumstances that the offer of Mrs. Wakefield to provide accommodation for the patients at Stellenbosch, to which we have referred, was not accepted by the medical authorities, as it would, at any rate to a certain extent, have relieved the pressure at the base hospitals and enabled some of the men detained in these camps to have been sent away. This was the more regrettable as in the camp at Stellenbosch, where at that time there was no hospital (though a good one was subsequently established there), some patients were being kept who ought to have been sent into a proper hospital and who had ultimately to be sent to McKenzie's Farm.

NATAL.

With regard to Natal the campaign there, so far as regards the sick and wounded, was conducted under much more advantageous circumstances than that in the Orange River Colony and the Transvaal. The railway was always available and therefore field hospitals did not have to be converted into fixed hospitals. The Commissioners proceed:—

To a great extent, by reason of the advantages above pointed out, we found but few substantial complaints about the campaign in Natal as compared with the campaign elsewhere. But the deficiency in the staff of the Royal Army Medical Corps at the outbreak of hostilities and the want of appreciation by the authorities of the forces necessary to carry the war to a successful conclusion were felt also in Natal. The army stationed in Natal at the outbreak of the war and which was first landed after war was declared came out with its proper units, that is to say, with its regimental doctors and with the field hospitals and bearer companies complete, but with no provision for base or general hospitals. As the army increased the difficulty was felt of providing a sufficient supply of doctors and properly trained orderlies and for a time there was an undoubted deficiency. Moreover, the general hospitals were not forthcoming as early as they should have been. But owing to a great extent to the energy displayed by the principal medical officers in Natal and the steps taken by them the deficiencies were made up with commendable promptitude. We may in particular refer to the evidence of Colonel Gallwey, Royal Army Medical Corps, as showing the good work done by that officer in Natal and as giving details as to the establishment there of the hospitals and the supply of civil surgeons, orderlies, men for the bearer companies, and nurses, details which we need not repeat in the body of this report. All necessaries for the sick and wounded were either obtained from the base or were bought promptly on the spot, though there was some delay in obtaining a sufficient supply of bed-pans and commodes. The Red Cross Society materially assisted by gifts of comforts. Speaking generally, we think that the sick and wounded in Natal were well cared for.

LADYSMITH.

In Ladysmith there was naturally a very great strain. Many of the medical officers broke down and at one time there were over 800 enteric fever patients and over 300 cases of dysentery, all of an aggravated type. There were only 69 in all of the Royal Army Medical Corps and of these 17 were in hospital at once, mostly suffering from enteric fever. The nurses exhibited much devotion.

HOSPITALS ON LINES OF COMMUNICATION.

The hospital at Pietermaritzburg was an old building and dirty. It was also overcrowded and understaffed at first. The linen was occasionally not properly washed.

As to the complaint that the principal medical officer in Natal had refused to form a convalescent camp, which was much needed, the Commissioners say:—

His critics appeared to be ignorant of the existence at the time they were referring to of a large convalescent depôt which had been established by him for 50 officers and 1500 men with all proper comforts and necessaries (*vide* Minutes of Evidence—*Colonel Gallwey*, Question 13,958). It was owing to the existence of this large convalescent depôt that when a small convalescent depôt was offered to him by certain local authorities, coupled with the condition that it should be staffed by the principal medical officer, he declined the offer, his reason being that he could more usefully employ his staff elsewhere. However, he offered to pay the local authorities for farming out convalescents at the rate of 4*s.* a day for privates and 6*s.* for officers and nurses, and this offer was accepted and the arrangement carried out. We do not think the principal medical officer can properly be blamed for his action in the above matters, nor do we think we need dwell upon a dispute which arose between the principal medical officer and some local authorities on a question whether certain refugees employed as orderlies should be clothed at the expense of the Imperial Government.

PART IV.

SUGGESTIONS WITH A VIEW TO REMEDYING DEFECTS.

These suggestions, which have already appeared in our issue of Feb. 2nd, are as follows:—

In previous parts of this report, and especially in Part II., we have mentioned several matters connected with the Royal Army Medical Corps as at present constituted, and the care of our sick and wounded, in which improvements are required. The extent to which, and the way in which, these improvements can practically be made, require detailed and careful consideration by military and medical experts. We recommend the appointment at some early convenient time of a departmental or other committee of experts to inquire into and report upon the steps needed to effect the following objects:—

1. The establishment of the staff of officers and orderlies of the Royal Army Medical Corps, and its equipment, on a scale sufficient to enable it to discharge adequately the duties ordinarily cast upon it in times of peace and by the smaller wars in which the Empire by its vast extent is so frequently engaged.

2. Regulations and provisions which will enable surgeons and trained orderlies in sufficient numbers to be rapidly obtained and added to the ordinary staff of the Royal Army Medical Corps in the event of a great war; and that will also ensure a rapid supply of all hospital and other equipment required for the due care of the sick and wounded in such a war.

3. The attraction to the Royal Army Medical Corps of a sufficient and regular supply of officers of good professional attainments. And the improvement of the position of the officers by the allowance of sufficient holidays; and by provisions enabling them to become adequately acquainted with the advancements in medical and surgical science; and the necessity of employing in the higher posts men selected for their merits rather than by seniority.

4. The employment, to a greater extent than that recognised and practised until the later stages of this war, of nurses in fixed hospitals for the care of the wounded and of fever and dysenteric patients, and such others as can properly be nursed by females.

5. The appointment of properly qualified officers of the Royal Army Medical Corps to undertake sanitary duties.

And with regard to other matters:—

6. The improvement of the existing ambulance wagons.

7. The selection and employment of the form of hospital tents best suited for the reception of sick and wounded in a campaign.

We also think that the committee might usefully consider the following questions, on which we ourselves express no opinion beyond what appears in Part II. of this report:—

(*a*) Whether it is advisable and practicable to some, and if any what, extent, that the Royal Army Medical Corps should have exclusive possession of and control over all necessaries for the sick and wounded (other than ordinary food and clothing, not being hospital clothing), so as to avoid the necessity of requisitioning upon the Army Service Corps or the Ordnance authorities.

(*b*) Whether the administrative and clerical duties of the principal medical officers can be lightened and in particular to what extent the reports and returns which have to be made can and should be shortened.

(*c*) Whether the men of the bearer companies, when not engaged on the field, could be employed to assist in the field hospitals, and whether with this object it is advisable that the staff of the bearer company and of the field hospital of a brigade should be under one chief officer.

(*d*) Whether in times of peace a regimental doctor should be attached to each regiment for some fixed time.

(*e*) Whether general hospitals could be advantageously divided into smaller units.

(*f*) Whether it is practicable and advisable that the reception and distribution of all charitable gifts for the sick and wounded should be by some organised body on their behalf; and if so, what that body should be.

The following are not matters for inquiry by the suggested committee. It will be sufficient if the attention of the Royal Army Medical Corps be specially called to what we are about to state, with a view to our recommendations being acted on.

Having regard to what we have said on the subject in Part II., we think that strict inquiry should be made in the various military hospitals in South Africa and proper steps be taken in order to stamp out, where it exists, pilfering by orderlies of the stimulants, comforts, or property of patients, and the receipt of bribes by orderlies from patients.

We also suggest that the officers should, so far as it is possible and consistent with due discipline to do so, relax the strict military rule generally adopted in military hospitals, so as to give an additional feeling of ease to the patients and enable them to better appreciate the comforts of a hospital.

The power and duty of every officer in this campaign in cases of emergency to buy for his hospital at the expense of the Government any necessary not in hospital and not procurable without delay elsewhere has been fully recognised by the authorities, and the power has been by many freely exercised. But, as we have already pointed out, some officers appear not to be fully acquainted with the existence of the power, and it is advisable that it should be made widely known that any exercise of that power will be favourably viewed by the authorities, unless, of course, in cases of its abuse.

ERRATUM.—In Part II. of our abstract of the Report of the Royal Commission on South African Hospitals which appeared at page 652, col. 2, in our issue of March 2nd, the word "Kimberley" in the paragraph commencing "The present article only deals with ....." should be "Bloemfontein."

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6697 births and 4858 deaths were registered during the week ending March 2nd. The annual rate of mortality in these towns, which had been 19·5 and 21·2 per 1000 in the two preceding weeks, further increased to 21·5 last week. In London the death-rate was 20·9 per 1000, while it averaged 21·9 in the 32 large provincial towns. The lowest death-rates in these towns were 13·9 in Leicester, 14·1 in Oldham, 15·3 in Huddersfield, and 15·5 in Croydon; the highest rates were 25·4 in Halifax, 26·0 in Wolverhampton, 30·1 in Liverpool, and 38·2 in Plymouth. The 4858 deaths in these towns included 395 which were referred to the principal zymotic diseases, against 347 and 387 in the two preceding weeks; of these 129 resulted from whooping-cough, 109 from measles, 62 from diphtheria, 47 from diarrhœal diseases, 25 from "fever" (principally enteric), and 23 from scarlet fever. No death from any of these diseases occurred last week in Croydon; in the other towns they caused the lowest death-rates in Norwich, Halifax, Bradford, and Newcastle, and the highest rates in Bristol, Liverpool, Blackburn, and Sunderland. The greatest proportional mortality from measles occurred in Portsmouth, Liverpool, and Hull; and from whooping-cough in Plymouth, Bristol, Cardiff, Swansea, Derby, and Sunderland. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 62 deaths from diphtheria included 19 in London, seven in Sheffield, 6 in Birmingham, five in Bristol, and five in Salford. No death from small-pox was registered last week in any of the 33 large towns, and only one case of small-pox remained under treatment in the Metropolitan Asylums hospitals on Saturday last, March 2nd. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1823, against numbers decreasing from 2535 to 1834 on the nine preceding Saturdays; 185 new cases were admitted during the week, against 145, 142, and 162 in the three preceding weeks. Influenza was certified as the primary cause of 35 deaths in London last week, as compared with 12, 16, and 32 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 397, 420, and 493 in the three preceding weeks, further rose last week to 501, but were 58 below the corrected average. The causes of 72, or 1·5 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Cardiff, Leicester, Nottingham, and in 11 other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Halifax, Sheffield, Sunderland, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 22·6 and 23·7 per 1000 in the two preceding weeks, further rose to 24·5 during the week ending March 2nd, and showed an excess of 3·0 per 1000 over the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 13·4 in Perth and 17·6 in Aberdeen to 27·0 in Glasgow and 28·3 in Dundee. The 768 deaths in these towns included 67 which were referred to whooping-cough, 23 to diarrhœa, 13 to measles, 12 to small-pox, four to scarlet fever, two to diphtheria, and one to "fever." In all, 122 deaths resulted from these principal zymotic diseases, against 106 and 99 in the two preceding weeks. These 122 deaths were equal to an annual rate of 3·9 per 1000, which was 2·2 per 1000 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 33 and 36 in the two preceding weeks, further rose last week to 67, of which 43 occurred in Glasgow, 11 in Dundee, eight in Edinburgh, and three in Aberdeen. The deaths from diarrhœa, which had been eight and 16 in the two preceding weeks, further increased to 23 last week, and included seven in Glasgow, seven in Edinburgh, four in Dundee, and three in Aberdeen. The deaths from measles, which had been 25 and 19 in the two preceding weeks, further declined last week to 13, of which five were registered in Edinburgh, five in Aberdeen, and two in Glasgow. The fatal cases of small-pox, which had been 11, 20, and 15 in the three preceding weeks, further declined to 12 last week, and all occurred in Glasgow. The mortality both from diphtheria and from "fever" showed a marked decline from that recorded in recent weeks. The deaths referred to diseases of the respiratory organs in these towns, which had been 153 and 177 in the two preceding weeks, further rose last week to 184, but were 140 below the number in the corresponding period of last year. The causes of 40, or more than 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 34·3 and 33·7 per 1000 in the two preceding weeks, rose again to 46·6 during the week ending March 2nd. During the past four weeks the death-rate in the city has averaged 37·2 per 1000, the rates during the same period being 19·9 in London and 21·5 in Edinburgh. The 309 deaths belonging to Dublin registered during the week under notice were 85 more than the number in the preceding week and included 12 which were referred to the principal zymotic diseases, against 16, 10, and 11 in the three preceding weeks; of these, five resulted from whooping-cough, three from "fever," two from diarrhœa, one from measles, and one from diphtheria. These 12 deaths were equal to an annual rate of 1·8 per 1000, the zymotic death-rate during the same period being 1·6 in London and 3·7 in Edinburgh. The fatal cases of whooping-cough, which had been nine, three, and three in the three preceding weeks, increased to five last week. The deaths

referred to different forms of "fever," which had been five, two, and four in the three preceding weeks, declined again last week to three. The two fatal cases of diarrhœa showed a decline from the number in the preceding week. The 309 deaths in Dublin last week included 35 of children under one year of age, and 117 of persons aged upwards of 60 years; the deaths of infants corresponded with the number in the preceding week, but those of elderly persons showed a very large excess. 14 inquest cases and five deaths from violence were registered; and 122, or nearly two-fifths, of the deaths occurred in public institutions. The causes of 12, or nearly 4 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Surgeons: H. L. Norris to the *Isis*, A. J. Laurie to the *Jason*, and T. H. Vickers to the *Alexandra*.

ROYAL ARMY MEDICAL CORPS.

Major J. G. Black is appointed to the charge of the Station Hospital at Devonport vice Major Wilson. Lieutenant-Colonel B. B. Connolly, A.M.S. (retired), is selected for appointment to the medical charge of the new Recruiting Depôt, New Cross-road.

THE DEBATE IN THE HOUSE OF LORDS.

It is some time since the House of Lords has been the scene of such an animated and brilliant debate as that which has been taking place during the present week in connexion with the relations of the military and civil branches of the War Office. The question raised by Viscount Wolseley as late Commander-in-Chief of the Army is one which may be termed a root question, because it goes down to the principles of constitutional government on a Parliamentary system. But it was, no doubt, the personal side of the controversy between his lordship and the Marquis of Lansdowne, the late Secretary of State for War, that gave rise to the extreme interest manifested and imparted a peculiar piquancy to the debate. It may be said that Lord Wolseley brought an indictment against a system; but Lord Lansdowne, in the course of his reply in its defence, preferred an indictment against the late Commander-in-Chief. There the matter ends for the present, but only for the present. What interests us, however, is confined within much narrower limits—namely, the side-light that it casts on the charges made against the medical service in South Africa. The debate shows one thing clearly enough—that the authorities at the War Office made all their preparations (which might have been, and probably were, good enough and even ample for the force originally intended and sent out) on far too small a scale as it turned out. As nobody seemed to have had any idea of the magnitude and enormous difficulty of the task which was being undertaken followed as a matter of course that the force originally sent out, and the medical, transport, and supply branches which went with it, proved quite inadequate.

SOUTH AFRICAN NOTES.

Lieutenant Forbes-Winslow, R.A.M.C., and Civil Surgeon Mowatt have much improved (Pretoria, March 2nd).

Civil Surgeons J. Stevenson, G. L. Hayden, and R. B. Williams have been discharged from Hospital to duty.

Major C. Stonham, Imperial Yeomanry Hospital, and Civil Surgeon F. Green are returning to England in the *Harlech Castle* which left South Africa on March 2nd.

Captain C. E Douglas, R.A.M.C., and Civil Surgeons J. C. Hibbert, T. W. Atkins, R. W. Collum, W. Tarr, and W. H. Rowell left South Africa in the *Manhattan* for England on March 2nd.

Major L. Haywood, R.A.M.C., and Civil Surgeons A. B. Dunne, V. W. Low, and P. E. Adams have arrived in England.

DEATHS IN THE SERVICES.

Major Henry Ernest Hill Smith, R.A.M.C., on Feb. 22nd at Cairo, aged 39 years. He served with the Dongola Expeditionary Force under Sir Herbert Kitchener in 1896, including the engagement at Firket and the operations at Hafir (mentioned in despatches, British medal and Khedive's medal with two clasps, and the Fourth Class of the Order of the Medjidie). He also took part in the Nile Expedition of 1897, and was present at the capture of Abu Hamed (mentioned in despatches, two clasps). In the Nile Expedition of 1898 he was present at the battles of Atbara and Khartoum (mentioned in despatches and promoted major, two clasps).

MEDICAL AND SURGICAL AID FOR SICK AND WOUNDED OFFICERS.

The first report of the Duke of Abercorn's Committee, dealing with the work done during the year 1900, is dealt with in another column of the current issue of THE LANCET. The report mentions that "no applications were received from officers of the Royal Navy or of the Volunteers, though it should be understood that all the advantages of the fund were equally open to officers of these services."

H.M.S. "BRITANNIA," DARTMOUTH.

In consequence of an epidemic of influenza on the training ship *Britannia* at Dartmouth the Admiralty, acting upon the advice of the medical officer in charge, have granted the cadets three weeks leave of absence, dating from March 2nd. There have been about 40 cases of illness, with two deaths from pneumonia.

Correspondence.

"Audi alteram partem."

INTERNATIONAL CATALOGUE OF SCIENTIFIC LITERATURE.

To the Editors of THE LANCET.

SIRS,—The formation of an international catalogue of scientific literature, which was initiated by the Royal Society and has been the subject of several international conferences during the last few years, has at last been started and cataloguing is in active progress. It is hoped that all papers published on and after Jan. 1st of the present year will be indexed; the indexes will be two in number—viz., an author index and a subject index. Each participating nation will be responsible for the indexing of the papers published in that country, and the indexing for Great Britain and Ireland is in the hands of a British bureau. A central bureau is to collect, coördinate, and publish the labours of the various national bureaus. I am writing this letter in order to make these facts known more particularly to medical authors and to invite their coöperation in making the venture a success. The various recognised journals for the publication of original investigations will be carefully searched, but it is possible that even the most conscientious and painstaking indexer may inadvertently miss an important paper, especially if it is published in journals or books which are not readily accessible. In order to guard against such omissions may I request authors to send separate copies of their publications to one or other of the following gentlemen who are responsible for the sections of the medical sciences appended to their names?

Anatomy.—Professor G. D. Thane, University College, London.

General Biology.—Professor E. A. Minchin, University College, London.

Physiology (including Pharmacology)—Dr. W. A. Osborne, Physiological Laboratory, University College, London, or to myself at King's College, London.

Experimental Pathology.—Dr. T. G. Brodie, Examination Hall, Victoria-embankment, London, W.C.

Bacteriology.—Mr. S. G. Shattock, St. Thomas's Hospital Medical School, London, S.E.

Experimental Psychology.—Dr. W. H. R. Rivers, St. John's College, Cambridge.

If authors are not able to forward actual copies of their papers, a note of place and date of publication, with full title of the paper, should at least be sent. Authors would considerably lighten the work of the indexers if they were also to send an index slip with their papers, indicating under two or three main headings the subjects of which their papers treat. Full details respecting the work and publication of the index could be obtained by writing to the director of the central bureau of the

catalogue, Dr. H. Forster Morley, 34–35, Southampton-street, Strand, London, W.C.

I am, Sirs, yours faithfully,
W. D. HALLIBURTON.

King's College, London, March 4th, 1901.

THE RECENT HUNTERIAN ORATION: THE EVOLUTION OF MAN.

To the Editors of THE LANCET.

SIRS,—Possibly you may find space to allow me to mention one or two difficulties which crop up in perusing the markedly interesting and important details brought forward in this year's Hunterian Oration[1] touching the origin of the human race and the sources and physical characteristics of the European sections; and I ask light not so much in regard to what we now are as whence and how we came to be man.

Assuming that man and the apes are derived from an identical or kindred stock, if I understand Mr. Macnamara aright his view is that the departure of the one branch from the common stock leading to man with his vast intellectual predominance over the other primates was rendered possible by a retarded closure of the frontal sutures permitting of the anterior brain growth and evolution, while in the anthropoid apes the sutures continued to close early in life, "the anterior part of their brain not increasing beyond the size it had attained at the end of the first year," and the explanation of this imperfect evolution of their frontal lobes lying to a large extent in "the premature ossification of that part of the skull which encloses the fore-brain." But granting that the line of structural changes was such, does not a more important question lie behind it, to the originating and guiding force which rendered possible this divergence from the hitherto prevailing rule? At the time at which these two sections of higher animal life commenced to diverge presumably the skull features in the one closely approximated those in the others; presumably the change was not accidentally brought about, nor by abnormal divergence, but by a gradual physiological process not common to the whole stock but limited to the one section and not potential then or at any subsequent period in the anthropoid apes; what, then, was the intrinsic power or extrinsic conditions which brought about the structural change which permitted the one section to advance to man and the absence of which retained the apes in the lower stage of being?

An innate faculty to respond to external natural demands, and an environment necessitating an increased brain and higher function of an intellectual character and the organ responding thereto, provide an apparently rational explanation, but to permit of it the bony cranium must accommodate itself to the altered brain conformation, either by accident or in physiological response to it. But, apparently, the view taken by Mr. Macnamara, while admitting an innate power of the brain "to develop and so meet the increased demand arising out of the struggle for existence," is that "the factors governing the growth of the skull differ from those which develop the brain," the brain not being dominant in the outcome, though the marked correspondence during the subsequent evolutionary steps of the human race between the osseous protection and the protected viscus indicate at least a clear coördinating power correlating both in structural advances if not an actual controlling influence of the brain in the skull conformation arrived at. Yet if this non-closure of the sutures in the man section of the primates is not to be found in an advancing brain organism, the osseous framework developing on lines independent of it, wherein lies the explanation of the anterior part of the anthropoid ape skull remaining a shut box controlling the size and function of its brain, while that of man has been permitted gradually to expand in conformity to an enlarging viscus not only endowed with higher intellectual powers, but with an additional speech faculty? Why the poor ape has been handicapped by the continuance of this common original structural defect which has clung to him ever since despite his surroundings, while man was freed from it and allowed to progress, is a mystery; nor is it easy to understand why, assuming that the line of progress has laid through a struggle for existence, the anthropoid apes escaped this struggle at the time when it operated to the advantage of the human family or since, or assuming that they have since been subjected to its influence why the same sequence of events has not again followed in their case as originally in man.

There is yet another point. The race of man has since developed two distinct cranial divergencies in altered relation of length and breadth, carrying with them corresponding brain peculiarities—dolichocephalic and brachycephalic. What relation do these bear to the original change? which was the dominant factor in the result—brain or cranium? and what was the cause in operation?

I write solely with the view of hoping to get cleared up knotty points in the chain of evolution of man, not as throwing any doubts on his probably common physical source with the lower primate order; to some it may suffice to know that he "is what he is," but to others the gradually unravelling past may be pregnant with hope touching his future; and among these latter I enrol myself.

I am, Sirs, yours faithfully,
FRANCIS H. WELCH, F.R.C.S. Eng.,
Surgeon-Colonel (retired), M.S.

Brandram-road, Blackheath, Feb. 25th, 1901.

[1] THE LANCET, Feb. 16th, 1901, p. 447.

PREGNANCY AND LABOUR COMPLICATED BY OVARIAN TUMOURS.

To the Editors of THE LANCET.

SIRS,—The valuable lecture on pregnancy and labour complicated with ovarian tumours by Mr. J. Bland-Sutton published in THE LANCET of Feb. 9th (p. 382), will serve the useful purpose of directing attention to an important subject which has been hitherto much neglected in the obstetric literature of this country. While in general agreement with the opinions he expresses and more especially as to the superiority of ovariotomy in labour where that is possible, I must take exception to his denunciation of reposition as a means of treatment. He characterises it as a measure "decidedly in opposition to all the canons of surgery." He founds this dictum on the two-fold proposition that "pregnancy exerts a baneful influence on ovarian tumours, and ovarian tumours are, as a rule, inimical to successful pregnancy." These reasons, though perfectly valid in regard to operation during pregnancy, are, it seems to me, irrelevant where an ovarian tumour blocks the pelvis during labour. It will naturally suggest itself at the outset that a woman in labour with an ovarian tumour in the pelvis presents an obstetrical rather than a surgical problem. In comparatively few of the published cases where reposition was effected would the circumstances have permitted the services of a skilled operator to be called in. Experience thus bears out the observation of Playfair that it is only exceptionally that expert attendance, with all the necessary appliances, can be had.

The great danger in these cases is delay, to which much of the mortality arising from this complication is to be attributed. This danger is well illustrated in the case which Mr. Bland-Sutton himself cites where, from the firm impaction of the head, it was found necessary to perform Cæsarean section before the tumour could be brought out of the pelvis. It will not be denied that this must add to the dangers of ovariotomy. Whether reposition was attempted earlier in labour is not stated.

On *a priori* grounds it would seem that to push the tumour out of the pelvis is a procedure comparatively free from danger and calculated to give immediate obstetric results quite as good as ovariotomy undertaken in unsuitable surroundings. *A posteriori* evidence confirms this view. In 41 cases in which reposition was accomplished six deaths followed, but three only can be fairly attributed to reposition, that is a mortality of 6·9 per cent. It is true that of several cases of ovariotomy performed during labour all have been successful, but all were performed by experienced operators and their numbers are still too few to justify dogmatic conclusions. A fairer means of comparison is to be found in the statistics which Dsirne has published of ovariotomy in pregnancy. Notwithstanding that the operations (135 in number) were in general undertaken under the most favourable conditions and with the strictest antiseptic precautions Dsirne found a maternal mortality of 5·9 per cent., little better than that obtained by reposition during the actual progress of labour.

I do not for a moment maintain that reposition is

entirely free from danger, but to found on one unsuccessful case an unqualified condemnation of a method which in the past has given such good results can scarcely be regarded as fair; indeed, the case which Mr. Bland-Sutton cites is, so far as I know, the sole published instance in which axial rotation followed reposition, with the doubtful exception of a case reported by Camden. Even should complications arise after delivery, though they do not seem to be more common in pelvic tumours that have been reposed than in the case of abdominal tumours, the statistics of post-partum ovariotomy show that they may be dealt with by operation with every prospect of success. Where, as must often happen, circumstances do not allow of immediate ovariotomy reposition is without doubt the best method of dealing with this dangerous complication of labour, as I have elsewhere shown,[1] and it will, I am convinced, continue to obtain the sanction of the most advanced obstetric authorities. It would, indeed, be as unreasonable to expect the general practitioner, under whose care most of the cases come, to advise an ovariotomy, which would involve dangerous delay, and expect him to advocate immediate operation in a case of strangulated hernia without first attempting reduction.

I am, Sirs, yours faithfully,

Aberdeen, Feb. 25th, 1901. R. G. MCKERRON.

"RETURN" CASES OF SCARLET FEVER: A SUGGESTION.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Feb. 23rd, p. 576, you referred to the recommendations made by the Royal College of Physicians of London to the Metropolitan Asylums Board that experiments should be made with a view to ascertaining in what way the tendency of patients to carry home infection from hospital can best be overcome. The suggested experiments are in the direction of a much greater classification of patients than has hitherto been practised, as regards the separation of complicated from uncomplicated cases, and of the complete isolation of cases for a short time prior to their leaving hospital. In view of the not very satisfactory results which, as recent statistics have shown, the hospital treatment of patients on the aggregation system has hitherto yielded, everyone, I think, will welcome any attempt to ascertain whether or not the methods hitherto practised are really the best. May I venture to suggest that the proposed experiment might with great advantage be carried further? Would it not be possible, in one or more of the hospitals of the Metropolitan Asylums Board, to set apart a considerable number of isolation wards (specially built for the purpose if necessary) for the separate treatment of patients or families of patients during the *whole course* of their stay in hospital—in other words, to try the effect of substituting true isolation for aggregation? There is reason to think, judging from the remarkable experience of towns where patients are treated in their own homes, that with such a method the percentage of septic complications would be lessened, the number of return cases reduced, and the patients could be allowed to return home very much sooner than is at present the case.

I am, Sirs, yours faithfully,

C. KILLICK MILLARD.

Town Hall, Burton-upon-Trent, March 1st, 1901.

CAMBRIDGE APPOINTMENTS ASSOCIATION.

To the Editors of THE LANCET.

SIRS,—It will be a great kindness if you will once more draw the attention of qualified medical men who are graduates of the University of Cambridge to the Cambridge Appointments Association. We have an increasing number of applications for medical men to act in various capacities and would very gladly be of service to Cambridge practitioners who have the requisite qualifications. The amount of the subscription to this association (5*s.* per annum) is not large and no commission is charged in respect of appointments given or received. We have, therefore, no hesitation in asking Cambridge men who are qualified to join the association in order that we may extend its operations in the medical world. What is lacking at present is not appointments but men to recommend for them. We are in need particularly of those who have had special training in bacteriology as well as in other subjects, but we hope to be of service to others.

I am, Sirs, yours faithfully,

W. A. J. ARCHBOLD, Secretary.

73, Trumpington-street, Cambridge, March 1st, 1901.

[1] Transactions of the Obstetrical Society of London, 1897.

"LEGISLATION AGAINST NATIONAL INTEMPERANCE."

To the Editors of THE LANCET.

SIRS,—Your able leading article on the above subject on Feb. 9th should lead the way to concerted action on the part of the profession by (1) the issuing of a largely and influentially signed statement pointing out in plain and truthful language the action on the organs of the body of excess in alcohol, particularly when taken in the form of spirit; and (2) the determination of each subscriber to the document to use his influence with his patients in correcting the false ideas that are current with the public as to the remedial and dietetic value of alcohol. Bands of Hope do much good by teaching the young the wisdom of avoiding the snares of drink, and temperance societies are a sort of continuation school for the youth as well as a means for reforming the drunkard, but the great mass of excessive drinkers are wholly untouched by these means. One of the greatest hindrances to true temperance is the virulent denunciation of the moderate drinker indulged in by some total abstainers. Intemperate speech will never promote temperance. By "moderate drinkers" I mean those who take habitually a moderate amount of light wine or beer with their meals and, as a rule, avoid spirits. If this standard were commonly followed there would not be one-tenth the present amount of drink consumed.

Very few people outside the medical profession have any idea of the havoc wrought by excessive drinking. The ordinary signs of excess are plain enough, but what the laity require instruction upon is the insidious and ever-increasing damage to the vital organs caused by over indulgence, especially when it takes the form of constant nipping. These facts must be urged on patients, alike in the hospital and the consulting room. It may be said that a medical man has not the time to take on the rôle of a temperance reformer. My reply would be an appeal to the spirit of true patriotism. The substitution of whisky for wine and malt liquors, which is so much the custom just now, is responsible for much of the chronic alcoholism so prevalent. The bugbears gout and rheumatism are a plausible excuse with many spirit-drinkers.

Societies, lectures, and addresses have had but little effect on the insobriety of the nation, and it is high time to adopt a man-to-man treatment, and the one to undertake it is the medical man. The late Professor Drummond has referred to the importance of individuals in carrying out great reforms as follows:—

> The past has, indeed, no masses. *Man*, not masses, have done all that is great in history, in science, and in religion. ..... We require to be taught again to-day to be content with aiming at units. Every atom in the universe can act upon every other atom, but only through the atom next it. And if a man would act upon every other man he can do so best by acting, one at the time, upon those beside him. The true worker's world is a unit. ..... Work with units, but above all work *at* units.

I am, Sirs, yours faithfully,

CHAS. W. CHAPMAN.

Weymouth-street, W., March 6th, 1901.

"THE COVENTRY DISPENSARY."

To the Editors of THE LANCET.

SIRS,—That "the heads of the profession" are the men who stand in the way of reform is proved by the action of some of the Birmingham consultants. Had the consultants been true to the profession the resolution lately passed by the Birmingham and Midland Counties Branch of the British Medical Association would have been a gigantic step in reform, but consultants by continuing to meet in consultation the dispensary staff are obstructing reform in a most audacious manner. The Birmingham consultants professed a very high standard of ethics when their own pockets were assailed by the Birmingham Consultative Institution and when they were loyally supported by the general practitioner, but when the interests of general practitioners are assailed these consultants, instead of giving a helping hand, are found in the camp of the enemy—i.e.,

bolstering up a condemned institution and encouraging the staff to set at defiance the mandate of the profession. The very men who did all in their power to compel Dr. Irvine to sever his connexion with the Consultative Institution are now doing all in their power to encourage the dispensary staff to serve a lay committee and to set at defiance the wishes of the British Medical Association and other ethical organs of the profession. Could anything be more despicable? "If the profession is true to itself" it will now treat those consultants with the contempt they deserve. Those who continue to support the Coventry Dispensary should be included in the same category as the dispensary staff and therefore "in future no professional recognition should be given to them." It will be very easy to discover the names of those consultants who continue to think more of the fees they get through the dispensary staff than of the good opinion of the profession at large. I was always taught to look upon consultants as the upholders of the honourable traditions of a learned profession, but from what I have seen lately I have come to the conclusion that they are greatly to blame for the degraded state of the profession. How can we general practitioners expect reform and expect our interests to be safeguarded when we find such men occupying the principal seats on the General Medical Council, on the council of the British Medical Association, and on the councils of our universities and colleges?

The resolution passed by the Birmingham branch of the British Medical Association has at least done one good thing by making the consultants show their hands. We see them now in their true colours and we can discern those that deserve the support of the general practitioner and those that deserve to be included in the "boycott."

I am, Sirs, yours faithfully,

Coventry, March 4th, 1901. J. LESLIE CALLAGHAN.

"'THE DUMMY CORPSE' CASE."

To the Editors of THE LANCET.

SIRS—I regret that in my letter on the above case I omitted to state that the temperature was taken from the mouth. Information as to the present condition of Browning can only be obtained by special permission of the Prisons' Commissioners.

I am, Sirs, yours faithfully,

GIDEON W. B. MARSH.

Tachbrook-street, S.W., March 4th, 1901.

THE ROYAL ORTHOPÆDIC HOSPITAL.

To the Editors of THE LANCET.

SIRS,—The report in THE LANCET of Feb. 23rd, p. 591, of the annual meeting of the above hospital held on Feb. 8th, will be clearer with the addition of some details which perhaps you will kindly allow me to furnish.

The honorary medical staff have always condemned the removal of the hospital to another site. Nevertheless, the former committee resolved to take that step and were contemplating the sale of the property for £28,000 when they were defeated on June 8th, 1899, by Mr. H. H. Marks. Lord Wantage (the president), Sir Walter Gilbey (the chairman), Sir Ernest Clarke, and other members of the committee subsequently resigned. The majority at that meeting was publicly acknowledged by Mr. Marks to have been obtained from votes specially created for the purpose. Later Mr. Marks became chairman and several of his friends were appointed members of the committee, while a near relative was made honorary architect. At the time of the meeting it was generally understood that the old committee had been defeated because they wanted to sell the hospital site. Soon after Mr. Marks and his friends came into power, however, they announced that they intended to sell the premises. No reasons were given for that sudden reversal of policy. The premises had been rendered sanitary at a cost of £2000 and the medical staff were still adverse to removal. The next steps were even more extraordinary. The value of the site, as given by Mr. Marks himself on Feb. 18th last, is £1500 at 30 years' purchase, or £45,000. The committee therefore proposed to sell their enormously valuable freehold property, their only asset, and to spend some £30,000 of the purchase money in building a new hospital on leasehold property in a slum. They were only prevented from that course by the unhesitating condemnation of their projected site by a sanitary expert.

On Feb. 18th Mr. Marks, by means of his following of votes, obtained from the governors full powers to sell the site. No financial details of any kind were, or ever have been, given. The alternative scheme for rebuilding on the present site was not discussed. The fact that the hospital premises consist of two blocks, one facing Hanover-square and the other Oxford-street, renders it easy to keep the hospital buildings at the Hanover-square end, and at the other to build two shops, with staff accommodation overhead. The rent from the two shops would be £800. To build such shops and rebuild the hospital is the alternative scheme. The argument that the site is too valuable to be retained as a hospital will not hold water. To deduct £30,000 from £45,000 is to leave £15,000 in hand. The £30,000 would be sunk in bricks and mortar and the remainder of the £15,000, after purchase of freehold and cost of removal, would be left in hand in lieu of the present splendid asset of the Oxford-street premises. Moreover, the larger new hospital in contemplation would mean a great increase of expenditure. In face of these facts it seems impossible that the Prince of Wales's Fund can have gone into the matter when they urge the sale of the Oxford-street site year after year.

The case seems to be on all fours with that of the Royal London Ophthalmic Hospital in Moorfields which sold the enormously valuable site near Broad-street and moved elsewhere. Their present bankrupt state is now the subject of heartrending appeals. Was their removal undertaken under pressure of the Prince of Wales's Fund? It is to be hoped that THE LANCET will look into this matter and see that arbitrary methods of company directors are not allowed to dominate the interests of an old-established medical charity. Lastly, one would like to know, as the Royal Orthopædic Hospital is a chartered institution, whether the Charity Commissioners will permit so unbusinesslike a scheme as the sale of the present freehold to be carried out.

I am, Sirs, yours faithfully,

London, Feb. 25th, 1901. A GOVERNOR OF THE HOSPITAL.

"THE ALLEGED DRYNESS OF AIR IN ROOMS WARMED BY GAS FIRES."

To the Editors of THE LANCET.

SIRS.—I see by an annotation in THE LANCET of Feb. 16th (p. 495) that Mr. Thomas Fletcher, F.C.S., attributes the unpleasant effects occasionally noticed in connexion with the use of gas-stoves principally to the escape of the products of combustion arising from defective flues. These unpleasant effects are not, however, confined to the use of gas fires, but are noticeable in most forms of close and independent stoves. Long ago it was suggested that this was due in a measure to the organic particles present in the air being decomposed when in contact with the highly heated metallic surface of the stove.

According to Sir John Leslie on Heat and Moisture, the moisture present in the external air is doubled by each increase of 27° Fahrenheit.[1] When air is artificially heated, therefore, and deprived of any means of absorbing the due proportion of moisture, the effect upon the lungs and skin of those subjected to its influence must be painfully apparent. Rapid evaporation and consequent reduction of temperature would naturally take place from all exposed surfaces, causing a contraction of the superficial blood-vessels, while those parts not so exposed would in consequence become congested. These ill effects are less apparent in those forms of gas fires adapted to the ordinary open fireplace. As, however, the object of most makers of gas stoves is the conservation of heat, the independent form of stove is the more popular with them.

I am, Sirs, yours faithfully,

Feb. 19th, 1901. A. C.

[1] Air at 32° F., for instance, contains $\frac{1}{150}$ of moisture, at 59° $\frac{1}{75}$, and at 86° $\frac{1}{38}$.

WEST CORNWALL MINERS' HOSPITAL, REDRUTH.—The annual meeting of the subscribers of this institution was held on Feb. 25th. The medical report stated that 150 patients had been admitted against 137 in 1899. The total cost per bed was £60 per annum. The financial statement was satisfactory and showed a favourable balance of £337. The secretary reported that the late Mr. W. P. Michell had left a legacy of a quarter of the residue of his property to the hospital which it was estimated would amount to about £7500.

THE ORGANISATION OF THE PROFESSION.

(FROM OUR SPECIAL COMMISSIONER.)

(*Continued from p. 666.*)

Origin and Formation of the County of Durham Medical Union.—Strikes Hastily Organised and Insufficiently Supported.—Partial Successes and Partial Failure.—Extensive Importation of Outside Practitioners.—The Gradual Strengthening of the Medical Union.—Dissatisfaction with the Imported Opponents and Return of the Miners to their Former Medical Advisers.

THE first step taken towards the foundation of a medical union is always a matter of considerable practical interest. There are many medical practitioners scattered about the country who feel the necessity of organisation but do not know how to set to work so as to create a medical union. Any information as to the means which can be adopted for this purpose must therefore be of use. Sometimes it is felt that no one in the neighbourhood holds a sufficiently prominent position to be justified in assuming the leadership. In that case it is well if some old-established medical society can take the initiative; but it sometimes occurs that there is no such society available or that it is not disposed to move in the matter. More especially is this the case where the population is widely scattered, as in mining districts. Also the position and material circumstances of the colliery surgeon do not lend themselves to the participation of this section of the profession in the social gatherings and scientific discussions held by the old-established medical societies that exist in various parts of the country and which have their headquarters in the larger towns. The sense of isolation is certainly a strong deterrent to all forms of organisation and constitutes a serious obstacle to the formation of strong and well-disciplined unions among the rural practitioners and the colliery surgeons. These difficulties were undoubtedly present in the minds of the three practitioners who met together in the month of October, 1898, and resolved to make some effort to unite in one association all their colleagues practising in the county of Durham. For the moment it would be more prudent, I am told, not to mention the names of these three bold pioneers. Their names may be handed down to fame when the acuteness of the present struggle has worn itself away. For the present it will suffice to say that they all three practise in the north-east corner of the county, that they felt they had not sufficient personal influence to move the profession at large, and they very modestly entertained doubts as to their organising capacity. Nevertheless, they determined to make an effort and hit upon the very ingenious idea of asking a firm of solicitors to help them. They therefore requested Messrs. Graham and Shepherd, solicitors at Sunderland, to send out circulars to all the medical men practising in the county, urging the necessity of forming a medical union. Including in this appeal the town as well as the rural practitioners, this meant the distribution of more than 400 circulars. The fact that this was done by a firm of solicitors helped to inspire confidence. It could not be said that some particular medical man was seeking to push himself forward, assuming a leadership to which he had not been appointed. The fear also of blunders, of legal errors, was in a measure dispelled by the fact that a business-like firm of solicitors were engaged in the work. The formation of an association is, indeed, a very delicate matter. Here are, for instance, some 400 practitioners; if a few among them, six, or even a dozen, medical men, had formed a nucleus there might be ever so many personal objections to some or all these men. It is true that self-appointed committees, secretaries, or presidents only hold these positions *pro tem.*, and the society when definitely organised may elect other officials. In practice, however, this rarely occurs. It is generally felt, and rightly so, that those who have taken the first steps and done much arduous and unrequited work deserve to be elected as the permanent officials. Thus a personal impress is given to the society at its very birth; and if these personalities are not universally popular this is a source of weakness. Rather than go and vote against the self-appointed committee or secretary, and thus appear to be ungrateful, men who might have been good members stop away altogether. In this case, however, there was no secretary, no committee, no president, only a firm of solicitors who could not be looked upon as rivals by any of the medical men to whom they addressed the circulars. Thus, the personal rivalries, jealousies, and enmities which at the very onset constitute a formidable obstacle to the work of organisation were avoided. Consequently no less than half the practitioners who received this first circular replied in a sympathetic manner.

Encouraged by such widespread support Messrs. Graham and Shepherd sent out another batch of 400 circulars, inviting all the members of the medical profession to meet at the Freemasons' Hall in Durham on Dec. 8th, 1898, and there to discuss the advisability of forming a union. 51 practitioners were present and as everyone had been invited the meeting was sufficiently representative to take action. The proposal to form a union was adopted and Dr. Edward Jepson of Durham was elected its president. Then a council of 12 members was also appointed and the services of Messrs. Graham and Shepherd were retained as secretaries. The council was not only instructed to prepare a set of rules but was authorised to adopt them without convoking another general meeting. This work of organisation was rapidly carried out and terminated at a meeting of the council held on Jan. 10th, 1899, and from that date it may be said that the County of Durham Medical Union was definitely constituted. There was not much time lost before a move was made. Hardly was the medical union fairly in existence than a deputation was appointed to wait on the miners' leaders. The deputation consisted of Dr. Edward Jepson, President; Dr. J. F. Armstrong, Vice-President, from South Shields; Dr. C. F. G. Mann, from Washington; and Dr. J. Murphy from Sunderland. They were received at the Miners' Hall, Durham, by Mr. John Wilson, M.P., Mr. Johnson, the miners' financial secretary; Mr. Henry Cann, their treasurer; and others. Representations were made showing that 6*d.* per fortnight for medical attendance upon an entire family was insufficient. This sum was fixed some 50 to 60 years ago when the cost of living was much higher and the pay received by the miners was very inferior to what they are now earning. Under the present altered and more favourable circumstances the miners could well afford to pay 9*d.* per fortnight. On the other hand, the cost of medical education, of drugs, and of surgical instruments had greatly increased. The miners' representatives did not attempt to controvert any one of these statements. They simply explained that they had no power to deal with the matter. The miners were free to make whatever arrangement suited them best for medical attendance. Such questions should be negotiated with the men themselves or with whatever local organisation they might have established for the purpose of securing medical aid.

Thereupon the medical union at once prepared a letter which was forwarded on Jan. 26th, 1899, to every miners' lodge or organisation throughout the county, numbering in all 181. The letter inclosed a printed report of the meeting held by the members of the medical profession at which the question of raising the fortnightly subscription from 6*d.* to 9*d.* had been discussed and asked that the matter should be laid before the members of these organisations. If there were any objections the medical union would arrange for a deputation to meet the subscribers and discuss the matter amicably. This circular had been sent everywhere and not merely to those districts where the medical men had joined the medical union.

On March 2nd, 1899, the council of the County of Durham Medical Union met to discuss the answers received. From the 181 lodges, &c., only 42 replies had been received. The great majority evidently refused even to consider the proposal. Some desired to discuss with a deputation, as had been suggested; only a few accepted and undertook henceforth to pay 9*d.* instead of 6*d.* per fortnight. It was thus early rendered evident that the position of the profession was not to be improved, at least on a large scale, without a struggle, and perhaps a severe struggle. Consequently there would be victims, and therefore the first step was to make good provision so as to come to their assistance. A general meeting was convoked in Durham on March 7th, 1899, and it was then resolved to establish what was called an Indemnity Fund. So as to start this fund two medical men each subscribed £10 10*s.* Five others gave £5 5*s.* each. 14 practitioners promised to give 10*s.* weekly and seven put themselves down for 5*s.* per week. A circular giving these results was issued and it brought further subscriptions. It was decided that this fund should be administered by the President and the Vice-President only, so as to avoid unnecessary publicity. Members who were in need

of such assistance were requested to apply to the secretaries and to show their books establishing the loss they had experienced to the solicitors. They were assured that they would then receive every help, financial and otherwise. Those members who had obtained the increased rate of payment through the efforts of the union were urged to subscribe liberally; at the same time they were informed that they would not be called upon to fulfil their promises unless the money was really needed. This fund had barely been constituted when two practitioners had to be indemnified. In answer to their demand for the 9*d*. the miners had imported a medical practitioner who at first did all the work, and the two old-established practitioners found themselves without patients and without income. Fortunately, these imported practitioners rarely give satisfaction, and the miners gradually, one by one, came back to their old practitioners, so that the two practitioners who at first received financial assistance have now no longer any need for help from the indemnity fund.

Unfortunately, all the colliery surgeons had not the courage to hold out. Indeed, and as often happens in such cases, it was some of those who had been the loudest in clamouring for immediate action and in proposing a general strike who were the first to give way. They seemed to think that such contests are won by mere words and that the miners would yield at once. But the miners felt that if the medical men's cause was really a good cause it was worth fighting for, and if the medical men had so little faith in their own claims as not to fight for them then the miners need not trouble to make financial sacrifices on behalf of such milk-and-water individuals. The fact that there were a considerable number of week-kneed practitioners who mildly submitted to the refusal made by the miners rendered the struggle all the harder for those who had the courage to hold out. At Framwellgate Moor, at South Moor, and at Craghead, the colliery surgeons held out well. Opponents were imported, the colliery surgeons lost their patients, but still they persisted and the patients slowly returned to them. At the onset only a few medical men stuck to their point. There was no general battle but scattered skirmishes occurred, and when one colliery surgeon had won the day then some others in the neighbourhood would pluck up courage and enter the lists. Whenever the miners advertised for an outside practitioner to come and to establish himself in their district the County of Durham Medical Union immediately published counter advertisements in the same papers urging no medical man to accept these offers without first communicating with the secretaries of the medical union. This led to a great mass of correspondence; but, to the credit of the profession be it said, not a single one of the correspondents accepted the offers made by the miners after they had been informed of the true state of affairs. Thus the offers were only taken up by a class of men who find it difficult to get employment otherwise. That there is such a class is a fact that cannot now be denied and it is an important fact which must be dealt with. In the county of Durham alone some 20 such men have been imported.

The first annual meeting of the County of Durham Medical Union was held on June 6th, 1899, some six months after the definite creation of the union. It was then shown that 214 medical practitioners had adhered to the principles of the union and that 201 had paid their subscriptions as members of that organisation. As there are, in all, about 430 practitioners in the country, and as the union had not yet dealt with the interests of the town practitioners, this total of membership cannot be considered otherwise than satisfactory, at least for a beginning. The objects of the union are wide and far reaching, but so far the union has only attended to the one question of raising the subscription for contract work for the colliers. Unlike the Northumberland and Newcastle Medical Association, which is worked on the principle of centralisation, the rules of the county of Durham Medical Union admit the formation of district committees. It is true that the members of these local associations are to pay their annual subscription to the central body, but they are to be allowed by the general council any reasonable expenses incurred in carrying out the work of local organisation. At the first annual meeting it was stated that 10 such local committees had been formed and that the South Shields Medical Association had been affiliated to the County of Durham Medical Union. It was also reported that the colliery surgeons in eight districts had from the very first adhered to their notices demanding the increase. Strangers had been imported in seven out of these eight districts. At Southmoor five medical men had been imported, but only one remained; the others had left after a few weeks' experience of the unpleasantness of their situation. In the Stanley district the inaction of the majority of the local practitioners was a great source of weakness. Mr. Ingram-Johnson and Mr. S. J. Fox alone refused to accept less than the 9*d*., and they had to contend, not only against the importation of eight outsiders, but also against their colleagues and neighbours who were too timid to persist in the demand. At Washington also some of the local practitioners gave way, but Dr. Mann and Dr. W. Jacques held out manfully, though an opponent was imported to compete against them and is still in the district. Little by little the miners have individually returned to these practitioners and consented to give the 9*d*., so that these two surgeons have now gained back their former position, and in the course of time it will doubtless be considerably improved.

On Jan. 24th, 1900, a large general meeting of the County of Durham Medical Union was held. The union had then been in existence a full year, but complaints were still made of want of courage. The local committees were in dread of the family clubs organised by private practitioners and which could not be controlled. The report suggested that a minimum fee should be established for such clubs. On the other hand, the members present were cheered by the announcement that at Monkwearmouth 1400 miners were now paying the 9*d*. Five more collieries had been notified and four had got one practitioner from outside whom they shared between them, but he did very little harm. The Stanley district was again warned. Two practitioners had each received £50 from the indemnity fund, but there had been no other calls for such assistance. The employment of an unqualified assistant had been discovered by the council of the union and he had been denounced and had now left the county. It was urged that all members of the union should set a good example in this respect and not employ unqualified assistants. Canvassing which had been practised at Auckland was reported to the General Medical Council, but this body asked for affidavits which were difficult to procure. As the expenses had been very heavy it was found necessary to increase temporarily the annual subscription from half-a-guinea to one guinea. Dr. Alfred Cox of Gateshead gave a report in regard to a conference held at Newcastle during the previous month of November on the question of direct representation on the General Medical Council, with the result that the meeting passed the following motion:—

> That this meeting is of opinion that the medical profession is not sufficiently or properly represented on the General Medical Council and it is strongly recommended that all representatives from universities and corporations be elected by the individual votes of medical graduates of each university and members of such corporations.

During the ensuing month of March a circular was sent to all the practitioners of the county urging those who were not already enrolled to join the union and pointing out that at least 100 members had already had their incomes substantially increased by the efforts of that organisation. But it was necessary to deal, not merely with the contract work of the colliery surgeons, but also with family clubs, friendly societies, yearly boxes, midwifery fees, certificates, &c. In several places these questions had been taken in hand and with success. Soon after this, in June, 1900, the second annual meeting was held, when it was reported that success had been achieved in some more collieries, but that there was a prolonged struggle at Bishop Auckland and that the state of affairs in the Stanley district was still very deplorable. The imported practitioners had now departed from the Craghead district. At the Wardly Colliery district it had been difficult to get the colliery surgeons to act together. One of them was not a member of the union; nevertheless, the demand for the increase had been made and in reply a somewhat inoffensive opponent had been imported. In another district an imported practitioner had been compelled to appear before the General Medical Council to answer the charge of employing an unqualified assistant. Some districts still refused to give the increase and a few practitioners had suffered substantial loss. At Sunderland, South Shields, and Stockton the friendly societies had been approached with a view of improving the position of their medical officers.

All last year the work of organisation was continued and actively pressed forward. Throughout the President of

the union, Dr. Jepson, had been indefatigable, travelling long distances to interview recalcitrant practitioners, to attend local committees, or to address meetings of medical men so as to explain the action and policy of the union. Then there had been all manner of efforts made to get rid of the imported practitioners, and they, too, had been interviewed and many letters had been written to them. Of course, they were boycotted and none of the members of the union would meet them in consultation. Even the practitioners who were not members of the union joined in this boycott. If a second opinion was desired the imported practitioner must retire from the case. When the last annual meeting was held—and it took place on Feb. 5th, 1901—still further progress was reported. During the course of the year that had elapsed a considerable amount of important work had been done. In various districts, which at first had not joined in the movement, the members of the union were pressing for the increase and had met with at least partial success. It was strongly felt that the demand for the increase must be made at once while the high rate of wages still prevailed. There were very emphatic indications that the present state of prosperity would not last, and it would be very difficult for the colliery surgeons to obtain a rise in the face of a downward tendency in wages. At Hetton the local practitioners had been induced by the union to stand out for the increase and they had been entirely successful. Similar applications were made in the adjoining districts of Seaham and Silksworth, but one of the local practitioners hesitated to press forward his claim and preferred to renew his application at a later period. At Silksworth the colliery surgeon held out, and the colliery manager, acting in consequence of a notice he had received from the miners, determined that he would not retain any sum from their wages for medical purposes. The miners here threatened to form a medical aid association, but the local practitioners were striving to meet this by persuading individual miners to sign an agreement to pay the 9*d*. and arranging to have this sum collected independently of the colliery office. This had been so successful that out of 830 houses the inhabitants of 710 houses had accepted the proposal and were now paying the 9*d*. to a collector. It was suggested that this method of proceeding might with advantage be more generally introduced in other districts. At Crook strenuous efforts had been made to persuade an imported practitioner to leave, and though this was not achieved he was induced to raise his charge from 8*d*. to 9*d*. per fortnight, and therefore the members of the union were now competing with him on equal terms. Perhaps, however, the greatest event recorded was that the practitioners in the Stanley district had at last been brought into line. They had once again plucked up courage, made their demand, and this time stuck to it. The result was a complete success. A few malcontents were striving to get a practitioner to come to the district and to practise at the old rate of payment, and went about canvassing to secure adherents. Thereupon Messrs. Graham and Shepherd wrote and threatened them with legal proceedings, and this had somewhat damped their ardour. They had almost secured the services of an outside practitioner; but when the latter found that there was a chance of his being brought up before the General Medical Council for being in the service of an organisation that practised canvassing he promptly disclaimed any connexion with the concern. The members of the medical union who resided in the town of Sunderland, but who attended to patients who worked in neighbouring collieries, had also secured the 9*d*. and were now pressing similar claims on the friendly societies established in the town. In this latter direction some improvements had already been effected. The report presented at the third annual meeting then went on to say:—

> Our members will no doubt have noticed that attempts to form medical aid associations are in progress all over the country. This is a question that the General Medical Council ought to take up. They have already expressed disapproval of practitioners canvassing for patients and it is felt that they ought also to condemn and declare that it is infamous conduct in a professional respect for any registered practitioner to become the paid servant of any medical association formed and carried on by working men. The council intend, when sufficient evidence is obtained, to lay the facts before the General Medical Council and press them to take the matter into their consideration.

Such are the most salient facts connected with the history and development of the County of Durham Medical Union. Like all other movements, this union has had to learn by experience and has blundered from want of experience. There were at first over-confidence and a tendency to make efforts without due preparation and consequently they were not efficiently and strenuously sustained. The miners, on their side, complained that the medical men were lacking in tact in the way in which they opened negotiations. Some practitioners had a tendency to lay down the law and assumed a tone that unfavourably impressed the miners. After all, there were two sides to a bargain, and when some colliery surgeons declared that henceforth they were not going to do this or that, as if the decision rested entirely with them, the miners took the other view and thought that they also had a voice in the matter; and as there seemed to be no disposition to consult them they determined to act independently and to import medical men who would accept without question their terms. This feeling and attitude were not general, but they existed in some localities; and there could be no doubt but that some colliery surgeons were lacking in tact. They seemed to have forgotten that the miners, by the strength and discipline of their trade unions, had compelled the colliery owners to treat them on a footing of equality, and they expected to be treated by the medical men, whom they paid, with at least as much deference as was shown to them by the colliery owners from whom they derived their wages. But apart from this somewhat sentimental aspect of the question there was the material grievance that the miners did not get proper medical advice. Anybody seemed good enough to attend a miner when he was ill. Any unqualified assistant was sent to see the patient. Hardly any miners really object to pay the 9*d*. per fortnight or think the sum too large if they obtain in exchange careful treatment from a fully qualified practitioner, but they object to pay this sum if they are to be attended only by an unqualified assistant, and such unqualified assistants still exist in the county of Durham.

It will be seen from the above that the County of Durham Medical Union is quite in agreement with the miners on that question and that active measures have been taken to get rid of all the unqualified assistants. Under all these circumstances, and when time has rubbed off a few rough corners, there is every hope that both sides will come to terms amicably. The leaders of the miners—and I have lengthily discussed the matter with them—are really anxious to be on the best of terms with the members of the medical profession. There are mutual interests that should unite them. The Miners' Union give sick allowance to their members during illness, and it is therefore to their interest that malingering should be prevented and that the sick should be cured and return to work as soon as possible. On the other hand, the medical practitioners, if they do their best to insure these results, have the right to claim to be remunerated sufficiently. Thus with the abolition of the unqualified assistant, with a greater show of deference on each side, with a better understanding of each other's interests, peace may ultimately be brought about and the remaining contentions set at rest.

Durham, Feb. 25th.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Plague Epidemic.—The Famine Fund.—Hospital Ship for China.—The Queen Victoria Indian Memorial.

THE mortality from plague proceeds apace—declining in some places while it is rapidly rising in others. For the whole of India there were 3415 deaths last week, as against 3396 in the previous week and 1869 in the corresponding week last year. The chief increase has occurred in Bombay city, where the general mortality has risen to 1941, including 786 deaths from plague. This is a rise in one week of 320 plague deaths and of 522 in the general mortality. When it is mentioned that the normal mortality should not exceed, say, 500, the disastrous nature of the outbreak will be understood. This fifth outbreak looks as unfavourable as any that has preceded it. By comparison with previous charts it can be seen that the rising death-rate is proceeding on exactly parallel lines and indicates that there will be a still higher mortality for several weeks to come. In Bengal the total number of plague deaths has not increased, only 2129 deaths having occurred as compared with 2261 during the preceding week. Patna reports 1212 deaths, Saran 514, Mongbyr 245, Gya 36, and Calcutta 71. The outbreak in Calcutta is developing, more cases having

occurred in the quarter always first attacked, and a larger number of undoubted cases with a smaller proportion of suspicious deaths having been reported. Small-pox, however, is raging in the city and this caused 120 deaths last week. From previous experience elsewhere there is no evidence to show that this disease running at the same time effects any modification in the course of the plague outbreak. Elsewhere the disease does not indicate any marked virulence. More cases have occurred in Karachi which seem to herald an impending outbreak, and the plague has at last shown itself in Benares city. In many villages around it is still spreading. The Madras Presidency returns only 44 deaths, the North-west Provinces 14, the Punjab eight, and the Mysore State 269.

Famine in certain districts still continues. Some idea of the cost both to the Government and to the country has been previously published. The thirty-fifth list of subscriptions towards the famine fund has just been published and shows over 144 lakhs of rupees, equal to nearly a million pounds sterling. Assistance has been received from all parts of the world, which shows the sympathy of other peoples in probably the greatest famine that India has ever known.

The hospital ship *Gwalior*, which is maintained by the munificence of His Highness the Maharajah Scindia of Gwalior and which is estimated to have cost that prince £120,000, has sailed again for China. The following officers are in charge:—Lieutenant-Colonel A. M. Crofts, I.M.S., Lieutenant-Colonel W. Coates, I M.S., Captain Jay Gould, I.M.S., and Lieutenant G. Tate, I.M.S. Reliefs are being taken out, and it is hoped that the *Gwalior* will be able to bring away the sick and invalids from Peking which the *Carthage*, recently returned, was unable to do owing to the rivers being frozen.

An Indian memorial to Queen Victoria is contemplated and the support it has already received is unparalleled. Before a meeting was held or a subscription list opened nearly £200,000 were promised. It is proposed to erect a magnificent hall on the north end of the Maidan of Calcutta and to surround it with gardens. This will be the national memorial and it is fitting that it should be placed in the capital. Other cities are already arranging to have memorials of their own. Some of the princes of India have already shown their loyalty by a splendid munificence, the Nawab of Dacca having promised Rs.50,000, the Maharajah of Gwalior Rs.1,000,000, the Maharajah of Kashmir Rs.1,500,000, and the Maharajah of Jeypur Rs.500,000.

Feb. 9th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Progress at the Manchester Royal Infirmary.

THE admission of women students to the wards of the Manchester Royal Infirmary would have been scouted 50 years ago as revolutionary and worse. Now, however, the change is made without exciting surprise or feeling and the matter occupies just three lines of the report of the infirmary that has just been issued: "On the application of the Council of the Owens College and with the concurrence of the medical staff it has been decided to admit women students to the hospital practice of the Infirmary." A second important and wise decision has also been arrived at. The report says: "Your board have come to the conclusion that it would be desirable in the interests of the institution that the honorary staff should be more intimately connected with its management." Four of the staff being trustees—i.e., being subscribers of three guineas or more annually—may be elected annually by their colleagues to serve on the board of management. The question of rebuilding on the present site or removing the infirmary is also apparently settled in favour of the former and has so far advanced that plans and estimates are now being obtained.

Crusade against Tuberculosis.

Dr. Harold Coates, the special medical officer employed by the city council to assist in the crusade against tuberculosis, has been making investigations as to the infectivity of the dust found in the dwellings of tuberculous patients. The samples were collected with strict aseptic precautions. The dust was mixed with sterilised water and was then used to inoculate guinea-pigs. In many cases the animals died within 48 hours from septic disease due to germs other than the tubercle bacillus. The others were killed a month afterwards; post-mortem examinations were made, and where tuberculous lesions were found microscopical preparations were made and the bacilli were demonstrated. The houses examined were divided into three classes: 1. Dirty houses, where consumptive patients take no precautions to dispose of their expectoration so as to prevent infection of the atmosphere. Of this class 23 were examined. 2. Very clean houses, but where consumptive patients were living who were not sufficiently careful. 10 of this class were examined and in five—i.e., 50 per cent.—infective dust was found. 3. Very dirty houses in which there had been no case of tuberculosis for some years past. A number of houses, all very dirty, but where there was a clear history that no case of tuberculosis had occurred for three years or more, were selected, and in no case was infective dust found in them. It has been the practice of the Manchester Hospital for Consumption for several years past, with the coöperation of Dr. Niven and the health department of the corporation, to have the houses of the patients disinfected, for it was found that many of these patients who were apparently cured became re-infected on returning to their homes. The plan adopted in Manchester is that of disinfection of walls, floors, ceilings, furniture, &c., by washing with a solution of chlorinated lime, one and a half ounces to the gallon, which is found to be thoroughly efficient. The importance of precautions in the disinfection and disposal of expectorations is by now becoming known to the more educated portion of the community, but there is a great amount of apathy and ignorance among those who form the bulk of the out-patients of the hospitals.

Typhus Fever in Ancoats.

Since Dr. Niven's first report to the sanitary committee of the Manchester City Council 25 more cases of typhus fever have broken out. So far as ascertained the total number amounts to 60. Nine of the patients who were removed to hospital have died. It seems that most of those "by whom the disease has been introduced into households or by whose instrumentality the disease has been spread" have been rag-sorters or tobacco workers. But the original cases have been traced beyond them and the connexion is now considered doubtful between these trades and the outbreak. Meanwhile the outside source of infection has not been discovered. There is nothing in the work of the tobacco factory to aid in the spread of the disease, "and it is possible that the large number of cases occurring in this occupation and in the sorting of rags is due rather to the poverty and wretched homes of the workers than to the character of the work," but the possibility of its spread from rags or tobacco has been taken into account and preventive measures have been taken. Dr. Niven expresses himself indebted for assistance and counsel in dealing with the outbreak to Dr. C. H. Braddon, the chairman of the hospitals sub-committee.

The Owens College Jubilee Memorial Fund.

The fiftieth anniversary of the opening of Owens College will occur on March 12th. It is unnecessary to say anything as to the important work that has already been done by the College for higher education, not only locally but through the country at large. Since it was founded other university colleges have sprung into being, as at Birmingham, Bristol, Leeds, Liverpool, Newcastle, Nottingham, and Sheffield, having had their origin, Manchester may claim, to a great extent in the example set them in Manchester But the growth of the College and the extension of its work involve financial necessities, and it is proposed to commemorate this Jubilee year by raising an endowment fund equal to that bequeathed by John Owens. This means at least £100,000. Another sum of £50,000 is to be raised so as to clear off debts and "to repay the deficit on income account in past years." The largest of the debts is £22,000, "the balance of the sum which was required to complete the buildings of the Medical School on a scale commensurate with its high rank among the medical schools of the kingdom." Already five sums of £5000 eacn have been promised and it is hoped that the remaining large sum will be obtained without any extraordinary difficulty. The appeal draws attention to the large amounts raised in America for educational purposes, it having been computed that since 1883 at least £22,000,000 have been given by private citizens (apart from State aid) to promote advanced education in their country—an example to be followed, it may be hoped, by some of the wealthy Lancashire people.—At the half-yearly meeting of the Court of Governors, held on March 5th, the appointment of Dr.

R. B. Wild to the Leech Professorship of Materia Medica and Therapeutics was confirmed.

The Port of Manchester.

A meeting of the Manchester Port Sanitary Authority was held on March 4th. The medical officer's report showed an absence of serious sickness on the 93 vessels which had entered the port since the last meeting. Dr. J. H. Crocker is leaving for Richmond, where he has been appointed medical officer of health, and his resignation has been accepted with regret. In this, his final report, he says that he "had never felt quite sure that some cases of plague or small-pox might not escape him owing to his inability to be present at the arrival of every vessel." Fortunately, no case of plague has escaped him, and, indeed, a most assiduous watch has been kept up. He stated that it was advisable to appoint a medical officer who should devote the whole of his time to port sanitary work, and as his time would be fully occupied at Manchester it would be necessary to arrange for deputies at other parts of the port. Rats were mentioned as a great source of danger, and it was suggested that the ships should be kept four or six feet from the quay and the ropes guarded to prevent the rodents from swarming upon them. In all ships the rats should be exterminated and in the warehouses, too. After some discussion it was agreed "to advertise for a medical officer to devote his whole time to the work outlined in the report, the salary to be £350 a year." This gentleman must, of course, be well qualified, must have a diploma in public health, and must be always on the alert, for his responsibilities will be great and constantly increasing with the increase of traffic, so that the salary proposed does not err on the side of liberality.

March 6th.

WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Cardiff Infirmary: Local Public Spirit.

THE annual meeting of the supporters of the Cardiff Infirmary has of late years been a gathering at which the single story has been told of increasing expenditure and lessening income with the natural accompaniment of a standing debt mounting higher and higher. Year after year suggestions have been made for lessening the expenditure or for increasing the income of the institution. Wards have been closed and small economies have been effected, while bazaars, balls, and concerts have been organised for the purpose of reducing the adverse balance. In spite, however, of every effort the amount of indebtedness increased until at the beginning of the year 1900 it stood at £10,700 and although there was an increased income during the year of £825 and a decreased expenditure of £612 the executive committee managed to spend £633 more than they received. At the end of 1900, therefore, the standing debt was £11,333. The decrease in the expenses is attributed to the closing of the special gynæcological wards which contained 30 beds and were opened three years ago. The reduction of the number of beds in the infirmary constantly available from 150 in 1899 to 120 in 1900 is said to account for the increase in the annual cost per bed from £54 5*s.* in the former year to £63 15*s.* in the latter. It had long been felt that only by a great effort, and one which was supported by the leading men in the town, could the institution be cleared of its incubus, so that when the newly elected mayor (Mr. T. Andrews) announced on Nov. 9th last that he was determined to wipe out the debt brighter prospects seemed in store. Although subscriptions, some of considerable sums, came in rapidly in response to the mayor's appeal it is doubtful if he could so speedily have achieved his purpose without the assistance of one of the Cardiff daily papers, the *Western Mail*, the managers of which inaugurated a "shilling fund" and placed at the head of it their own munificent subscription of 500 guineas. In a little over three months, at the annual meeting on Feb. 27th, the mayor was able to hand over a cheque for £11,272, a sum which was practically sufficient to extinguish the debt and which included £5697 sent to the mayor's fund, £5375 sent to the *Western Mail*, and £200 sent to a fund established by the Mayor of Cowbridge, a small town which is joined to Cardiff for Parliamentary purposes.

Refuse Destructors.

The large towns in South Wales have been slow to adopt the methods of refuse destruction which have for many years been employed in other parts of the United Kingdom, notably in the manufacturing towns of the north of England. At Cardiff, at Swansea, and at Merthyr house refuse is still carted out to large "tips" in the suburbs of those towns. In the Rhondda valley there is approaching completion a destructor of the type known as "Mason's gasifier," which appears to have recommended itself to the sanitary authority in consequence of the small chimney which is required, a factor that can be appreciated in those localities where the refuse to be destroyed cannot readily be brought to a central depôt, but has to be dealt with in different parts of the district. At Barry a destructor was formally started on Feb. 27th and is actually the first to be erected in South Wales. It is of the Beaman and Deas type and consists of two cells which are said to be capable of burning 30 tons of refuse per day of 24 hours. The entire cost of the installation is £7500.

Pembrokeshire and Haverfordwest Infirmary.

The annual report of this institution states that during the year 1900 there were treated 99 in-patients and 673 out-patients at a cost of £869. The total income for the year from interest upon investments and from subscriptions amounted to £860. It is anticipated that the alterations in the drainage, &c., which are now being carried out will be completed and will permit of the wards being reoccupied by the beginning of May.

The Medical Officers of Health of Haverfordwest.

Mr. George Griffith has resigned his appointment as one of the four medical officers of health for the Haverfordwest rural district. The population of the whole district is about 32,000 and the area 160,000 acres. Each of the medical officers of health receives a salary of £20 per annum.

Public Health Laboratory at Cardiff.

The Cardiff and County Public Health Laboratory has been established nearly three years, and the increasing usefulness of the undertaking is demonstrated in the report of the bacteriologist (Dr. W. G. Savage) for the year 1900. Three suspected cases of plague were bacteriologically investigated during the year—two with a positive and one with a negative result. For suspected diphtheria 243 specimens were examined and in 72 instances Klebs-Löffler bacilli were found; Widal's reaction occurred in 73 specimens examined and tubercle bacilli were demonstrated in 36 of the 86 specimens of sputum examined. There were bacteriologically examined 119 samples of water and 198 additional samples were submitted to chemical examination. A small fee is paid by medical practitioners or medical officers of health who forward material for bacteriological examination, but all samples of water sent by medical officers of health within the administrative county are examined both bacteriologically and chemically free of charge.

Royal West of England Sanatorium, Weston-super-Mare.

The annual meeting of the subscribers of this institution was held on Feb. 23rd. The medical report stated that 2120 patients had been admitted during 1900—an increase of three as compared with the previous year. 8462 hot and cold sea-water baths had been given and had afforded much relief in rheumatism. The financial statement showed that the total income for the year was £3788 and that the expenditure amounted to £3471. Mr. F. J. Fry was re-elected president.

Exeter Dispensary.

The annual meeting of the governors of this institution was held on Feb. 23rd. The medical report stated that 5571 patients had been treated during 1900, against 6256 in 1899. The financial statement showed a favourable balance of £212. The chairman (Mr. S. Ward) said that by a rule of the dispensary members of clubs who were entitled to medical treatment and medicine were not eligible as patients.

March 5th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Small-pox in Edinburgh.

As was to be expected several fresh cases of small-pox have shown themselves in Edinburgh. At the date of

writing there are four cases in hospital. The public are not yet, however, sufficiently alarmed to seek revaccination to any great extent. A circular has been issued by the Local Government Board to local authorities, recommending the coöperation of the local authorities of county districts with those of burghs and the prompt establishment of small-pox hospitals and houses of reception, while it also refers to the power now given to local authorities by the Public Health (Scotland) Act, 1897, to offer free vaccination when such appears necessary.

Edinburgh Royal Infirmary.

A meeting of the managers of the Edinburgh Royal Infirmary was held on March 4th. Dr. D. Berry Hart was appointed gynæcologist, in room of Dr. J. Halliday Croom whose term of office had expired. Dr. Croom was appointed honorary gynæcologist to the institution. The quarterly financial statement was presented by the convener of the house committee, being the accounts of expenditure and revenue for the quarter ending Dec. 31st, 1900. This statement showed an increase in the quarter on the ordinary expenditure of nearly £1000. In maintenance there was an increase of £140 1*s.* 5*d.*; in medical expenditure, £57 11*s.* 9*d.*; in wages, £235 1*s.* 7*d.*; in coal and dross, £624 11*s.* 9*d.*; in lighting, £106 11*s.* 4*d.*; in salaries, £155; and in taxes, fire-insurance, &c., £31. The increase in most of those departments was due to a rise in the price of articles bought. The total ordinary expenditure for the quarter had been £13,526 10*s.* 4*d*, so that at that rate the infirmary would cost at least £1000 per week, or over £54,000 in the year. Mr. Blair pointed out the necessity of encouraging the public and others to increase their subscriptions and donations. It was arranged that a private meeting of the managers should be held to examine the accounts.

University of Edinburgh.

The Senatus Academicus has offered the honorary degree of LL.D. to (among others) Dr. James Little, Regius Professor of Physic, University of Dublin, and to Sir John Williams, Bart. At a meeting of the Edinburgh University Court held on Feb. 18th the Senatus reported that the Faculty of Medicine had appointed Professor A. R. Simpson to be Dean of the Faculty in room of Professor T. R. Fraser, who had resigned that office. The court approved of various grants, recommended by the Senatus, from the Earl of Moray Endowment Fund for the following researches: 1. Research by Dr. J. M. Beattie on the Origin, &c., of Cells in Inflammation. 2. Researches by Mr. Nelson Annandale in the Malay Peninsula. 3. Researches by Dr. J. H. Ashworth on Marine Worms. 4. Research by Dr. Beard on the Development of the Elasmobranch Fishes. The court granted the application for recognition by Dr. Alexander Bruce, Edinburgh, as a lecturer in medicine. It was agreed to accept with thanks the sum of £200 offered by the Scottish Association for the medical education of women and subscribed for the foundation of a prize for women students of medicine in memory of the late Janet Dorothy Gilfillan, M.B., Ch.B. Edin.

The Glasgow Small-pox Epidemic.

The report issued on March 1st announced that during the past week 130 new cases had been admitted to hospital, 90 patients had been dismissed well, and 10 deaths had occurred. The number of patients remaining in Belvidere on March 1st was 385, an increase of 30 on the previous week. This record has produced great disappointment and something like consternation in the city. The recent announcement of the discontinuance of the daily bulletin had produced a general impression that the worst of the epidemic was passed and that there was no longer any need for anxiety. But it is now recognised that these favourable anticipations were ill-founded and the tension of public feeling has correspondingly increased. Apart from the serious features of the epidemic as painful and serious facts, it is keenly realised that the existence of small-pox in the city on so extensive a scale is likely to exert a most prejudicial effect on the success of the forthcoming exhibition, and this feeling has found expression in the public press. With a view to allay public anxiety the Lord Provost on March 3rd received and made a statement to the chief reporters of the local newspapers. His lordship announced that 20 additional inspectors had been appointed and that the whole time of the inspectors was to be devoted to house-to-house visitation with a view to discover unvaccinated persons and to press on all the necessity of revaccination. In his weekly report the medical officer of health draws attention to the large proportion of adults among the patients as showing that it is those who neglect revaccination who keep small-pox active in the city. He also alludes to the influence of a fall in the number of cases on the practice of revaccination. The number of revaccinations reported during the past fortnight reached a total of 77,562, but judging from the amount of lymph given out during the last few days there has been considerable less activity in this direction. The mild cases of the disease, which are often regarded as chicken-pox or "spots" caused by "indigestion," cause the health department much trouble, as they are both difficult to discover and produce numerous "contacts" which it is impossible to trace. As indicative of the popular feeling the *Glasgow Herald* calls for the appointment of a special commission consisting of leading physicians and representatives of the health authorities. It also proposes the mapping out of the city into some 150 districts, each to be put in charge of a medical officer and a lay assistant. There is certainly a need for energetic measures if the city is to be made safe for its inhabitants and attractive to visitors. This claim has all the more urgency in view of the approach of the months which provide the seasonal conditions that favour the spread of small-pox. Dr. A. K. Chalmers warns the public that there is need for increasing apprehension if the apathy in reference to revaccination which has recently manifested itself is allowed to continue.

Faculty of Physicians and Surgeons of Glasgow.

Dr. A. K. Chalmers and Dr. Robert S. Thomson having passed the necessary examinations have been elected Fellows of the Faculty. Dr. Robert Muir, Professor of Pathology in Glasgow University, has also been admitted to the Fellowship.

Medical Appointments.

Mr. David Chalmers has been appointed casualty surgeon to the Glasgow Southern Police District. Dr. E. A. Gibson has retired from the position of obstetric physician to the Glasgow Training Home for Nurses, his term of office having expired.

Scottish Special Hospitals.

The fifteenth annual report of the Glasgow Samaritan Hospital for Women gives evidence of the increasing usefulness of this charity. The pressure on both the in-patient and out-patient departments has become so great that the directors have been compelled to consider the possibility of increasing the hospital accommodation. They propose, therefore, to build a new wing to provide 20 beds and two operating rooms at an estimated cost of £7000. Towards this sum the trustees of the Bellahouston bequest have generously contributed £1700 and the directors now appeal to the public to subscribe the balance, at the same time intimating their intention not to commence building until the greater part of the sum needed has been promised. The report gratefully acknowledges the gift of a convalescent home by a lady who desires to remain anonymous.—The annual meeting of the subscribers to the Glasgow Cancer and Skin Institution was held on Feb. 26th, and the chairman, in moving the adoption of the report, announced that it would be necessary, in view of the increased demands for admission, to contemplate the enlargement of the hospital at an early date. The vote of thanks to the medical staff was proposed by Dr. David Yellowlees who paid a high compliment to the excellence of the work of the institution both in the wards and the laboratories.—At a recent meeting of the subscribers to the Paisley Eye Infirmary it was announced that Mr. Kenneth M. Clark had presented to the institution a complete outfit of instruments at a cost of £500.

Scottish National Red Cross Hospital.

The staff of this hospital have determined to celebrate their associated work in South Africa by holding an annual dinner and the first meeting took place in Glasgow on March 1st. The chair was taken by Mr. J. Luke, in the unavoidable absence of Mr. Henry E. Clark, senior surgeon. The other members of the staff and a number of medical students who acted as dressers were also present. In the course of the evening the chairman presented to the members of the hospital burgess tickets constituting them freemen of the City of Glasgow.

March 5th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Cullen Case.

WHAT has been known as the "Cullen case," has caused much interest in Dublin for a period of many months and has been the subject of much comment in the press. It will be remembered that an outbreak of enteric fever took place more than a year ago at the north side of Dublin which was traced to infected milk supplied from a dairy situated in the Castleknock district, the proprietor of which suffered from that disease. The Local Government Board held an inquiry, and although the resident medical and sanitary officer declared that he was not aware that his patient owned a dairy, the Board after full investigation decided on calling for the resignation of the two officers of the corporation who had neglected to inspect or register it, and of Mr. J. J. Cullen, the dispensary medical officer, who had omitted to notify the case. The latter tendered his resignation, but the board of guardians declined to accept it and appointed him to do the medical work of the district as "locum-tenent," a position which he has held for many months and up to the present date. On August 10th, 1900, the Local Government Board applied for a conditional order for a mandamus directed to the guardians of the North Dublin Union ordering them to elect a duly qualified person in the place of Mr. Cullen. On August 15th, when an application was made by the guardians for an extension of time to enable them to show cause against the conditional order, Mr. Justice Barton said that the motion ought to be heard by the full court. He said that there could be no more important case than this, in which a great department of the State was in conflict with one of the elected representative bodies of the country. Therefore it ought to be heard by the full court, and their decision should be accompanied with all the authority which a court of justice could give to a case of this kind. Accordingly, on Nov. 29th the application of the Local Government Board for Ireland against the Board of Guardians of the North Dublin Union was heard in the Queen's Bench Division before the Lord Chief Baron, Mr. Justice Andrews, and Mr. Justice Boyd, the arguments being sustained by a full representation of the Irish Bar and occupying two days. On Dec. 10th the Lord Chief Baron delivered the judgment of the court and said that the conditional order for a mandamus would be made absolute. The merits or demerits of Mr. Cullen's conduct were not considered and were pronounced to be inadmissible, the decision of the court, as the Lord Chief Baron stated, being based on purely legal and technical grounds. He said that the Local Government Board were wrong in their plea that Mr. Cullen's resignation (sent to the Local Government Board and to the board of guardians but not accepted by the latter) rendered his position vacant, but that *per contra* the appointment of him as a "locum-tenent" signified that the dispensership at Castleknock was vacant. The latest stage of this weary case, and one which perhaps gives it some additional importance, is as follows On Feb. 27th the weekly meeting of the North Dublin Rural District Council was held when the Lord Mayor of Dublin, Mr. Harrington, M.P., after a speech in which he arraigned the action of the Local Government Board, proposed a motion that Mr. Cullen was a fit and proper person to fill the position of medical officer to the Castleknock and Blanchardstown district. That was, of course, directly opposed to the decision of the Irish Local Government Board, which had notified in a formal letter published in the papers that Mr. Cullen was inadmissible as a dispensary officer for that district, although he was eligible for any other Poor-law appointment. In accordance with the direction of the Board that a new election must be held, the guardians later that day received applications from five candidates for the post legally vacant. The applicants included Mr. Cullen, and he was re-elected by a majority of 35 to 3. It seems impossible to say positively what may be the outcome of this unfortunate conflict between the Local Government Board for Ireland and the guardians of the North Dublin Union, but the matter must be settled very soon. The guardians complain that the Board were discourteous in omitting to lay before them the evidence received at the inquiry and the reasons which led the Board to require the resignation of the guardians' medical officer in whom they always had, and still continue to have, confidence. The Local Government Board cannot, however, be expected to alter the decision at which they arrived so many months ago and which they have since upheld by expensive legal proceedings.

Death of Mr. Bellew Kelly of Drogheda.

Mr. Bellew Kelly, J.P., whose death took place on Feb. 28th after a short illness, was one of the best known, most popular, and most highly esteemed of provincial practitioners in Ireland. He was a Fellow of the Royal College of Surgeons in Ireland for more than a quarter of a century and was looked upon as a trustworthy consultant in the county of Louth for many years. He formerly filled the office of high sheriff there, was a vice-president of the Irish Medical Association, and held many local appointments which are now rendered vacant by his death.

Presentation to Mr. Frederic W. Kidd, M.D. R.U.I.

A committee representing the staff, students, and nurses of the Coombe Lying-in Hospital who wished to mark the occasion of the termination of Dr. Frederic W. Kidd's period of office as master of the institution by some token of their esteem, waited on him at his residence on March 1st and presented him with a valuable watch.

The Health of Belfast.

At a meeting of the Statistical and Social Inquiry Society of Ireland, held in Dublin on Feb. 22nd, a paper was read by Councillor H. O'Neill, M.D. R.U.I., on the Progress of Sanitary science in Belfast. In returning the thanks of the society to Dr. O'Neill for his lecture the Registrar-General for Ireland (Mr. Matheson) gave some statistics in order to put before the society exactly the state of things in Belfast with regard to its death-rate and the public health. From the returns issued in his department it appeared that during last year there were registered as having occurred in Belfast 42 deaths from measles, 14 from scarlet fever, 2 from typhus fever, 145 from whooping-cough, 54 from diphtheria, 8 from simple continued and ill-defined fever, 261 from enteric fever, 241 from diarrhœa and dysentery, 1115 from phthisis, 1784 from diseases of the respiratory system, and 163 from various other maladies. In this list he directed special attention to three features, the first of which was the large number of deaths from enteric fever, which were 261 in 1900, 263 in 1899, 640 in 1898, 354 in 1897, 136 in 1896, 188 in 1895. 145 in 1894, 122 in 1893, 108 in 1892, and 151 in 1891. In other words, for the past 10 years the average deaths from enteric fever in Belfast had been 236, and these deaths were not in one locality but were scattered all over the city. The mortality from this disease was very serious in Dublin, but it was worse in Belfast for while the average was 154 for the 10 years in Dublin it was 236 in Belfast. The circumstances of the two cities were very different. In Dublin they had an old city with a legacy of very old houses and the soil polluted with the accumulation of filth for years and years. Belfast, on the contrary, was a comparatively new city and a good deal of it had been built within a period during which the requirements of sanitary science were pretty well known. Being curious to see in what class of houses enteric fever was found in Belfast the Registrar-General extracted from the records of his department the addresses of the persons who died from enteric fever in 1900, and he found that about a third of the cases occurred in houses which did not appear in the Belfast Directory of 1892 and which presumably had been built since that time. He would like to know more about the sanitary regulations introduced in the year 1892, what their nature was with regard to the sewerage of new houses since that date, and also what steps had been taken with regard to the sewerage generally in Belfast, seeing that this terrible disease existed all over the city, and that a large number of the cases must have been in houses comparatively recently built. The second serious feature in the mortality returns of Belfast was that the number of deaths from diphtheria amounted in 1900 to 54, and that 17 of these deaths, according to his returns, occurred in No. 12 district which in 1891 had a population of 23,000. He found that eight of these 17 occurred in houses which did not appear in the Belfast Directory of 1892 and which, he presumed, were houses erected since that date. The disease being connected with imperfect sewerage, how did it come about that so large a number of deaths were found in this particular quarter? The third feature in the death returns in Belfast was the 1115 deaths from that terrible disease phthisis. So far as his department was concerned the Registrar-General said that they would give the Corporation of Belfast every assistance to make their city a model one as regarded its public health. It need

hardly be added that this sweeping condemnation of the sanitary condition of Belfast, coming from an official like the Registrar-General of Ireland, has aroused a great deal of interest in that city and demands the utmost attention. At the meeting of the City Council held on March 1st the chairman of the Public Health Committee (Alderman J. Graham, M.D. R.U.I.), referred to the statement recently made by the Irish Registrar-General. He said that the department over which that gentleman presided was the most stupid of all the departments in Dublin Castle. When they estimated the population of Belfast in 1891 they under-estimated it by about 21,000, while they over-estimated the population of Dublin by 9000, and that made a serious difference when the respective death-rates were taken into account. Before making statements as he had done the Registrar-General should have made adequate inquiries in reference to the causes of enteric fever in Belfast. In his opinion there were other causes of enteric fever in Belfast than in the insanitary condition of the houses. There was the water-supply. With a pure water-supply Belfast would be one of the healthiest cities in the kingdom. Dr. Graham said he would like to tell the Registrar-General that in 1895 their death-rate in Belfast was 24·3 per 1000, and they had now reduced that to 21, while in Dublin the death-rate in 1895 was 30 per 1000, and at the present time it was 30·3. It did seem extraordinary that a gentleman in the position of the Registrar-General should make such charges against a city of which he prides himself that he was not an inhabitant, and he thought he had been very ill-advised in his attack on the health of Belfast. An animated discussion followed in the council after these remarks of the chairman of the Public Health Committee, some of the councillors defending the water commissioners, while others, as for instance Dr. J. D. Williamson, blamed the erection of houses on filthy and polluted "made" soil as the great cause of the prevalence of enteric fever in Belfast. Even at the present time, despite all the rules existing in reference to these so-called "dumped" grounds, it is stated that houses continue to be erected in situations where the soil is certainly not the virgin one.

The Royal University of Ireland.

At a meeting of the council of the Royal University Graduates' Association held on March 1st in reference to the proposed Commission of inquiry into the working of the Royal University of Ireland resolutions were passed requesting that such a Commission, if appointed, should be constituted after the manner of the Gresham or London University Commission which, in addition to its president, Earl Cowper, was composed of five eminent scientific, five literary, and two legal members. It was also urged that no person who had committed himself to any particular policy on the Irish University question or who is connected with any of the institutions likely to be dealt with by the inquiry should be appointed on the Commission. Further, the council condemned "the false and mischievous statements made by persons in official position in connexion with the Royal University of Ireland tending to lower the character of its degrees, which, notwithstanding admitted defects in the constitution of the examining board, are recognised by those who understand university affairs as not surpassed by those of any other university in the kingdom."

Belfast Maternity Hospital.

At the annual meeting of the supporters of this charity, held on Feb. 26th, the report which was presented showed that during the past year 282 patients had been treated in the wards with only one death and that in the extern department 204 poor patients had been attended in their own homes. The total receipts during the year had been £788 11*s.* 2*d.*, while the expenditure had been £713 9*s.* 3*d.* The capital account had been drawn upon to some extent.

March 5th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Responsibility of Medical Men for Certificates delivered by themselves.

DOCUMENTS written by medical men under the name of medical certificates which they hand over to their patients who are desirous of giving evidence as to the state of their health before courts of law or other authorities are very often given without due consideration. Too often the patient looks upon a certificate as something which the medical man cannot refuse, and the latter in his turn acts wrongly in acceding to the patient's wishes in the same spirit. The result is lamentable weakening of the trust reposed in these certificates, which have the name of *certificats de complaisance*, and nearly all the courts now insist upon a sworn expert examining them with a view to checking the statements therein contained. A certain number of trials which have lately taken place show that these certificates have their risks for the medical man whose responsibility is at stake. Some time ago a pharmaceutical chemist was convicted of assault by cutting and wounding a lady named R——. She produced a certificate signed by Dr. D——, and at the same time brought two witnesses of the assault. Later the pharmacist was able to furnish proofs that the whole case had been got up to injure him and that the two witnesses had been bribed by the woman. All three were sentenced to three years' imprisonment. The pharmacist next brought an action against Dr. D—— for having furnished a false certificate. As a matter of fact, all that he had done was to write down the patient's statement without taking the trouble to verify it. He was sentenced to pay a fine of 500 francs, the court, while censuring his imprudence, throwing no doubts upon his good faith. The judgment declared that although from the point of view of treatment or for prescribing the medical man may put faith in the statements of the patient, yet he must not certify as an actual fact and as verified by a personal examination the existence of an injury which he has not himself verified, and Dr. D——'s imprudence was all the more culpable inasmuch as he knew that his certificates were intended to furnish grounds for an action at law against another. A somewhat similar case has just been before the courts at Caen. A person named D——, to avoid payment of a debt, succeeded in making out that his creditor was a lunatic and in getting her placed in an asylum on the strength of a certificate furnished by Dr. C—— alleging that she was out of her mind. After eight days she was set at liberty since the asylum physicians could find no sign of madness about her. She accordingly claimed damages from M. D—— and from Dr. C——, the latter of whom was sentenced to pay 2000 francs damages. The court, in giving judgment, was of opinion that Dr. C—— had acted imprudently, carelessly, and in a profoundly mistaken manner; that although he had acted in good faith he was wrong in placing blind confidence in the obviously interested statements of D—— and his wife who represented the alleged lunatic as dangerous both to themselves and to the community; that he had not ascertained or determined upon any obvious manifestation of acute mania such as was attributed, without, however, any details being given, in his certificate referring to the alleged lunatic; that this was the more inexcusable inasmuch as he himself had known the alleged lunatic for a long time and was well aware that she had never shown the least sign of mental instability; and that he had formed his opinion simply upon the statements of the D——s, both husband and wife, without submitting the alleged lunatic to any examination or observation whatever and without any attempt to get at either the truth or the importance of the facts laid before him. Again, only last year a medical man was prosecuted for having given a certificate to one of his patients setting forth that the said patient was unfit for military service, and that without ever having been to see the patient who was in perfect health. As a rule medical men give these certificates owing to having too great regard for the feelings of their patients whom they do not wish to offend, but the various trials mentioned above must show them that by so doing they render themselves liable for much responsibility.

Hæmorrhage during Appendicitis.

At the meeting of the Academy of Medicine held on Feb. 19th M. Lucas-Championnière said that in his opinion the hæmatemeses which had been observed during an attack of appendicitis were comparable to the "black vomit" which had been noticed after certain abdominal operations. While allowing their extreme gravity he thought that they were sometimes curable, and mentioned that he had occasionally been able to put an end to them by washing out the stomach with an alkaline solution. He considered that the observations of M. Dieulafoy[1] pointed to the increasing frequency

[1] THE LANCET, March 2nd, 1901, p. 669.

of appendicitis, and that, too, under a graver form than previously. If in former times appendicitis had been as frequent as now the fact would surely have been noted by observers. These remarks applied equally to the appendicitis of pregnant women, of which disease M. Pinard had reported three cases as occurring in one month, although he himself had seen but one case in the 10 years during which he had practised obstetrics. Appendicitis, if not absolutely new, is at all events a different complaint from the typhlitis and perityphlitis of former days. As regards this point M. Lucas-Championnière stated that he was one of the first to advocate free and early opening of abscesses of the iliac fossa. From 1882 to 1898 he had operated on 34 such cases, while in 1899 and 1900—i.e., in two years—he had operated upon 19. If this proportion had existed during the former period the number would have been 152. Nowadays appendices are removed as a preventive measure and therefore iliac abscesses should become more rare. The increased frequency of appendicitis is due to the increase of the causes of intestinal infection, and he had been struck by the fact that appendicular affections were most common in meat-eating countries, such as the United States and England. The unmerited discredit into which purgatives have fallen also tends to cause intestinal infections. In the old days children were well purged at every change of season—a wise precaution which has fallen into desuetude. Purgation is the best way to fight against intestinal infection and this treatment could not be too strongly recommended provided that at the same time a strict dietary was enforced. In this way a large number of cases of appendicitis might be prevented from occurring. The discussion was continued on Feb. 26th, when M. Guyon gave an account of three cases of hæmatemesis due to urinary infection. He argued that these cases were a confirmation of the infectious origin of appendicular hæmatemesis. M. Dieulafoy said that he thought it likely that such conditions as were wont to be called intestinal occlusion, colic, volvulus, and abscess in the iliac fossa were entirely due to an unrecognised appendicitis, for laparotomy was then by no means common. M. Dieulafoy did not dare, as did M. Lucas-Championnière, to prescribe washing out the stomach in the cases of appendicular "black vomit." He considered that rest was necessary so that clots might form. He quite agreed with M. Lucas-Championnière that once a diagnosis was made operation was necessary. M. Lucas-Championnière said that despite everything appendicitis was increasing in frequency. All his cures had been obtained after washing out the stomach, for the removal of clots and the alkaline fluid diminished acidity and gave rest to the organ. M. Pinard hardly thought that appendicitis was really increasing, but in obstetric practice the peritonitis of pregnancy and that due to rupture of adhesions were now referred to their true cause—namely, appendicitis. M. Kelsch declared that he regarded appendicitis as a malady at first generalised, but which ended by giving rise to local manifestations. On this theory it was possible to compare the appendicitis of dysentery, of cholera, of influenza, and of cerebro-spinal meningitis, and to recognise that as these affections were either endemic or epidemic, so appendicitis might appear at certain epochs, might increase in frequency, or might disappear.

March 6th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Bacteriology of Acute Rheumatic Arthritis.

IT is very probable that in many cases of acute rheumatic arthritis the tonsil has been the channel of infection. In a paper read before the Verein für Innere Medicin and published in the *Deutsche Medicinische Wochenschrift* Dr. Meyer, assistant in the clinic of Professor A. von Leyden, announces that he has discovered a microbe which he suggests is of importance in connexion with the etiology of rheumatic arthritis. This organism was present in the tonsils of five patients suffering from rheumatic arthritis and when injected into rabbits caused symptoms very similar to that disease. It is described as a rather small diplococcus which usually forms chains. It is easily stained by anilin colours, but only to a slight extent by Gram's method. It does not grow well on any of the usual culture media, except on blood-agar. In growing it forms single soft droplets, which under the microscope show yellowish granular colonies with a somewhat darker centre. The cultures after a short time lose their virulence. When eight cubic centimetres of the culture were injected under the skin of rabbits much infiltration generally ensued, leading to necrosis of the skin but never to suppuration. After from six to 10 days one of the joints usually became swollen in consequence of serous or sero-purulent exudation containing no bacteria. The exudation disappeared after a week, but as a rule other joints were subsequently involved. The temperature of the animals rose to 40° or 41° C.; they, however, in most cases did not die. At the necropsy inflammation of the serous membranes was found as in the acute rheumatic arthritis of the human subject. Pericarditis was found in eight instances, peritonitis in three, and pleurisy in one. The results of the bacteriological examination of the fluid were negative. In seven instances endocarditis was present, partly in the warty and partly in the ulcerative form. In these seven cases the above-described organisms were met with twice in pure culture, and subcutaneous injections in rabbits again gave rise to articular exudation. In five instances the cultures remained sterile. Dr. Meyer concluded from his researches that these organisms producing specific effects on animals were characteristic of acute rheumatic arthritis because they were present only in the tonsils of patients suffering from that disease, and were never found in tonsillitis associated with other diseases, such as scarlet fever, septicæmia, influenza, &c. It is, however, doubtful whether the microbe is really the cause of the disease.

The late Professor von Pettenkofer.

The funeral of Professor von Pettenkofer, whose death has been already announced in THE LANCET,[1] took place on Feb. 12th. There was an enormous attendance, including every class of the population of Munich, where the deceased was one of the most popular citizens. In the cemetery appropriate addresses were delivered by the mayor of Munich on behalf of the city and by Professor von Ziemssen on behalf of the university. At the necropsy chronic meningitis of the dura mater and sclerosis of the cerebral arteries were found; there was also a chronic inflammation of the right knee-joint which had caused deformity and much pain and had contributed a good deal to the mental depression from which the deceased had suffered.

Vomiting induced by Chloroform Inhalation.

Vomiting is one of the most undesirable complications of chloroform anæsthesia. According to a recent article by Dr. Lewin this symptom is caused by direct irritation of the stomach by the chloroform and not, as in the case of some other toxic substances, by an irritation of the brain. In the first stage of the anæsthesia, when the lungs are filled with chloroform vapour, the patient executes the movements of swallowing and the chloroform is brought into contact with the mucous membrane of the stomach. It then depends on the degree of irritability of the gastric nerves whether vomiting takes place or not. The vomiting which occurs after the end of the anæsthesia and often continues for several hours is caused by chloroform which has passed into the circulation and is eliminated through the gastric glands. There has not hitherto been any certain means of guarding against this complication. The principal precaution is, of course, for the patient not to take food for a certain time previous to the induction of the anæsthesia so that the stomach may be empty; but everybody knows that vomiting cannot be absolutely prevented in this way, for even in surgical clinics and hospitals where the patients are under strict observation vomiting is very frequent during, or after, anæsthesia. Dr. Lewin's views of the causation of vomiting during chloroform anæsthesia have led him to suggest that the sensibility of the nerves of the stomach may be reduced by means of a local anæsthetic and that its mucous membrane may be covered with a substance which will to some extent protect it from the chloroform. He recommends the administration of cocaine in a small dose (one decigramme) dissolved in sufficient water to flow over the whole of the mucous membrane. For the mechanical protection of the stomach against the action of chloroform he recommends mucilaginous substances which from their adhesive power tend to remain a somewhat long time in the stomach. The most suitable substances are one part of gum arabic dissolved in two parts of water, carrageen moss, and tragacanth. It is desirable that the patients should

[1] THE LANCET, Feb. 16th (p. 490) and 23rd (p. 589), 1901.

take a dose of this from three to four hours previous to, and another dose immediately before, the operation.

March 4th.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

The Imperial Medical Society.

THE Imperial Medical Society, which was founded by the medical officers of the allied armies in 1855, celebrated its forty-sixth anniversary on Feb. 15th. It is on this day that the election of officers takes place. The officers for the session 1901–1902 are as follows: President, Dr. Mordtmann, representative of the German Empire on the International Sanitary Council; vice-presidents, Dr. Stepochief (the chief physician of the Russian Hospital) and Dr. Noulis. The outgoing secretaries were re-elected. The following honorary members were elected: (1) Dr. Caramitza, professor of pathology in the medical school of Athens, who celebrated the twenty-fifth anniversary of his professorship in that university in February; (2) Dr. Walter Wyman, supervising surgeon-general of the United States Marine Hospital Service; and (3) Professor Heubner of Berlin. At the conclusion of the elections the members of the society dined together and the new President proposed the health of the Sultan. It is greatly to be desired that the statements made in the President's speech should come to the knowledge of the Sultan, as something might then be done to place the society in a more satisfactory position. The Turkish Government seems to forget that the Imperial Medical Society is the oldest scientific association in Turkey and is entitled to the credit of initiating all the sanitary improvements which have been made in the country.

Public Health in Constantinople.

The prevailing disease here since the beginning of the winter has been influenza, which, however, has been of a mild character. Many of those who are attacked think it unnecessary to have medical attendance and prefer to treat themselves with domestic remedies. A lady who suffered from influenza and was following this system met with a sad accident a few weeks ago. While applying to her chest an alcoholic solution of camphor she thoughtlessly went too near a stove, the alcohol caught fire, and she was so severely burned that she died in two days. In addition to the influenza there have also been some cases of measles and diphtheria.

Plague.

A girl, aged five months, who had been taken on board at Alexandria died on the steamer *Apollo* a few hours before the arrival of the vessel at Rhodes on Feb. 13th. The medical officer of the sanitary service at Rhodes having found enlarged glands in the child's right groin and armpit, the passengers and crew and the inhabitants of Rhodes who had been in communication with them were at once placed under medical observation and the vessel was sent to the lazaretto at Clazomenes for disinfection and for the making of a microscopical examination of the child's enlarged glands.

The International Sanitary Council.

Some progress has been made towards the adjustment of the difficulties which have arisen in connexion with the appointment of the inspector-adjoint of the International Sanitary Council. As I have already mentioned,[1] the Turkish delegates on the council, according to the international stipulations, must not exceed eight in number and two of these must be medical men professing the Christian religion. After the death of Dr. Vitalis, the late inspector-adjoint, the Turkish Government appointed two delegates, one who had been a custom-house official and one who was a medical man, so that the number of Turkish delegates was raised to nine, and the foreign Governments protested. The Turkish Government have found a way out of the difficulty by promoting Lutfi Bey, one of the Turkish delegates and a medical man, to the rank of pasha and general, and he will accordingly leave the sanitary service and take his place among the medical officers of the army. The appointment of the new inspector-adjoint still has to be made. He must be a medical man professing the Christian religion, must have been engaged in the sanitary service, and must have travelled in Turkey so as to possess an acquaintance with the sanitary condition of the country.

March 1st.

[1] THE LANCET, Dec. 22nd, 1900, p. 1846.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The Infection of Contagious Diseases in Clothing.

THE health officer of the Port of New York, Dr. A. H. Doty, in a paper read at the late meeting of the American Public Health Association, took the ground that infectious diseases were rarely communicated by the clothing of persons. In a recent letter he replied to criticisms of his opinion as follows:—"What I presented was not a theoretical conclusion but a plain statement of facts which have come under my observation during a continued experience of 20 years with infectious diseases, both in connexion with this department and the New York City Board of Health. I am well aware that what I have said is antagonistic to the views held by many physicians, nevertheless it is the result of careful, practical observation, and such observation must receive the most careful consideration in making rules and regulations for the protection of the public health. Some of the most careful observers, both in this country and abroad, are in accord with the views which I have presented. As a matter of fact, these views are apparently endorsed by the medical profession, both in private practice and in matters relating to public health, inasmuch as physicians daily visit infectious diseases and go from them directly to other patients without disinfection or change of clothing. Moreover, health departments throughout the country permit their inspectors and diagnosticians to visit infectious disease in the same manner. For instance, in families where scarlet fever exists the adult members, who are actively employed outside, are allowed to continue their business without interruption. Of course, they are usually admonished not to enter the apartment of the sick when at home. In a large percentage of cases the patient roams about the house or apartment at will. Therefore, if the clothing worn by well persons was a medium of infection to the extent which is commonly believed, we would certainly and surely have indisputable evidence of it, which we do not. If such were the case physicians and health department officials would be continually aiding and abetting the propagation of disease in the most serious and pronounced way, inasmuch as they go directly from one patient to another, sometimes within the interval of only a few moments. I have distinctly stated in my paper that infectious diseases may in some cases be transmitted through the medium of the clothing of well persons. This statement gives no licence to ignore reasonable precautions which may be deemed necessary to prevent the transmission of infection in this manner. I believe this answers the point raised by the committee in regard to small-pox quarantine. As a matter of fact, the small-pox patient should in no case remain with the family; and either the patient or the remainder of the family should be removed from the immediate premises. Therefore, no excuse would exist for persons, aside from the nurse and physician, visiting or being in contact with the patient, which would be done at a personal risk. My object has been to show that infectious diseases are not commonly transmitted in the clothing usually worn by well persons, and we must not give this undue consideration in making rules and regulations for the protection of the public health. While this does not release us from every reasonable effort to prevent danger from this source it teaches us that we must also look elsewhere for the origin of outbreak of infectious disease. It is an easy means of satisfying ourselves and the public to assume that outbreaks of small-pox, scarlet fever, &c., have their origin in infected clothing worn by well persons, whereas in many of these instances the appearance of the disease is unquestionably due to mild ambulant or convalescent cases in our midst unrecognised. If we are satisfied that the clothing of well persons is in some way responsible for the outbreak, then we are apt to make no further investigation, which I believe to be decidedly wrong. Bacteriological research goes far towards confirming what I have already said regarding this matter and we know that pathogenic organs are exceedingly short-lived in the presence of air and sunlight. Experience in the New York City Board of Health for 15 years before assuming this office, both in the

capacity of diagnostician and the Chief of the Bureau of Infectious Diseases, has given me an opportunity for the study of this subject which comes to very few. We cannot preach one thing and act another. If it is true that the clothing of well persons acts as a medium of infection, then both physicians and health departments are committing a serious error in the manner in which they visit their cases. On the other hand, if the clothes actually worn by the well persons only in rare instances act as a medium of infection, as I believe, then the attitude of physicians and health departments in regard to their inspection of these cases is proper."

Defining the Term "Practice of Medicine."

The New York County Medical Society is endeavouring to secure the passage of an Act by the Legislature which shall so define the term "practice of medicine" as to include and render easy the punishment of all exponents of false and fraudulent systems of medical treatment. It provides that "Any person shall be regarded as practising medicine within the meaning of this Act, who shall prescribe, recommend, direct, or advise for the use of any other person, any remedy or agent whatsoever, whether with or without the use of any medicine, drug, or instrument, or other appliance for the treatment, relief, or cure of any wound, fracture, or bodily injury, infirmity, mental or physical, or other defect or disease." A few exceptions follow such as the administration of domestic remedies by one member of a family to another and the treatment of their men by army and navy officers. It is alleged in opposition that the Bill, as it stands, would prevent one from advising a friend to invest in a box of cough drops and would render it illegal for the manfacturers of proprietary medicines to advertise in the usual way, for an optician or truss-maker to serve customers not provided with a physician's prescription; or for a shoemaker to take into account a patron's corns in providing him with boots. The pharmacists are opposing the Bill on the ground that it would prevent the advertising of medicines, the printing of directions on bottles by the manufacturers of the medicines, and the recommendation of any such medicines by druggists.

Exemption of Hospitals from Liability.

Suits against hospitals for damages are becoming so frequent that the institutions are seeking legislative relief. A Bill at present before the New York Legislature provides that no hospital incorporated under the law of the State, sustained in whole or in part by charitable contributions or endowments, shall be liable for the neglect, carelessness, want of skill, or for the malicious acts of its officers, agents, or employés in the management of or in the care or treatment of any of the patients or inmates of such hospital. It shall not be lawful for any such hospital to make or to enter into any agreement whereby liability shall be incurred for such neglect, want of skill, or malicious acts, and any such agreement shall be void. Nothing in the Bill shall be so construed as to impair any remedy under existing laws which any persons may have against any officer, agent, or employé for any wrongful act or omission in the course of his official conduct or employment.

Stimulating Effect of Lofty Altitudes with Accompanying Exercise.

It is reported that at the suggestion of the director of the biological laboratory of the University of New Mexico, the late Dr. Maltby undertook a study of the blood of persons in the plateau region, and this work, interrupted by his death, has been prosecuted with vigour by Professor Weinziri, who has collected a large amount of data. It is found that the blood corpuscles are greatly increased in number when a person from a low altitude reaches a higher one, but this effect, with the powerful stimulus involved, is only transitory, and the curve representing the blood corpuscles soon grows less, and finally returns to the level of the starting point. Observations have shown that while persons who have long resided in New Mexico have no more blood corpuscles than those residing in lower regions, these same persons may renew or repeat the original effect of altitude by a short residence at the seashore or elsewhere. What amounts to the same thing is that one residing at an altitude of 4000 or 5000 feet may secure all the powerful stimulating effect of the altitude on the blood by periodical visits to the altitude of Santa Fé or Magdalena, 3000 feet higher. In these cases the effect is greatly increased by out-door life and exercise because there is an intimate relation between the activity of the lungs and the blood stimulation. At the same time, it was found that rabbits kept in confinement would show the same increase on being carried from Albuquerque to Camp Whitcomb.

Feb. 18th.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen passed the second examination of the board at the quarterly meeting of the examiners in the subjects indicated:—

Anatomy and Physiology.—John Aylen, St. George's Hospital; Ernest Charles Edward Barnes and Charles Harold Berry, University College, London; Tom Bates and John Arthur Bell, St. Bartholomew's Hospital; John Foster Beale, B.A. Cantab., Cambridge University and London Hospital; Hugh Wood Bethell, Cambridge University and Guy's Hospital; Bartram Raleigh Bickford, Charing Cross Hospital; Gerald Arthur Bradshaw, St. Mary's Hospital; Frederick William Broderick, Mason University College, Birmingham; James Bromley and Claude Marriott Lovell Cowper, Guy's Hospital; Stephen Estridge Crawford, St. Bartholomew's Hospital; Harry William Beresford Danaher, London Hospital; Norman Edwin Dunkerton, King's College, London; William James Edgar, St. Thomas's Hospital; Armin Gascoigne Vavasour Elder, St. George's Hospital; William Henry Elwood, Queen's College, Belfast; Charles Ashley Flintoff, Charing Cross Hospital; Christian Ernest Paul Groth, London Hospital and Cambridge University; Sydney Herbert Gibson, B.A. Cantab., and Thomas Barker Amyand Haggar, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Vahan Hagopos James Giragosian, Horace Bryden Hill, and Richard Holtby, St. Bartholomew's Hospital; James Clark Hall, St. George's Hospital; Cuthbert Murray Halsall, University College, Liverpool; Thomas Brooke Hickley, Westminster Hospital; Nelson Wood Hill, London Hospital; Eardley Lancelot Holland, King's College, London; Mark Oliver Hunter, B.A. Cantab., Cambridge University and St. George's Hospital; Henry Johnson, Guy's Hospital; Graham Charles Lawson, Cambridge University and St. Thomas's Hospital; William Kingdon Legassick, University College, London; Thomas Clarkson Maxwell, King's College, London; Reginald Henry Miller, St. Mary's Hospital Robert Vernon Giraud Monckton, St. Bartholomew's Hospital; Herbert Edward Morris, Guy's Hospital and Cooke's School of Anatomy and Physiology; Basil Newman Murphy, University College, Liverpool; Krishna Moreshwar Pardhy, L.M. and S. Bombay, Grant Medical College, Bombay; Christopher Parker, Westminster Hospital; Arthur Robert Phelps, Cambridge University and St. Thomas's Hospital; William Frederic Pierce, Owens College, Manchester; Carl Henry Reinhold, Guy's Hospital; Vyvyan Kendall Sadler, University College, London; Arthur Philip Salt, St. Bartholomew's Hospital; Eric Slack, B.A. Cantab., Cambridge University and Middlesex Hospital; Douglas Montague Brooking Snell, St. Thomas's Hospital and Durham University; William Arthur Tatchell and Henry Blanchard Walters, London Hospital; Frederick Herbert Wallace and Hugh Watts, Guy's Hospital; Vernon Northwood Whitamore, Charing Cross Hospital; and Ralph Kuper White, St. Mary's Hospital.

Anatomy only.—Andreas Nell, L.M. and S. Ceylon, Colombo Medical College, Ceylon, and University College, London, and Clifford Greville Simms, Middlesex Hospital and Cooke's School of Anatomy and Physiology.

Physiology only.—James John Anning, Yorkshire College, Leeds, and Rowland Wilbraham Hill, Owens College, Manchester.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen passed the Preliminary Science Examination for the Licence in Dental Surgery at the quarterly meeting of the examiners:—

John Joseph Armitage, North Polytechnic Institute, Holloway Francis William Bartle, City of London College; Tom Treherne Barton, Charing Cross Hospital; Horace Stanley Chandler and Horace Croot, Guy's Hospital; Alfred Braithwaite Charlick, School of Science, Technology, and Art, Liverpool; William Alexander Clements, Municipal Technical School, Manchester; R. Wilfrid Cross, Holt School of Science, Birkenhead; Gerald Lang Dymott, Birkbeck Literary and Scientific Institute; Archibald Roland Durant, Edward Farrant, Archibald Louis George, and Albert Goodey, Guy's Hospital; Arthur Barber Hawkes and Alfred John Higson, Charing Cross Hospital; William Hopton and Alfred Henry Mace, Owens College, Manchester; Harold Whightman Jones, Guy's Hospital; Bannar Harry Martin and Rupert Josiah Messent, Municipal Technical School, Brighton; Percy Norman Owen, Mason University College, Birmingham; Charles Lucey Palmer, Reading College, Charles Cook Pooley, Higher Grade Board School, Norwich; Frank Ernest Probyn and Percy Hartley Rodgers, Charing Cross Hospital; Leonard Urban Ransford Norman Bowden Soper, William Stuart Stevens, and Thomas Vernon, Guy's Hospital; Ernest Le Masurier Spurgin, Municipal Technical School, Brighton; Attilio Regolo Setacci, Polytechnic Institute, Regent-street, and Joseph Hindle Westmorland, Owens College, Manchester.

The following gentlemen having passed the necessary examinations have been admitted by the two Royal Colleges Diplomates in Public Health:—

Thomas Gibson, M.D., C.M. Edin., Edinburgh University and King's College, London; Thomas Halliwell, L.R.C.P. Lond., M.R.C.S. Eng.,

Guy's Hospital; Hugh Campbell Highet, M.D., C.M. Glasg., Glasgow University; Thomas Battersby Jobson, M.D. Dublin, Trinity College, Dublin, and St. Bartholomew's Hospital; Peter Narrainasawmi Lakshmanan, L.R.C.P. Lond., M.R.C.S. Eng., M.B., C.M., Madras, Madras University and King's College, London; Charles Gordon Moffit, L.R.C.P. Lond., M.R.C.S. Eng., University College, London; Claude Rundle, M.B.Lond., L.R.C.P. Lond., M.R.C.S.Eng., St. Mary's Hospital and King's College, London; and Arthur Herbert Spicer, M.B., B.S. Lond., L.R.C.P. Lond., M.R.C.S. Eng., Guy's Hospital.

UNIVERSITY OF CAMBRIDGE.—At the congregation held on Feb. 28th the following degrees were conferred:—

M.B.—C. J. Coleman, Trinity.
M.B. and B.C.—W. H. W. Attlee, St. John's; and F. E. Brunner, Caius.

THE LATE MR. J. P. BEVAN.—Mr. John Paul Bevan died suddenly from an apoplectic seizure at his residence, North-place, Cheltenham, on Feb. 25th, in his fifty-third year. Mr. Bevan was the son of a Nonconformist minister and was born at Oakham, Rutlandshire. He received his medical education at Guy's Hospital and became qualified as M.R.C.S. Eng in 1873 and L.R.C.P. Lond. in 1874. Mr. Bevan then commenced practice in Cheltenham and in 1874 he was appointed medical officer for the No. 1 district of the Cheltenham Union—a post he held till the time of his death. He was also for several years public vaccinator and surgeon to the Cheltenham Dispensary.

LITERARY INTELLIGENCE. — M. G. Steinheil medical and scientific publisher, 2, rue Casimir-Delavigne, Paris, asks us to state that original subscribers (i.e., since the year 1878) to Professor Tarnier's "Traité d'Accouchements" may now obtain from their booksellers the newly-published fourth and last volume. Subscribers who paid their subscriptions to the publisher direct are requested to inform him how the fourth volume is to be sent to them. If forwarded by post it will be registered, unless otherwise specially directed, the cost of postage and registration being 1 franc 60 centimes, to be paid in advance. The contents of the four volumes are as follows: 1. Grossesse et Accouchement Physiologiques; 952 pages, 285 illustrations. 2. Pathologie de la Grossesse; 586 pages, 66 illustrations. 3. Dystocie Maternelle; 771 pages, 168 illustrations. 4 Dystocie Fœtale; Opérations; 734 pages, 250 illustrations.

ROYAL FREE HOSPITAL. — The Marquis of Northampton presided on Feb. 27th at the seventy-third annual court of the governors of the Royal Free Hospital, Gray's Inn-road. The annual report stated that the total number of patients who had been treated during the year was 36,560, the majority of these patients coming from the neighbourhood in which the hospital is situated, one of the most crowded and poorest in the metropolis. The chairman, in moving the adoption of the report, referred to the loss which the charity in common with many others had sustained in the death of its Royal patron, Queen Victoria. With reference to the report, he expressed himself as being struck with the consecutive progress made by the hospital. The building had been greatly improved and every effort had been made to bring the hospital up to the standard of modern requirements. The total reliable income being only one-third of the necessary expenditure it behoved all present and their friends to do their utmost to lessen the harassing care of the committee who had to carry on the work. No doubt much had been given during the past year to the military funds, but surely it was clear, said the chairman, that true charity lay in giving extra when circumstances made it urgent; no charity was worth the name that did not call for self-sacrifice. Mr. Charles Burt, chairman of the weekly board, seconded the motion, and stated that the hospital began the year with a debt of £1300 and the financial position caused the board much anxiety. The hospital was most economically administered, although the work in each department was done thoroughly and efficiently. Mr. Burt announced that in May next the governors would make a new departure by appointing two qualified medical women as resident medical officers to attend women and children patients. A further resolution was passed that a petition be sent to the King humbly praying His Majesty to continue the patronage which was accorded to the hospital by Queen Victoria throughout the 64 years of her glorious reign. Among other speakers were the Earl of Stamford, Captain Jessel, M.P., Mrs. E. Garrett Anderson, M.D., Dr. S. West, and Mr. James Berry. At the close of the proceedings the governors visited the wards and the new rooms provided for the nursing staff.

COOKERY EXHIBITION.—The twelfth Universal Cookery and Food Exhibition will be held this year at the Prince's Skating Club, Knightsbridge, from June 11th to the 15th.

MEASLES NEAR BARNSTAPLE.—At the meeting of the Barnstaple Board of Guardians, held on March 1st, Mr. G. L. Thornton, the district medical officer, stated that a severe epidemic of measles had broken out in the country district, and he was allowed an assistant for a fortnight.

BRISTOL ROYAL HOSPITAL FOR CHILDREN AND WOMEN.—Earl Roberts, K.G., V.C., at the instigation of the Duchess of Beaufort (president of the bazaar committee), has promised to open, on May 1st, at the Colston Hall, the bazaar in aid of the funds of the Bristol Royal Hospital for Children and Women.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—A meeting of the Fellows will be held on Tuesday, March 19th, at 1 o'clock, to elect two members of the Council. One vacancy was caused by the death of Mr. A. H. Jacob and the other by Sir William Thomson being unable to make the requisite declaration within one month of his election. The candidates for the vacancies are Sir William Thomson and Mr. Robert H. Woods, both surgeons to the Richmond Hospital, Dublin.

CHARITY AND THE DRAMA.—Dr. Lionel A. Weatherly gave an interesting lecture on March 1st at the meeting of the Bath Literary and Philosophical Association on "Reminiscences of 30 Years of Amateur Acting." Major Simpson presided and referred to the fact that Dr. Weatherly had during his 30 years of amateur acting been instrumental in raising no less than £10 000 for various charities. Dr. Weatherly, who is well known in connexion with the amateur week in aid of the Royal United Hospital, Bath, was at the close of the lecture awarded a hearty vote of thanks.

CHARITABLE DONATIONS. — At the annual meeting of the friends of the Liverpool Country Hospital for Chronic Diseases of Children on March 4th a letter was read from a writer, whose name was not disclosed, who said: "I shall be very pleased to give a donation of £5000 to your building fund provided you can get three other donations of £5000 each, thus making up your building fund to £20,000, and that a further sum of £10,000, in any sums, be raised as a maintenance fund and invested in the names of your trustees, the interest alone to be expended." A cheque was received for £1000 from Mr. Holbrook Gaskell, and one for £500 from Mr. A. L. Jones.

PRESENTATIONS TO MEDICAL MEN. — At a numerously attended meeting on March 2nd of ambulance representatives, held at the fire station, Council House, Handsworth, Mr. James Richmond, M.B. Oxon., M.R.C.S. Eng., D.P.H., was the recipient of a "surprise pendant" gaselier as a mark of appreciation for his services to the Handsworth centre of the St. John Ambulance Association.—Mr. Harry Hutchinson, L.R.C.P. Irel., L.F.P.S. Glasg., L.S.A. Lond., of East Ham, has been presented by a few personal friends and patients in the locality with a gold-mounted dressing-bag, a set of aseptic surgical instruments, and a large silver tray.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL.—The Earl of Hardwicke presided at the annual meeting of governors and subscribers of this charity, which was held at the hospital in the Marylebone-road on Feb. 25th. Among those present were the following: Mr. F. G. Cavendish Bentinck, Rev. Henry W. Casserly, Mr. F. Herbert Davies, Captain Norcliffe Gilpin, Mr. H. A. Harben, Mr. F. W. Hunt, Mr. Richard Martin, Major W. McMahon, Mr. H. J. Royds, and Dr. Arthur F. Stabb.—Lord Hardwicke referred to the great loss which the nation had sustained by the death of Queen Victoria, and stated that Her late Majesty had been patron of the charity from the year 1850 until her death, and had been a generous subscriber to its funds. The committee had sent a letter of condolence to His Majesty the King. The report stated that 1183 in-patients and 971 out-patients had been delivered during the year, including 75 wives of soldiers, sailors, and reservists who were fighting in South

Africa (55 as in-patients and 20 as out-patients). Her late Majesty Queen Victoria had, only a few days before her death, been graciously pleased to express her gratification at the special facilities that had been arranged for receiving the soldiers' wives, and Her Majesty Queen Alexandra had also expressed her great pleasure that these arrangements had been made. The expenditure for the year had been £871 in excess of the income, and the chairman made an urgent appeal for additional support to enable the committee to meet the increased expenditure caused by the larger hospital and the increase in the number of patients and by the rise in prices of many articles of hospital consumption.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Proposed Exemption of Hospitals from Local Rates.

MR. LAWSON WALTON has introduced in the House of Commons a Bill providing for the exemption of hospitals from local rates. The place obtained for the order for its second reading is not one which offers much hope of the measure being discussed.

Hours of Labour in Shops.

The question of the hours of labour in shops is to be inquired into by a Select Committee of the House of Lords on which the Prime Minister, the Bishop of Winchester, Lord Avebury, and other peers will serve.

HOUSE OF LORDS.

THURSDAY, FEB. 28TH.

Ambulance Wagons and Hospital Tents.

Lord RIBBLESDALE called the attention of the House to the suggestions made by the South African Hospitals Commission with regard to ambulance wagons and hospital tents and asked the Government whether any steps had been taken or were contemplated for giving effect to them.—Lord RAGLAN (Under Secretary of State for War) replied that changes were in contemplation in the pattern both of the ambulance wagons and of the hospital tents, and experiments were now being made, but it was extremely difficult to find the ideal tent or the ideal wagon; and at present it was undesirable to put a stop to inquiry and experiment. The War Office was anxious to benefit by the experience of officers who had been in South Africa, some of whom were not yet home; but up to the present the following steps had been taken: In July last a new pattern ambulance was built to the specification of the Royal Army Medical Corps and was sent down to Aldershot for experiment and report. The wagon was 1cwt. lighter than the old pattern and it carried more men The old pattern carried 12 men seated or four seated and two on stretchers. The new pattern carried 14 seated or six seated and four on stretchers The War Office had obtained as much information as possible about the ambulances in use in foreign armies, especially about the Austrian ambulance, of which many favourable reports had been received. This type had been sent to Aldershot for report and would then be sent to Woolwich, where the officials would confer with officers of the Royal Army Medical Corps and of the transport department who had recently returned from South Africa. The question of tents was much complicated by the question of climate. The tortoise-tents were at first reported on very favourably from South Africa, but recent reports were not so good. It was not the ideal tent in bad weather; and another, more satisfactory, seemed to have been found. Trials of many kinds of tents were made last summer and autumn. Although there was unusual pressure at the War Office no time would be lost in remedying any defects which could be dealt with immediately.

HOUSE OF COMMONS.

THURSDAY, FEB. 28TH.

Woodstock Hospital still Being Used.

Mr. ARTHUR STANLEY asked whether Woodstock Hospital, Cape Town, was still being used for enteric fever patients, and whether, in view of the smells which were acknowledged to exist at Woodstock, any steps had been taken to find another and more suitable site in the neighbourhood of Cape Town.—Lord STANLEY replied that the hospital was still being used for enteric fever patients. Many improvements had recently been made in the hospital and the senior medical officer in charge now described everything as satisfactory. The only change contemplated was the removal of the drainage outfall.

The Small-pox Epidemic in Glasgow.

Mr. THOMAS BAYLEY asked the Lord Advocate if he would institute an inquiry into the outbreak of small-pox in Glasgow in a manner similar to that in which the Local Government Board had granted inquiries on the occasions of recent outbreaks in England; and if he would extend such inquiry into the sanitary conditions of the city and its water-supply.—The LORD ADVOCATE: I am informed by the Local Government Board for Scotland that there does not seem to them to be any reason at present for instituting an inquiry into the sanitary condition of Glasgow and its water-supply. The reference to the practice of the English Local Government Board is, I am informed by that Board, rather misleading. That Board usually send one of their medical inspectors to a district where small-pox is epidemic, in order that he may assist the local authorities with his advice and experience, but the Board have not on any recent occasion held an inquiry into an outbreak of small-pox.

FRIDAY, MARCH 1ST.

Lead and Arsenic Poisoning.

Mr. COGHILL asked the Home Secretary whether his attention had been called to the evidence given before the Arsenical Poisoning Commission as to the similarity of the symptoms of poisoning from arsenicised beer and from plumbism, and that Professor Oliver and Professor Thorpe had reported that beer was largely taken in the Staffordshire potteries as an antidote to plumbism; and whether many of the reported cases of plumbism in the last four months of 1900 were cases of arsenical poisoning.—Mr. RITCHIE: Having made inquiries into this matter I find that during the last four months of 1900 three cases reported as cases of plumbism were considered by the medical inspector of factories and workshops to be really cases of arsenical poisoning and were excluded from the returns of lead poisoning. The cases are always carefully scrutinised for mistakes in reporting, and there is no reason to think that there were any other such cases not detected.—Mr. COGHILL: Was complaint made of the beer supplied by the local brewers during these months?—Mr. RITCHIE: I have received no such complaint.

The London Water Question.

Mr. WALTER LONG, in reply to Dr. MACNAMARA, said that he had no power to require the water companies to pay the cost of the public inquiry into the proposed new regulations. He might add, he said, that if he possessed the power he should not consider that it ought to be exercised in this case.

MONDAY, MARCH 4TH.

No. 8 General Hospital.

Mr. BURDETT-COUTTS asked the Secretary of State for War whether he was aware that No. 8 General Hospital, one of the two largest hospitals at Bloemfontein, had remained on the same site for over 10 months, the ground being thoroughly infected with enteric poison in consequence of the number of enteric fever cases treated there during and since the epidemic of last year; whether, in view of the increased rate of mortality from enteric fever in South Africa, immediate inquiry would be made as to why this hospital camp, in accordance with recognised principles of sanitation, should not have been long since moved to an entirely new site; and whether he could give the number of enteric fever cases admitted to this hospital and the number of enteric fever deaths in it during each of the six months ending Jan. 31st.—Mr. BRODRICK: I am informed that this hospital has remained on the same site for 10 months, but there appears to be no reason for anxiety, as the site has been reported to be perfect and the sanitary reports up to Jan. 18th state that the general sanitary conditions were good. The figures of this hospital are as follows:—viz., August—admissions 220, deaths three; September—admissions 154, deaths none; October—admissions 26, deaths one; November—admissions 49, deaths five; December—admissions 61, deaths three; January to 25th—admissions 93, deaths 12. The admissions in January are mostly of transfers from out-stations. The type of enteric fever is reported in January as severe, many of the cases being practically hopeless from the first. If any doubt is found to exist as to the sanitary condition I will undertake that the situation shall be changed.

Civil Practitioners in South Africa.

Mr. BURDETT-COUTTS asked the Secretary of State for War if he would state with regard to the last 50 civilian surgeons and physicians engaged by the Royal Army Medical Staff Corps for employment in South Africa the length of time for which each had been legally qualified before being sent out.—Mr. BRODRICK replied: 10 were qualified in 1901, 10 in 1900, and nine in 1899; the remaining 21 have been qualified for varying periods going back as far as 1876.

TUESDAY, MARCH 5TH.

Pneumonia on Board the Britannia.

Captain PRETYMAN (Civil Lord of the Admiralty) said, in reply to questions on this subject, that it was true that two cadets and one of the instructors of the *Britannia* had recently died from complications following upon pneumonia and on Sunday last there were 16 cadets ill, two seriously. The cause of the large amount of pulmonary disease was the prevailing epidemic of influenza of a severe type. The hospital was by no means full. The cadets had been granted three weeks' leave and the ship would be thoroughly purified and disinfected while the cadets were away.

Lead-poisoning among House-painters.

Mr. COGHILL asked the Home Secretary whether his attention had been called to the death of Richard Edwards, a house painter of 33, Pinnox-street, Tunstall, caused, as a coroner's jury found, by lead-poisoning; and whether he proposed to introduce any legislation for the protection of house-painters from lead-poisoning.—Mr. RITCHIE: I have inquired into the case and find that it does not come within any Act which I have to administer, and I do not see my way to proposing any such legislation as is suggested.

Plague at the Cape.

Sir WALTER FOSTER asked the Secretary of State for the Colonies whether he could state the number of cases of plague that had occurred at Cape Town, according to his latest advices, distinguishing the number of Europeans and the number of natives attacked; whether at the time of the outbreak of the malady the authorities at Cape Town had an adequate supply of Haffkinine (prophylactic vaccine) and of Yersin's curative serum for dealing with an outbreak, and whether a supply of these materials had since been sent out; and whether he would lay upon the table any reports received from Dr. Edington or Professor Simpson on the relation of the disease in rats to that in human beings.—Mr. CHAMBERLAIN: My information is not complete, but, as stated in the telegraphic bulletins which have been supplied by the Cape Government and published, there was a total of 20 cases for the week ending Feb. 16th and 29 cases remaining under treatment at that date. On Feb. 23rd there were 21 cases remaining under treatment. So far as I am aware there has been one European case. As to the second part of the question I have no information; the matter is one for the responsible Government of the Cape Colony. As to the third part, I have not seen these reports which I understand are being prepared for the information of the Cape Government, and I am not aware that they have been published by that Government.

ROYAL COMMISSION ON ARSENICAL POISONING.

Evidence of Dr. James Niven.

THE Royal Commission on Arsenical Poisoning held another meeting on Friday, March 1st, in one of the rooms of the Westminster Palace Hotel, and examined Dr. James Niven, medical officer of health of the city of Manchester. All the members of the Commission were present and Lord KELVIN occupied the chair.

Dr. NIVEN, in reply to the CHAIRMAN, said that the evidence which he possessed as to the amount of recent exceptional sickness in Manchester attributable to poisoning by arsenic was derived from the answers to a circular sent by him to medical practitioners on Nov. 27th and from statements which had been made in reference to the public institutions of the city. Answers were received from 186 out of a total of 358 medical practitioners, from which it was inferred that not less than 1000 cases had occurred in the experience of the gentlemen who answered the circular. The number estimated by Dr. E. S. Reynolds to have been admitted to the Crumpsall Infirmary was 500. All these would be cases of persons who were at the time of their illness dwelling in the old Township of Manchester, having an estimated population in the year 1900 of 144,139. The number admitted to the Withington Workhouse Infirmary could not have been less than 200, most of whom would be Manchester residents. It was, in his opinion, safe to infer that not less than 2000 cases had been seen by medical men within the last six months. About one-half of the medical men of Manchester did not send any reply to his circular. Their failure to reply he attributed simply to pressure of work, not to any desire to keep cases secret. Many medical men had such an immense amount of work that they were run off their feet and quite tired out in the evening, and he presumed that they simply did not feel equal to sitting down and replying accurately to a document of this description There were a very large number of causes which gave rise to peripheral neuritis. The reason why one looked upon all or the great majority of these recent cases as having been due to arsenical poisoning was partly the short period within which the illness had begun. It had not been a gradually dawning illness, but an illness marked by a somewhat definite onset, and these cases had all been associated with the drinking of beer or stout. Taking these things into consideration, one regarded at all events the recent cases of peripheral neuritis as mostly due to the influence of arsenical poisoning. There had been no other cause at work that one was aware of. Indeed, the only other cause one could think of was alcoholic poisoning. There could be no doubt that many of the medical practitioners in the early stages of the outbreak looked upon these cases as cases of alcoholic poisoning, between which and cases of arsenical poisoning it was difficult to make a precise and clear distinction. A table had been prepared showing for the city of Manchester the number of deaths from peripheral neuritis, from other neuritis, from chronic alcoholism, from cirrhosis of the liver, from other diseases of the liver, and from gastritis, in each week of the past five years. This table showed that deaths from peripheral neuritis and from other neuritis had been increasing in number since 1896 and that the number of deaths from chronic alcoholism and from cirrhosis of the liver had fluctuated from one year to another but that from each of these causes of death a great increase had occurred in the year 1900. This increase was most marked in the last half of the year and in the case of peripheral neuritis was confined to it. In the last 26 weeks of the year 37 deaths were registered from this cause as against 11 in the first 26 weeks of the year. From chronic alcoholism 66 deaths were registered in the second half of the year as against 43 in the first half of the year. From cirrhosis of the liver 75 deaths were registered in the second half of the year as against 51 in the first half. That arsenical poisoning had in each instance had to do with this increase was certain; that it was responsible for the whole of it could only be determined by a study of the revenue returns, which would show whether there had been a great increase of drinking during 1899 and 1900. If this could be shown, arsenical poisoning would not be excluded, but it would not be possible to regard it as the sole cause of the increase. From an analysis he had prepared it seemed that women died from peripheral neuritis more than men and at an earlier stage. A given quantity of arsenic would have a greater effect on a woman than on a man, and no doubt the drink of women was more exclusively beer and stout than in the case of men. It was a common thing for women to meet in the afternoon and gossip over a pot of beer got from a neighbouring public-house. The exceptional sickness and death had been confined to adults—a circumstance which went far to exclude sweets, jams, bread, &c., as sources of arsenical poisoning. A number of samples of cheap sweets and jams had been examined for arsenic but had been found free from it in appreciable amount. Six samples of cheap wine had been examined but no arsenic had been found in them.

By Dr. WHITELEGGE: Have you any case of peripheral neuritis in which there was no consumption of beer at all?—I believe there is one case. The patient was 47 years of age. The early symptoms were nausea, vomiting in the morning, and pain in the hands and feet and upon pressure of the calf. The observations of the physician at the hospital were that the patient had slight difficulty in walking, dilatation of the right side of the heart, pain in the soles of the feet, excessive sweating of the hands and feet, eruptions, thickening of the skin, and peeling. This patient denied having taken beer. I know the district and street from which this patient comes, and I think it would not be well to attach an undue degree of importance to the denial. In this case the patient recovered.

Dr. NIVEN, in further examination by the CHAIRMAN, said that so far as the observations made at the union infirmaries and other public institutions went, and so far as the testimony of Manchester practitioners went, the symptoms of arsenical poisoning had been confined to persons drinking beer and stout almost exclusively of the cheaper qualities. The exceptions to this statement were trivial. A selection was made of 85 cases, presenting well-marked features, with two or three exceptions, and brief histories of the illness were obtained through Dr. Reynolds at Crumpsall, and Dr. J. S. Orchard at the Withington Workhouse. In 63 of these it was possible to trace the beers habitually used by the patients to the breweries producing them. In every instance the brewery in question had used Bostock's sugars. It had been ascertained that these sugars had been used by 12 out of the 23 Manchester breweries. In the majority of the cases beer from the same brewery, but obtained at public-houses other than those frequented by the patient, was found to contain arsenic in appreciable amount. He could not speak of his own knowledge, but he believed that a large number of cases of peripheral neuritis occurred among the employés of the breweries in Manchester. The highest amount of arsenic ascertained was about one-half grain per gallon, but all the samples examined quantitatively were taken after the sanitary committee had issued a warning to publicans by means of the daily press. 81 samples of beer had been examined by him or under his direction, and of these 27 had been found to contain arsenic. These were all taken after the announcement of the discovery of arsenical poisoning by beer. From analyses which had been published and from those which had been made for him it was evident that the large amounts of arsenic found in samples of beer taken about Nov. 20th and onwards could only have been derived from arsenical glucoses and inverts. The quantities of beer found to produce symptoms of arsenical poisoning and the period within which those symptoms were produced pointed in the same direction. The arsenious acid was introduced into the glucose in the process of conversion from starch by the use of contaminated sulphuric acid and into the invert sugar in the same way. The amounts of arsenious acid found in malt could not have produced the results which had been observed. He was strongly of opinion that there should be no arsenic present in any brewing materials and that there was no justification for its presence. In the case of malt the arsenic got in during the process of kiln-drying. It was, of course, difficult to obtain a fuel absolutely free from arsenic, but the fumes might be kept away from the grain. In any case if arsenic were deposited it ought to be removed just as it ought to be removed from hops. Dr. Niven then offered to the Commission the following suggestions, viz.:—

1. That manufacturers of foods and drinks in the preparation of which chemicals are employed should be required by law to have printed in clear characters on any order sent to the vendor of such chemicals the words "to be used in the manufacture of foods or drinks," as the case might be. The words "foods or drinks" to include materials intended for immediate consumption as well as materials (such as brewers' sugars) to be used in the preparation of foods or drinks.

2. That persons supplying chemicals to be used in the manufacture of foods or drinks should be required by law to affix conspicuously and securely to each consignment of chemicals to be used for such purpose a clear printed statement in adequate size of type that the materials supplied are "for the manufacture of foods or drinks." Such a statement should also be required to be printed on invoices of such consignments.

3. It is suggested that without such a statement conspicuously affixed to any consignment of chemicals it shall be illegal, under a penalty, to use chemicals from such consignment for the manufacture of foods or drinks.

4. As regards malt and hops and other materials used in brewing, it shall be illegal for such materials to be contaminated with arsenic.

5. It is desirable that the Food and Drugs Act should be amended so as to ensure that, in case of any deleterious contamination occurring in beer or stout, it may be possible to trace the source of the contamination, and so to ensure the destruction of the deleterious article.

By Sir WILLIAM HART DYKE, M.P.: The intention with regard to the last suggestion was that the authorities should be able to pass from the retailer to the brewer and thus to get hold of the stock of contaminated beer and have it destroyed.

By Professor THORPE: In his opinion the epidemic was now practically at an end. There was nothing to have prevented him from applying to the city analyst of Manchester for assistance in connexion with this inquiry, but he thought that in matters requiring special skill and very exact and careful investigation involving a great consumption of time it might be an advantage in large towns to have some consulting body such as an institute of public health to refer to for assistance. He was of opinion that the whole of the mischief was attributable to arsenic. The arsenic found was amply sufficient to account for all the mischief.

By Sir WILLIAM CHURCH: He had been told by brewers that even before the alarm about arsenic many people stopped drinking beer because it made them sick, and no doubt the catarrhal symptoms put off the suspicion of arsenic.

By Dr. WHITELEGGE: In the administration of the Sale of Food and Drugs Acts the analyst as a rule would look for adulterations, not for poison, and before this epidemic witness would not have expected an analyst to examine beer for arsenic. If he could prove by samples the presence of arsenic in beer at a brewery he could seize the stock and get it condemned by a justice of the peace, but he did not think he had the same power with respect to a chemical manufactory, because it would be difficult to show that the products were used for food. He was inclined to think that there was no longer any seriously contaminated beer in Manchester.

The Commission then adjourned until Wednesday, March 6th.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ADAMS, A. J. B., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Children's Homes, Barnes, Richmond, Surrey.

ADAMS, JOSEPH DIXON, M.D. St. And., M.R.C.S., L.S.A., has been reappointed Medical Officer of Health by the Yeovil Rural District Council.

ANGOVE, E. S., L.R.C.P. Edin., M.R.C.S., has been appointed District Medical Officer to Flaxton Out-relief Union, vice E. W. Mason.

BEVAN, A., L.R.C.P., M.R.C.S., has been appointed Clinical Assistant in the Electrical Department at St. Thomas's Hospital.

BIRKBECK, L. H. C., B.A., M.B., B.Ch. Oxon., has been re-appointed Clinical Assistant in the Special Department for Diseases of the Ear at St. Thomas's Hospital.

BLACK, Major JOHN GREER, M.D., M.Ch.R.U.I., R.A.M.C., has been appointed to the charge of the Station Hospital at Devonport.

BLEASE, ARTHUR TORKINGTON, L.R.C.P. Lond., M.R.C.S., has been appointed House Surgeon to the Royal Infirmary, Manchester.

BOND, THOMAS FRANCIS, M.D. Lond., M.R.C.S., F.R.S. Edin., has been re-appointed Medical Officer of Health by the Chepstow Rural District Council.

BURFIELD, T., M.A., M.B., B.C. Cantab., L.R.C.P., M.R.C.S., has been appointed House Surgeon to St. Thomas's Hospital.

COATES, C. J. A., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory Acts for the Stokenchurch District of Bucks.

COPE, R., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant House Surgeon to the York County Hospital.

CLARKE, H. H. R., L.R.C.P., M.R.C.S., has been re-appointed House Physician to St. Thomas's Hospital.

CUNNINGHAM, J. F., L.R.C.P., M.R.C.S., has been appointed Senior Ophthalmic House Surgeon to St. Thomas's Hospital.

DAVIES, BOWEN W. L., M.R.C.S., L.R.C.P., has been appointed Honorary Medical Officer to the Denbighshire Infirmary, vice T. Lloyd Roberts, resigned.

DAWSON, W. R., M.D., F.R.C.P.I., has been appointed Examiner in Mental Disease in the University of Dublin.

DEWDNEY, E. L. D., L.S.A. Lond., has been appointed District Medical Officer, Williton Union, vice J. Hardie, resigned.

DOUDNEY, G. H., M.B. Durh., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Wainfleet District of Lincolnshire.

DOUGLAS, CLAUDE, F.R.C.S., L.R.C.P., has been appointed Surgeon to the Leicester Infirmary, vice C. H. Marriott, resigned.

DUDGEON, L. S., L.R.C.P., M.R.C.S., has been re-appointed Clinical Assistant in the Electrical Department at St. Thomas's Hospital.

EDMOND, W. R., M.B., C.M. Edin., L.R.C.P. Edin., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Totnes District of Devon.

EDWARD, A. A., M.D. Edin., has been appointed Certifying Surgeon under the Factory Acts for the Borough of Rawtenstall.

EDWARDS, T. H., L.R.C.P., M.R.C.S., has been appointed House Surgeon to St Thomas's Hospital.

EGLINTON, GEORGE WALTER, L.R.C.P., L.M. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Health for the Wells (Somerset) Rural District Council, vice Joshua Charles Smyth, L.R.C.P. Lond., M.R.C.S., resigned.

GORDON, T. E., M.D. Durh., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Towyn District of Merioneth.

GRAY, E. B., M.D. Oxon., President of the Society of Medical Phonographers, has been appointed Consulting Physician to the Oxford County Asylum at Littlemore, vice the late Sir Henry Acland.

GRIMWADE, A. S., L.R.C.P., M.R.C.S., has been appointed Assistant House Surgeon to St. Thomas's Hospital.

HARRIS, H. S., L.R.C.P., M.R.C.S., has been appointed Junior Ophthalmic House Surgeon to St. Thomas's Hospital.

HAY, M. S., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon to the North Devon Infirmary, Barnstaple, vice F. Penny, resigned.

HEDLEY, E. W., M.A., M.B., B.C. Cantab., has been appointed Senior Obstetric House Physician to St. Thomas's Hospital.

HUNT, S., L.R.C.P., M.R.C.S., has been appointed Assistant House Surgeon to St. Thomas's Hospital.

LOCK, J. L., B.A., M.B., B.C. Cantab., L.R.C.P., M.R.C.S., has been appointed Assistant House Physician to St. Thomas's Hospital.

MARTIN, A. E., M.A., M.B., B.C. Cantab., L.R.C.P., M.R.C.S., has been appointed Junior Obstetric House Physician to St. Thomas's Hospital.

MARQUIS, H. A., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed District Medical Officer, North Bierley Union, vice W. A. Shillito, resigned.

MENNELL, Z., L.R.C.P., M.R.C.S., has been appointed House Physician to St. Thomas's Hospital.

MENCE, W. C. L.R.C.P., M.R.C.S., has been appointed Clinical Assistant in the Special Department for Diseases of the Skin at St. Thomas's Hospital.

NITCH, C. A. R., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed Assistant House Surgeon to St. Thomas's Hospital.

PALMER, W. M., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Linton District of Cambridgeshire.

PATERSON, T. W. S. M.A., M.B., B.C., has been re-appointed Clinical Assistant in the Special Department for Diseases of the Ear at St. Thomas's Hospital.

PATERSON, T. W. S., M.A., M.B., B.C., has been re-appointed Clinical Assistant in the Special Department for Diseases of the Throat at St. Thomas's Hospital.

PEARSON, A., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed District Medical Officer, Newark Union, vice A. J. Rowbotham, resigned.

RISDON, GEORGE OWEN, L.R.C.P. Lond., L.S.A., M.R.C.S., has been re-appointed Medical Officer for the No. 2 District of the Wells (Somerset) Union.

ROCHE, ANTONY, M.R.C.P. Irel., has been appointed Examiner in Medical Jurisprudence and Sanitary Science in the Royal University of Ireland.

SADLER, F. J., M.B., B.Ch. Oxon., D.P.H., has been appointed Certifying Surgeon under the Factory Acts for the Barnsley District of the West Riding of York.

SAWYER, J. E. H., B.A., M.B., B.Ch. Oxon., has been appointed Assistant House Physician to St. Thomas's Hospital.

SELOUS, C. F., L.R.C.P., M.R.C.S., has been re-appointed House Physician to St. Thomas's Hospital.

SKERRETT, F. B., B.Sc. Lond., L.R.C.P., M.R.C.S., has been appointed House Physician to St. Thomas's Hospital.

STANNUS, H. S., L.R.C.P., M.R.C.S., has been appointed Clinical Assistant in the Special Department for Diseases of the Throat at St. Thomas's Hospital.

TAYLOR, T. S., M.A., M.B., B.C. Cantab., has been appointed House Surgeon to St. Thomas's Hospital.

THORNE, ATWOOD, M.B. Lond., has been appointed Assistant Surgeon to the London Throat Hospital, Great Portland-street.

WALKER, J. H. S. M.B., C.M. Edin., D.P.H. Aberd., has joined the staff of the Clinical Research Association, Limited, as a Director of the Laboratories.

WATERHOUSE, RUPERT, M.B. Lond., L.R.C.P., M.R.C.S., has been appointed Resident Medical Officer to the Royal United Hospital, Bath.

WILLS, B. S., L.R.C.P., M.R.C.S., has been appointed House Surgeon to St. Thomas's Hospital.

WOODS, W. H. O., M.B., B.C. Cantab., has been appointed Assistant House Surgeon to St. Thomas's Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BEDFORD COUNTY HOSPITAL.—House Physician for six months. Salary £25 for that period, with board, lodging, and washing.

BOROUGH HOSPITAL, BIRKENHEAD.—Senior and also Junior Resident House Surgeon. Salary £100 and £80 respectively per annum, with board and washing.

BOROUGH HOSPITAL, Bootle, Liverpool.—Senior Resident. Salary £100 per annum, with board, &c.

CARDIFF INFIRMARY.—Honorary Assistant Surgeon.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant for three months on payment of £8 8s.

CITY FEVER HOSPITAL, Lodge-road, Birmingham.—Assistant Medical Officer. Salary £120 per annum, with board, residence, &c.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park. Physician to the out-patients. Also Second House Physician for six months. Salary at the rate of £30 per annum, with board and residence.

CITY POORHOUSE AND HOSPITAL, Parliamentary-road, Glasgow.—Junior Assistant Medical Officer. Salary £90 per annum, with board, apartments, &c.

CORPORATION OF LONDON.—Medical Officer of Health, 35 to 50 years of age. Salary £1000 per annum.

CUMBERLAND INFIRMARY, Carlisle.—Resident Medical Officer as House Physician during the first six months, and House Surgeon during the ensuing six months. Salary at the rate of £80 and £100 per annum respectively, with board, lodging, and washing.

DERBYSHIRE ROYAL INFIRMARY, Derby.—Assistant House Surgeon for six months. Salary £30, with board, residence, and washing.

GENERAL HOSPITAL, Birmingham.—Surgical Officer. Salary £100 per annum, with residence, board, and washing.

GLASGOW EYE INFIRMARY.—Assistant House Surgeon. Salary £50, with apartments and board.

GREAT NORTHERN CENTRAL HOSPITAL.—Junior House Surgeon for six months. Salary at the rate of £30 per annum, with board, lodging, and washing.

GUEST HOSPITAL, Dudley.—Senior Resident Medical Officer. Salary £100 per annum, increasing to £120, with board, residence, attendance, and washing.

HOSPITAL FOR WOMEN, Liverpool.—House Surgeon for six months. Honorarium £25, with residence.

HULME DISPENSARY, Stretford-road, Manchester.—House Surgeon. Salary £150 per annum, with apartments, attendance, coal, and gas.

KING'S COLLEGE HOSPITAL, Lincoln's Inn-fields, W.C.—Clinical Pathologist.

LIVERPOOL STANLEY HOSPITAL.—Senior House Surgeon. Salary £80 per annum, with board, residence, and washing.

LIVERPOOL WORKHOUSE, Brownlow-hill.—Assistant Medical Officer. Salary £80 per annum, with rations and apartments, and an additional £20 for examining applicants for out-door relief.

LONDON HOSPITAL, Whitechapel, E.—Surgical Registrar. Salary £100 per annum.

LUNATIC ASYLUM, Isle of Man.—Assistant Medical Officer. Salary £100 per annum, with apartments, washing, and board.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence.

MANCHESTER CHILDREN'S HOSPITAL.—Junior Resident Medical Officer, unmarried, for six months, eligible for election as Senior for another six months. Salary at rate of £80 a year as Junior and £100 a year as Senior, with board and lodging.

MANCHESTER PORT SANITARY AUTHORITY.—Port Medical Officer. Salary £350 per annum.

METROPOLITAN ASYLUMS BOARD.—Assistant Medical Officers, unmarried, not over thirty-five years of age, at the Fever and Small-pox Hospitals. Salary £160 per annum, rising to £200, with board, lodging, attendance, and washing.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Physician, House Surgeon, Assistant House Physician, and Assistant House Surgeon for six months. Salary at the rate of—House Physician and House Surgeon, £40 a year; Assistant House Physician and Assistant House Surgeon, £20 a year.

NEW HOSPITAL FOR WOMEN.—Female Anæsthetist.

NORFOLK AND NORWICH HOSPITAL, Norwich.—House Surgeon, unmarried, not over thirty years of age. Salary £80 per annum, with board, lodging, and washing.

NORTHAMPTON GENERAL INFIRMARY.—Physician, not under twenty-five years of age.

NORTHERN INFIRMARY, Inverness.—House Surgeon. Salary £100, with board, &c.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Dental Surgeon.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Salary £140 per annum, all found except board.

PARISH COUNCIL OF WESTRAY, Orkney.—Medical Officer and Public Vaccinator. Salary £90 per annum.

PATHOLOGICAL LABORATORY (UNIVERSITY OF CAMBRIDGE) — John Lucas Walker Studentship.—Annual value £200, tenable under certain conditions for three years.

PRESTON ROYAL INFIRMARY.—Junior and Assistant House Surgeons. Salaries £80 and £60 per annum respectively, with board, lodging, and washing, &c.

ROTHERHAM HOSPITAL.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and washing.

ROYAL ALBERT HOSPITAL, Devonport.—Resident Medical Officer, unmarried. Salary £110 per annum, with board and lodging.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—Resident Medical Officer, for six months. Salary at the rate of £120 per annum, with furnished apartments, board and washing.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Ventnor.—Assistant Resident Medical Officer, unmarried. Salary £100 per annum, with board and lodging in the hospital.

ROYAL SEA BATHING HOSPITAL, Margate.—Assistant Resident Surgeon. Salary £60 per annum, with board and residence.

RURAL DISTRICTS COUNCILS OF EPSOM AND DORKING AND THE URBAN DISTRICT COUNCILS OF CARSHALTON, DORKING, EPSOM, AND LEATHERHEAD.—Medical Officer of Health.

ST. MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM, City-road, London, E.C.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

SUFFOLK GENERAL HOSPITAL.—House Surgeon. Salary £100 a year, with board, lodging, and washing.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies as Certifying Surgeons under the Factory Acts at Coningsby in the County of Lincoln and at Woking in the County of Surrey.

THROAT HOSPITAL, Golden-square, W.—Non-resident House Surgeon. Salary £100 per annum, with lunch.

TORBAY HOSPITAL, Torbay.—House Surgeon. Salary £100 per annum and £5 for the nurses' lectures. Board, lodging, washing, &c.

TOWER HAMLETS DISPENSARY, Stepney, E.—Resident Medical Officer. Salary £120 per annum, furnished rooms, coals, gas, and attendance.

TUNBRIDGE WELLS GENERAL HOSPITAL.—Resident House Surgeon, unmarried. Salary £100 per annum, with board, furnished apartments, &c.

VICTORIA HOSPITAL FOR CONSUMPTION, Craigleith, Edinburgh.—Resident Physician, for six months. Residence, board, and a small honorarium to cover conveyance.

WALTHAMSTOW URBAN DISTRICT COUNCIL.—Resident Medical Officer for the new Isolation Hospital at Chingford. Salary £120 per annum, with board and lodging.

WARNEFORD HOSPITAL, Leamington.—House Surgeon. Salary £100 per annum, with board, washing, and apartments.

WARNEFORD ASYLUM, Oxford.—Assistant Medical Officer, unmarried. Salary £100 a year, with board, lodging, and washing.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician and also House Surgeon for six months. Board and lodging provided.

WESTMINSTER HOSPITAL MEDICAL SCHOOL.—Lecturer on Biology.

WOOLWICH INFIRMARY, Plumstead.—Assistant Medical Officer, unmarried, not over 30. Salary £150 per annum, with apartments, rations, and washing.

Births, Marriages, and Deaths.

BIRTHS.

MURISON.—On March 5th, at 6, Pier-road, Erith, Kent, the wife of W. R. Murison, L.R.C.P. & S. Edin., of a son.

WAINEWRIGHT.—On Feb. 27th, 1901, at 49, Wickham-road, Beckenham, Kent, the wife of Robert S. Wainewright, M.D. Lond., of a son.

WHITE.—On March 5th, at Westlands, Upper Richmond-road, Putney, S.W., the wife of E. F. White, F.R.C.S., of a daughter.

WROUGHTON.—On March 3rd, at Wetheral, near Carlisle, the wife of William Haultain Wroughton, M.R.C.S., L.R.C.P. Lond., of a daughter.

MARRIAGES.

MURSELL—THOMSON.—On Feb. 18th, at St. Stephen's Church, Gloucester-road, S.W., Henry Temple Mursell, M.B., F.R.C.S., elder son of the Rev. Arthur Mursell, to Helen Foggo, second daughter of the late James Thomson, of Edinburgh.

VINCENT—PEPPIATTE.—On the 4th inst., at St. Marylebone Church, by the Rev. E. W. Raby, M.A., Ralph Vincent, M.B., B.S., M.R.C.P., of 1, Harley-street, W., eldest son of Ralph Vincent, of Leytonstone, to Mary, only daughter of Pelet Peppiatte, of Ware.

DEATHS.

BERRY.—On Tuesday, March 5th, at Margate, Sydney H. Berry, M.B. Lond., F.R.C.S. Eng., of 90, Kellett-road, Brixton, S.W., aged 27. (Recently of Charing Cross Hospital).

BEVAN.—Feb. 25th, at Cheltenham (suddenly) John Paul Bevan, M.R.C.S., L.R.C.P., son of the late Rev. John Bevan, aged 52 years.

CHEYNE.—At 75, Harley-street, W., on Feb. 22nd, Julia Millicent, daughter of W. Watson Cheyne, aged 9 months.

GODFREY.—On Feb. 27th, Graham Philip Godfrey, L.R.C.P., L.R.C.S. Edin., aged 40, son of the late Thomas Godfrey of Mansfield.

GRIFFITH.—On March 3rd, at Grace's-road, Camberwell, John William Griffith, M.D., aged 82.

WHITE.—On Feb. 27th, Samuel Shapland White, M.D., of Queen's-road, Tunbridge Wells.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

INTERFERENCE.

To the Editors of THE LANCET.

SIRS,—I hold the appointment of medical officer to a small convalescent home for soldiers. The home is managed by a committee with a lady secretary. In the course of my treatment of one of the men the lady secretary (on her own responsibility apart from the committee) wrote requesting me to hold a consultation over the case. I refused, on the ground that I was the fit person to judge when this should be necessary and that the suggestion should come from me. The matter was referred to the committee, when the chairman, an eminent military surgeon, disagreed with me. I should be very much obliged if you would tell me what you think of the matter and if, in your opinion, I exceeded my right.

I am, Sirs, yours faithfully,

March 5th, 1901. M.R.C.S.

*** The medical man in charge of a patient is the proper person to decide if a consultation is necessary. If the patient himself or any of his relations or intimate friends suggest a consultation the medical man should be ready to fall in with the idea. No one else should interfere in the matter.—ED. L.

THE FIDGETS.

To the Editors of THE LANCET.

SIRS,—In reply to H. M. W. D. in THE LANCET of Feb. 16th, page 524, warmth, if persevered in, will cure the "fidgets." Warm cycling knickers should be worn and also warm woollen stockings with putties or well-fitting gaiters. Knitted woollen knee-caps must be worn at night. Give half a grain of opium daily two hours before usual time of attack of "fidgets." Massage to abdomen and lower extremities might do good in this case.

I am, Sirs, yours faithfully,

Feb. 25th, 1901. I. M. S.

PUBLIC DINNERS WITHOUT WINE.

To the Editors of THE LANCET.

SIRS,—I have read with much interest your leading article "Legislation against National Intemperance" in THE LANCET of Feb. 9th, p. 410. Might I suggest that the officials of the London medical schools would be helping the cause of temperance amongst medical students if they ceased to force alcohol down their throats (as it were) at their annual dinners? I have for the last eight or 10 years regularly protested against the guinea tickets *including wine* which are issued for the annual dinner of my old alma mater (University College), and to which first year's medical students are so cordially invited, but up till now no change has been made. Equally good dinners can be arranged without compulsory wine. The British Medical Association always issues dinner tickets *without wine*, but medical students are not invited to these functions.

I am, Sirs, yours faithfully,

Harley-street, Feb. 14th, 1901. BERNARD ROTH.

MEDICAL FEES AT CORONERS' INQUESTS.

To the Editors of THE LANCET.

SIRS,—Can you or any of our medical coroners give me information on the following questions? Has a coroner elected by the county council power to summon a medical witness and to disallow his fee when he has given medical testimony? Secondly, if a coroner has no such power can I sue him or the county council? What is my remedy, the coroner having disallowed my fee?

I am, Sirs, yours faithfully,

March 5th, 1901. FELLOW.

*** It is not unknown for a coroner in certain circumstances to refuse fees to a medical witness. His power to do so in a particular case can only be ascertained by legal action. The proceedings should be against the coroner and should only be undertaken with legal advice.

"NEW EDITIONS OF SCIENTIFIC WORKS."

To the Editors of THE LANCET.

SIRS,—In the last number of THE LANCET that reached me (issue of Dec. 1st, 1900) I notice an editorial comment on the letter of a correspondent on New Editions of Scientific Works. Your correspondent's proposal for the printing of appendices (containing *all the corrections, additions,* and *new illustrations* in revised editions of standard works) is not so difficult as you seem to think. The printing of a good appendix would of course necessitate the setting up of the type separately, but the publishers could readily adjust the price of the appendix to the cost of production, and so far from the venture being a financial loss I am convinced it would add considerably to the profits of the book. Surely a book that can be issued at, say, 15s., could have an appendix published at a profit if sold for two or three shillings, or more, according to the expense o

production. Under existing circumstances many medical men of limited means cannot afford to continue buying each new edition of standard works, many of which appear every two or three years, whereas they would gladly pay a reasonable sum for a good appendix. The latter would, of course, be of no use to purchasers who did not possess an original copy of the book, and the sale of the corrections separately could not therefore interfere in any way with that of the work itself. As it is, many of us prefer to buy an entirely new work on a given subject to purchasing the new edition of an old work at a high price. Trusting that some publisher with a quick perception of his own interests as well as of the needs of his *clientèle* will see these remarks and put the venture to the test,

I am, Sirs, yours faithfully,

VICTOR E. H. LINDESAY, Capt. I.M.S.

China Expeditionary Force, IV Goorkhas,
Shanghai, Jan. 20th, 1901.

THE DUTIES OF SURGERY ATTENDANTS.

To the Editors of THE LANCET.

SIRS,—Would any of your readers kindly tell me what are the usual duties of a surgery attendant in a general practice and the usual salary?

I should also be glad to know if anyone has tried army dispensers in the surgery, and whether they were a success, and what salary was given.

I am, Sirs, yours faithfully,

March 5th, 1901. MEDICUS.

SECRET COMMISSIONS AND THE MEDICAL PROFESSION.

A MEDICAL man residing in one of the largest towns in the North of England has sent us the following circular which he received from a firm of surgical appliance makers in the town:—

> DEAR SIR,—In order that patients needing surgical apparatus may obtain the greatest possible comfort and support we adapt every appliance to the special requirements of each particular case. We do not, therefore, supply such apparatus wholesale, but allow the profession 20 per cent. discount, being the difference between the wholesale and retail prices. The patient is in all cases required to pay cash and is charged exactly the same whether recommended by a medical man or not. This method, whilst a saving of time to the medical attendant, ensures greater comfort and security to the patient. Any cases you may send us shall have our careful attention; a note or card should be sent with each case for identification.
>
> We are, faithfully yours,
>
> Discount remitted monthly. —— & ——.

We consider that this method of doing business is most reprehensible. It is neither more nor less than the offer of a bribe to a medical man to send patients to the firm in question instead of to the firm whose work they consider best. Such an offer is an insult and any firm adopting such methods must not be surprised at finding itself suspected of selling inferior goods.

CONSULTATIONS WITH HOMŒOPATHISTS.

Medicus writes: "Would you please to state the rule respecting a medical man meeting in surgical or medical cases a general practitioner who is, or states that he is, a homœopathic practitioner. Is it correct for the medical man to meet the homœopath at all? Is it right for a surgeon to come in consultation and perform operations for him? I am not aware that there is a homœopathic consultant within any reasonable distance of the small town mentioned."

*** It is not right for a medical man to meet practitioners who follow homœopathic lines in consultation. The tenets of homœopaths are founded on a completely false conception of disease; there is therefore no common ground upon which medical men can meet them for any discussion which would be of advantage to the patient.—ED. L.

A Subscriber to THE LANCET *since 1886* is thanked for his information. The advertisement in question had already been investigated and suppressed by ourselves. It is not at all surprising that occasionally advertisements of this character should get into our columns, as their nature is always more or less disguised.

Enemy.—Under the circumstances detailed our correspondent is, in our opinion, entitled to the payment of notification fees. In our pamphlet dealing with the difficulties arising under the Notification Act, page 20 *et seq.*, the matter is fully dealt with.

Suspended Animation.—Cheyne's case of Colonel Townshend is quoted by Aytoun, in the "Lays of Scottish Cavaliers and Other Poems" in the introduction to a poem entitled Hermotimus.

Davoz Platz.—There is no such book, but the matter is one upon which our correspondent's medical adviser can give an opinion.

L. J. will find the information that he requires in the last Students' Number of THE LANCET, published September 1st, 1900.

B. D.—The householder is not responsible for medical attendance upon his servants unless he expressly offers to pay for it.

A. M. W. urges in strong language precepts which will be found in our columns *passim*.

J. R. P.—We cannot deviate from our practice.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

WEDNESDAY (13th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (14th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

FRIDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

SATURDAY (16th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (11th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Dr. R. J. A. Berry (Edinburgh): A Lantern and Microscopic Demonstration on the True Cæcal Apex: being an Attempt to Prove that the Vermiform Appendix is not a Vestigial Structure.

TUESDAY (12th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—Address:—Prof. S. Woodhead: Immunity. Prof. Wright (Netley) and Mr. T. J. Bokenham will take part in the discussion.

CHELSEA CLINICAL SOCIETY (Jenner Institute of Preventive Medicine, Grosvenor-road, Chelsea).—8.30 P.M. Annual Clinical Debate:—The Clinical and Pathological Relations of the Chronic Rheumatic and Rheumatoid Affections to Acute Infective Rheumatism.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN (17, Bloomsbury-square, W.C.).—8 P.M. Mr. M. W. Allen and Mr. E. T. Brewis: Notes on some Essential Oils.—Mr. J. C. Umney: Copaiba of Commerce.—Mr. J. S. Ward: An Adulterant of Stramonium Leaves.

WEDNESDAY (13th).—HUNTERIAN SOCIETY (London Institution, Finsbury-circus, E.C.).—8.30 P.M. Mr. J. Cantlie: Plague (illustrated with lantern slides). (All members of the profession are invited.)

THURSDAY (14th).—CHILDHOOD SOCIETY (Library of the Sanitary Institute, 72, Margaret-street, W.).—4.30 P.M. Annual Meeting. 8 P.M. Prof. H. L. Withers: Examinatians in their Relation to Mental Growth.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.—8 P.M. Cases, &c. 8.30 P.M. Papers:—Dr. Edridge-Green: Evolution of the Colour sense.—Mr. T. P. Teale: On the Value of Peritomy in certain Cases of Iritis, Episcleritis, and Purulent Ophthalmia.—Mr. J. F. Bullar: Notes on a Case of Membranous Conjunctivitis.—Major H. Herbert, I.M.S.: (1) A Note on the Surface of the Normal Cornea; (2) Hypertrophy and Ossification of Tarsus.

BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Specimens will be shown by Mr. F. Jordan, Dr. H. Macnaughton-Jones, and Mr. C. Ryall. Paper:—Mr. W. R. Williams: Pathology and Treatment of Uterine Tumours during the Nineteenth Century.

GOLDSMITHS' INSTITUTE CHEMICAL SOCIETY (New Cross, S.E.).—8 P.M. Dr. J. Eyre: Antitoxic Sera, their Preparation and Standardisation.

FRIDAY (15th).—SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN (Belgrave Hospital for Children, 79, Gloucester-street, S.W.).—6.30 P.M. Cases will be shown by Dr. G. Carpenter, Dr. W. Ewart, Mr. C. T. Dent, Mr. E. T. Collins, Mr. F. Jaffray, and Dr. E. Cautley. Paper:—Dr. H. Ashby (Manchester): On a Case of Congenital Acute Nephritis.

EPIDEMIOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Papers:—Dr. N. P. Schierbeck (Copenhagen): The Enteric Fever Mortality in Copenhagen from 1828–1898.—Dr. J. T. R. Davison: The Effect of Sewerage and Water Supply upon the behaviour of Enteric Fever in Buenos Ayres.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

SUNDAY (10th).—SUNDAY AFTERNOON FREE LECTURES (South-place Institute, South-place, E.C.).—4 P.M. Mr. C. W. Thies: The Hospitals of London (with lantern illustrations).

MONDAY (11th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Prof. P. Furnivall: The Pathology, Diagnosis, and Treatment of the various Neoplasms of Stomach and Intestine.
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. T. C. Fox: Consultation. (Skin.)
WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. Edwards: Rectal Stricture and Ulceration.

TUESDAY (12th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. S. Taylor: Consultation. (Medical.)
THE BROWN ANIMAL SANATORY INSTITUTION (University of London, South Kensington, S.W.).—5 P.M. Dr. J. Rose Bradford (Professor-Superintendent): The Protozoa in their Relation to Disease, with especial reference to the so-called Tsetse-Fly Disease of South Africa.
ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. Dr. A. Macfadyen: The Cell as the Unit of Life.
LONDON TEMPERANCE HOSPITAL (Hampstead-road, N.W.).—2 P.M. Dr. P. Parkinson: Clinical and Pathological Demonstration.

WEDNESDAY (13th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Prof. P. Furnivall: The Pathology, Diagnosis, and Treatment of the various Neoplasms of the Stomach and Intestine.
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Berry: Consultation. (Surgical.)
LONDON THROAT HOSPITAL (204, Great Portland-street, W.).—5 P.M. Mr. Waggett: Diseases of the Accessory Sinuses. (Post-Graduate Course.)
HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Mr. S. Boyd: Sugical Cases in the Wards.
THE SANITARY INSTITUTE, (Parkes Museum, Margaret-street, W.).—8 P.M. Discussion on Ventilation, Success and Failures of the Methods at present in use (to be opened by Dr. C. Child.)

THURSDAY (14th).—LONDON TEMPERANCE HOSPITAL (Hampstead-road, N.W.).—2 P.M. Dr. S. Fenwick: Clinical and Pathological Demonstration.
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)
THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Lees: Demonstration of Selected Cases.
THE HOSPITAL FOR DISEASES OF THE SKIN (Stamford-street, Blackfriars).—3 P.M. Clinical Demonstration: Dr. P. S. Abraham.
WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. Robinson: The Diagnosis of Abdominal Swellings.

FRIDAY (15th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Prof. P. Furnivall: The Pathology, Diagnosis, and Treatment of the various Neoplasms of the Stomach and Intestine.
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. D. Grant: Consultation. (Ear.)
ROYAL INSTITUTION OF GREAT BRITAIN.—9 P.M. Major A. St. Hill Gibbons: Through the Heart of Africa from South to North.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1900, which was completed with the issue of Dec. 29th, and the Title-page to the Volume were given in THE LANCET of Jan. 5th.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1900, bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers, cloth, gilt lettered, price 2*s.*, by post 2*s.* 2*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, MR. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and agents are authorised to collect, and do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Mar. 7th, 1901.

Date.		Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Mar.	1	29·07	S.W.	0·19	84	53	42	45	46	Cloudy
,,	2	29·22	SSW	0·02	82	54	40	42	44	Overcast
,,	3	29·19	SSW	0·16	78	49	40	47	49	Cloudy
,,	4	29·76	S.W.	0·06	66	54	38	40	41	Overcast
,,	5	29·60	S.W.	0·19	89	56	41	49	50	Raining
,,	6	29·58	S.W.	0·09	73	48	42	43	46	Cloudy
,,	7	29·22	N.W.	0·20	74	49	42	42	43	Raining

During the week marked copies of the following newspapers have been received:—*Birmingham Weekly Post, Brighton Daily News, Fife Advertiser, Dundee Advertiser, Glasgow Herald, Southport Visitor, Rugby Advertiser, Middlesex Times, Exeter Times, Sheffield Telegraph, Plymouth Mercury, Scotsman, Citizen, Architect Times of India, Pioneer Mail, Builder, Liverpool Daily Post, Bristol Mercury, Yorkshire Post, Manchester Guardian, Leeds Mercury Sanitary Record, Eastern Morning News, Hull Weekly Free Press, Aberdeen Herald, Leighton Buzzard Observer, Weymouth Telegraph Penrith Observer, Lynn News, Melbourne Age, Essex Telegraph, Lowestoft Standard, Batley News, Normanton Herald, Home Chat, Mining Journal, Felixstowe Visitors' List, City Press, Reading Mercury, Hertfordshire Mercury, Sheerness Guardian, Bradford Daily Argus, Local Government Journal, Surrey Advertiser, Australasian Medical Gazette, Local Government Chronicle, North Devon Herald, Cleveland Mercury, Kent County Examiner, Daily Express, London, Oxford Chronicle, Malvern Advertiser, Abergavenny Chronicle, Leith Observer, &c., &c.*

Communications, Letters, &c., have been received from—

A.—Herr E Allbrecht, Dresden; Mons. J Astier, Asnières, France; Association for the Supply of Vaccine Lymph. Lond.; Asylums Committee of the County of London, Clerk to; A. D. L. T.; Messrs. Arnold and Sons, Lond., Angier Chemical Co, Lond.

B.—Dr. H. A. Benham Fishponds; Messrs. Burroughs, Wellcome, and Co., Lond; Bedford County Hospital, Secretary of Dr. M. G. Biggs, Wandsworth Common; Messrs. Bemrose and Sons, Lond.; Mr. W. H. Brooks, Leicester; Messrs. A. and C Black, Lond.; Mr. A. Bowstead, Caistor Mr. E. M. Brockbank, Manchester; Buckingham Rural District, Medical Officer of Health of.

C.—Mr. E. Treacher Collins, Lond.: Cardiff Infirmary, Secretary of; Cortland Wagon Co., Lond.; Messrs. Cassell and Co., Lond.; Mr. E. W. Chapman, Lond.; Messrs. Samson Clark and Co., Lond.; Lieutenant - Colonel A. E. J. Croly, R.A.M.C., Bombay; Messrs. Cosenza and Co., Lond.; Mr. J. Cleland, Downpatrick. Messrs. Condy and Mitchell, Lond.; Mr. F. Cardy, Lond.; Messrs. A. H. Cox and Co., Brighton; City of London Hospital for Diseases of the Chest, Secretary of; Chelsea Clinical Society, Hon. Secretary of.

D.—Mr. F. Davidson, Lond. Mr. A. Dunhill, Lond.; Davoz Platz; Mr. H De Styrap, Shrewsbury; Rev. J. P. Dargitz, Lakeport, Cal.; Derbyshire Royal Infirmary, Secretary of.

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The Hunterian Lectures

ON

THE TOPOGRAPHICAL ANATOMY OF THE ABDOMINAL VISCERA IN MAN.[1]

Delivered before the Royal College of Surgeons of England on March 4th, 6th, and 8th, 1901,

BY CHRISTOPHER ADDISON, M.D. LOND., F.R.C.S. ENG.,

PROFESSOR OF ANATOMY AT THE UNIVERSITY COLLEGE, SHEFFIELD.

LECTURE I.

Delivered on March 4th.

MR. PRESIDENT AND GENTLEMEN,—I thank you very much for the honour you have done me in electing me to deliver this course of lectures. I desire also, at the beginning, to express my warmest thanks to Dr. T. Claye Shaw and the resident medical officers of the London County Asylum, Banstead, and to Mr. Waters (the master), Dr. L. G. Hunt, and the resident medical officers of the Fir Vale Workhouse, Sheffield, for the very liberal manner in which for long periods they allowed me, with every possible assistance, to work in the mortuaries of these institutions. I am also much indebted to Dr. Leonard Giles of Scarborough for help with the appendix tables; also to Mr. A. M. Connell, the demonstrator of anatomy at University College, Sheffield, who throughout the preparation of the illustrations special to these lectures rendered me a constant and generous assistance which cannot be acknowledged too sincerely.

PURPOSE OF INQUIRY.

With the advance of medical and surgical science, especially as regards the operations of surgery on the abdomen, the topography of the abdominal viscera becomes of increasing importance. Any method of determining the position of the underlying parts should be as simple as possible, it should be convenient of application and should be applicable to a body of any size or condition, and it should, withal, as far as possible, make use of those terms of abdominal topography which have become established by custom and with the least possible disturbance of their present signification. Many accurate and extended measurements of the abdominal organs have been published at different times; but these, though exact in themselves, do not necessarily enable us to form an adequate anticipation of the shape or position of particular organs, if they themselves, or adjoining ones, abdominal or thoracic, are enlarged or diminished in size or altered in position through any cause whatever. The condition of an organ may be ascertainable on superficial examination, but in many cases this does not carry with it any exact information as to what we may expect to meet with in the neighbouring parts. These lectures embody the results of an inquiry into the topographical anatomy of the abdominal viscera in man. The work falls into two parts: (1) that dealing with the relations of the viscera to the surface of the body; and (2) that dealing with their relations to one another.

With regard to the first part, it is to be remarked that the methods of mapping out the abdomen at present in general use are open to certain objections, for the reason that the lines employed to divide the abdomen transversely are drawn at distances from one another which are variable and that the variations are not determined by the dimensions of the body. The points, especially, between which the upper transverse abdominal line is drawn are so variable in their level that in some cases the two transverse abdominal lines come very near together, leaving a large part of the abdomen above them not mapped out; whilst in other cases they may be far apart, and, moreover, it often happens in fat subjects that the points (such as particular rib cartilages) between which the upper transverse line is drawn cannot be accurately determined, and frequently the line if drawn correctly is not horizontal. The distance between the two transverse lines is usually much less than the distances above or below them, to the sternum and pubes respectively. Professor Cunningham[2] gives the average distance between them as 2·7 inches; the average depth of the costal zone, above the upper line, as six inches; and of the hypogastric zone, below the lower line, as five inches. Now six inches is too great a length without a guiding line in the costal zone, considering the very important structures contained in that region, if a line can be found therein which possesses a fairly constant significance. It has therefore been sought, first, to elaborate some system of abdominal surface-marking which shall be independent of variable surface points and which, whilst retaining those points as adjuncts, shall be unvarying and uniformly-proportioned to the size of the trunk; which shall be easily determined and in which the lines used to divide the abdomen shall be possessed of such constancy both in regard to the bony skeleton and the viscera that the lines themselves become reliable as landmarks.

With regard to the second part, it is of great clinical importance that in any case not only the position of any organ should be recorded, but that of all others in its neighbourhood; for in this way only can we discover the degree of independence or of interdependence in the position of the various organs and the extent, if any, to which when they are enlarged or diminished in size or displaced they tend to cause alterations in the positions of the various neighbouring parts. And it is perhaps as important to determine that changes in the shape or position of any one organ do not tend to cause alterations in the position of a neighbouring one as to determine that they do. In the second part of this inquiry, therefore, the abdominal viscera have been carefully mapped out in relation to well-defined, uniformly-proportioned surface lines, and by studying and comparing a series of cases it has been sought to ascertain, as far as possible, the modes in which the abdominal viscera alter their position or are displaced, when they themselves, or the viscera in their neighbourhood, are enlarged or diminished in size or pressed upon by the neighbouring parts.

DELIMITATION OF THE REGIONS OF THE ABDOMEN (FIG. 1).

In all examinations the subject was laid flat on the back, the legs extended in a straight line with the trunk, the arms drawn evenly down by the sides, and the head resting extended on the table. The abdomen is divided vertically by three lines—a median line and two lateral lines. The lateral lines are drawn vertically upwards, one on each side, through a point midway between the anterior superior iliac spine and the middle line, in a line drawn transversely across between the two anterior superior iliac spines. The median line is very useful both for the equal division of the abdomen and for purposes of measurement. The method for determining the lateral lines is more accurate than by taking the mid-point of Poupart's ligament, for that is a point which is not easy exactly to determine. Lines drawn obliquely upwards, such as those used by Professor Macalister,[3] from the spine of the pubes to the eighth costal cartilage seem objectionable because of the variations of the eighth costal cartilage and because the lines divide the abdomen unequally. The body is divided transversely by lines drawn across through points a quarter, a half, and three-quarters of the way along a line drawn from the upper border of the pubes to the supra-sternal notch. The uppermost transverse line passes across the thorax, as a rule 3·2 centimetres above the lower border of the body of the sternum. We are not further concerned with it. The upper transverse abdominal line, half-way from the pubes to the supra-sternal notch, is spoken of as the line E, F, and the lower transverse abdominal line—a quarter of the way—as the line C, D.

My purpose in selecting the transverse lines described was simply that of obtaining easily-found, equidistant points for the purpose of measurement and I was not prepared for the regularity of position in regard to the vertebræ and other structures which especially the upper line E, F, has been found to possess. It corresponds almost accurately to the disc between the first and second lumbar vertebræ, and cuts the junction of the eighth and ninth costal cartilages at the tip of the ninth. The lower line, C, D, practically corresponds

[1] The full details of the research on which these lectures are founded have been published in the Journal of Anatomy and Physiology, vols. xxxiii., xxxiv., and xxxv., and the author wishes to express his best thanks to the editors of that Journal for those illustrations which are reproduced in these lectures.

[2] Delimitation of Regions of Abdomen, Journal of Anatomy and Physiology, 1893.

[3] Text-book of Anatomy.

with Cunningham's intertubercular line drawn across between the two tubercles on the outer aspects of the iliac crests, and passes, on an average, five centimetres above the anterior superior iliac spine and 3·5 centimetres below the highest point of the iliac crest. The consequence of this division of the abdomen, as will be seen on reference to Fig. 1, is that there are right and left epigastric, umbilical, hypogastric, iliac, lumbar, and hypochondriac regions, with the hypochondriac regions, as a rule, wholly beneath the costal cartilages. This strict limitation of the hypochondriac region will not, I think, be seen to possess any disadvantage, whereas the increase of the lumbar region is to be desired.

METHOD OF EXAMINATION.

For obtaining the maps of the viscera the bodies of 40 subjects taken consecutively were examined in the fresh state, with the exception of two control bodies which were hardened before examination by the injection of 5 per cent. of formic aldehyde solution. In all but a few cases the examination was made within 30 hours after death.

Tables were prepared in which the time after death was noted, and the condition of the nutrition of the body in such general terms as "emaciated," "fair," "good," or "fat," and any special pathological or other condition or obvious displacement or distension of organs were described, and on which, later, the state of the various viscera whether soft or firm, was specially mentioned. On the tables also were recorded the age, sex, causes of death, stature, the dimensions of the trunk in various directions, the distances from one another of the various bony and other surface points and their relations to the lines used to divide the abdomen, as well as many other general and particular facts.

The distances from the pubes to the supra-sternal notch were measured by drawing the tape tightly between these points. If the abdomen was convex between them the half-way point was marked directly; if concave, the spot directly beneath the mid-point of the tape was taken, and at this point, after a small skin incision, a long steel pin was driven through the abdomen. This marked the level of the upper transverse line E, F. In a similar way the level of the quarter-way line C, D, was determined and a second pin driven through the abdomen. The position of the lateral lines was then determined and four more pins were driven through the abdomen, one in each lateral line in the planes of C, D, and E, F.

FIG. 1.

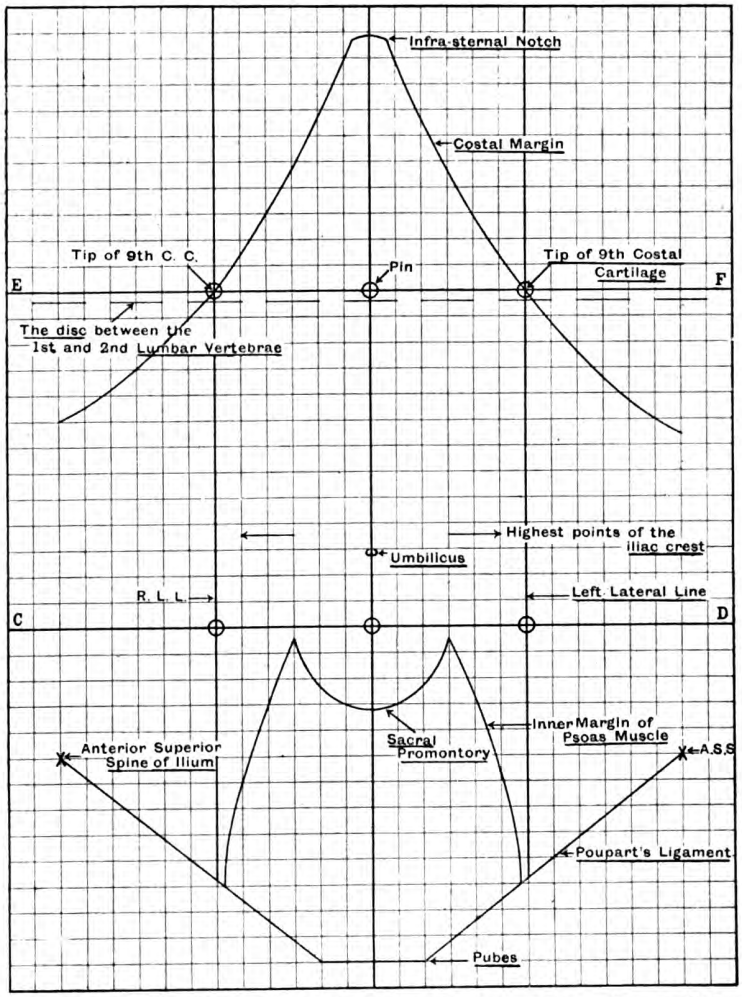


Diagram showing the average position of the landmarks whereby the abdominal regions are limited. E, F, is drawn transversely half-way and C, D, a quarter-way between the pubes and the supra-sternal notch. The vertical lines used are the middle line and two lateral lines, one on each side, drawn vertically upwards through a point midway between the anterior superior iliac spine and the middle line.

If the abdomen between the anterior superior iliac spines was convex forwards beyond them, or unequally distended as in the case of a distended cæcum, the measurement between the spines was taken on a forward projection and was confirmed on opening the abdomen. After opening the abdomen the distances vertically upwards from Poupart's ligament along the lateral lines, from the anterior superior iliac spines, and from the highest point of the iliac crests to the costal arch or ribs, and other measurements, were checked as they were come to, and a drawing of the costal arch was made. For this drawing the distances of the tips of the different cartilages from the infra-sternal notch were measured along the costal margin; the transverse width

of the arch in the plane of E, F, and between the tips of the tenth costal cartilages, or other suitable points according to the arch, was also taken, and the differences in level and width, if any, of the points cut by the lateral lines as they impinged on the arch and the line of E, F, as it passed transversely. At the conclusion of the examination the relations were obtained of the upper medium pin to the disc between the first and second lumbar vertebræ, and of the lower pin to the aortic bifurcation, to the disc between the fourth and fifth lumbar vertebræ, and to the pelvic brim in the middle line. Finally, the brim of the pelvis, as measured between the inner margins of the psoas muscles, was fully drawn in its relation to C, D, and Poupart's ligament. These different bony and other surface and deep points, with the lines used to divide the abdomen in their appropriate positions, were drawn on the life-size scale on large sheets ruled in centimetre squares in which the outlines of the various viscera were progressively filled in.

In this way a complete map of the superficial and deep points in their relations to the lines of division of the abdomen was obtained and the outlines of the viscera projected on to the surface in relation to the lines adopted could—if the lines were not found convenient—be transferred to any other system of surface divisions whatever. The steel pins used to transfix the abdomen are 14 inches in length, with a long, well-sharpened point and an expanded head, and as thin as is consistent with absolute rigidity. They were driven in with the utmost care and at right angles to the table. They were made so long in order that, as they project for some inches from the front abdominal wall, the slightest obliquity might be obvious. For it is clear that even a small degree of obliquity in the case of a thick abdomen would lead to the point of the pin entering the back wall a centimetre or more higher or lower as the case might be. It was, however, done so carefully that I think in the whole series the degrees of error will fairly correct one another. The median and lower lateral pins fasten themselves in the vertebræ and iliac bones respectively. The upper lateral pins which passed free of or through the costal cartilages, as the case might be, were driven into the table. The measurements of a part were taken immediately from a pin at the point of its transfixion with a stiff steel measure. The abdomen was opened by a median incision, and by lateral incisions in the planes of C, D, and E, F, as far as the pins, or farther outwards if necessary.

I need not detain you to describe the order of the examination of the parts, which necessarily varied somewhat in different cases. No parts were disturbed before being measured and drawn, and they were cut away piecemeal as required to expose the parts beneath. A complete map of the viscera and of the lines of the peritoneal attachments was at length obtained. Subsidiary drawings of peritoneal pouches and other parts were made as required, and at the end of the examination the parts at the back of the abdomen and the brim of the pelvis were filled in.

Two or three of the large ruled sheets were generally required for the records, and the examination, which occupied, as a rule, four hours or more, was often very difficult and laborious. Although 40 cases are presented and averages drawn from them, it is fully recognised that in the case of many of the averages much more extended observations are necessary.

SURFACE POINTS AND MEASUREMENTS.

The matter to be dealt with compels me sometimes to state averages and to give measurements, but I will try to trouble you as little as possible with figures. They have been fully analysed and set forth in the different tables.

There were 12 females examined and 28 males. The average age was 45½ years. The average height was five feet three and three-quarter inches, or about 160 centimetres. The average distance from the pubes to the supra-sternal notch was nearly a third of the height—viz., 52 centimetres, and this distance varied very little. In 65 per cent. of the cases the distance did not vary more than two centimetres from the average. The greatest distance was 58 centimetres (in a male five feet five inches in height), and the least distance was 46 centimetres. This occurred in two cases, in a male four feet six and a half inches and in a female four feet seven inches in height. The distance from the pubes to the supra-sternal notch, therefore, is not a very accurate guide to the height of the individual.

The average length of the abdominal part of the trunk was 35·8 centimetres, leaving the manubrium and body of the sternum a length of 16·2 centimetres, or about one-tenth (9·8 per cent.) of the total height of the individual. The average distance between the transverse lines was 13 centimetres or a little over five inches. (Refer to Fig. 1.) The infra-sternal notch averaged 9·8 centimetres or about four inches above the upper transverse abdominal line. The maximum distance recorded was only 11·5 centimetres, and it occurred only in two cases; the minimum distance, eight centimetres, was only recorded in two cases. In such a diversity of subjects, with so different characters of the chest and abdomen, this variation is small and would seem to indicate the serviceableness of the line E, F.

The upper transverse abdominal line (E, F).—The mid-point of the distances from the pubes to the supra-sternal notch was taken quite regardless of the condition of the body, whether fat or thin, with the abdomen or chest distended or not, and the regularity of the position which it is found to occupy is of much interest. Its average position was opposite the body on the first lumbar vertebra, 0·33 centimetre above the disc between the first and second lumbar vertebræ. The variations from the disc were very small; in 36 cases, or 90 per cent., the pin was less than two centimetres from it. The maximum distance away (2·5 centimetres) occurred only in one case. Considering the very important structures which overlie the vertebral column in this neighbourhood this regularity in its position renders the surface line of much utility. The line passed across in the average at the tip of the ninth costal cartilage on the right side and a little above it on the left. We find on comparison that the tip of the ninth costal cartilage had a somewhat wider excursion in relation to E, F, than the first lumbar inter-vertebral disc had. (Fig. 2.) In 30 cases, or 75 per cent., the level of the tip of the cartilage was not more than two centimetres from that of the surface line, and it happens that in a like number of cases it had an equal variation in regard to the first lumbar inter-vertebral disc. The greatest distance of the tip of the ninth costal cartilage from the surface line was three centimetres in two cases; there were, however, five cases in which it varied from three centimetres to five centimetres from the disc. The point of importance, however, is that we often cannot definitely locate the tip of the ninth costal cartilage until the skin and muscles have been reflected, whilst the surface line is found in a moment.

The lower transverse abdominal line (C, D).—In the region of the abdomen across which the lower—quarter-way—transverse line passes the bony points are more stable and the necessity of a transverse line apart from them is not pressing. However, the line C, D, occupied a very constant position in relation to the anterior superior iliac spines. In 35 cases, or 87·5 per cent., it did not vary more than one centimetre from its average distance of five centimetres above the spines. It averaged 3·5 centimetres lower than the highest part of the iliac crest, and in this relation also the variations were small, for in 31 cases, or 77·5 per cent., the variation was not more than one centimetre from the average. If we combine these last two statements it appears that the rise in the ilium from the anterior superior iliac spine to the highest part of the crest, as the subject lay on the table, was 8·5 centimetres, or nearly three and a half inches. The tilt of the vertebral column varies, and the part which, looked at from the front, would be selected as that where the spine definitely bends backwards into the pelvis, is variously the lower border of the fifth lumbar vertebra, the upper border of the sacrum, or the disc between these bones. This part in any case in the tables is called the sacral promontory. The line C, D, corresponded to the fifth lumbar vertebra 3·2 centimetres above the promontory. We will not stay to analyse the variations. They were a little wider than its variations in regard to the crest and anterior superior spines of the ilium. The average position of the *umbilicus* was about an inch (2·7 centimetres) above C, D. It varied from the same level up to 5·5 centimetres above, but in 21 cases, or 52·5 per cent., the variations were not more than one centimetre from the average. In 30 cases, or 75 per cent., the umbilicus was not more than one centimetre away from the level of the highest point of the iliac crest; but in the remaining cases the variation was as much as six centimetres. We may fairly say that the lower transverse abdominal line is as regular in its position in regard to the bony points as the umbilicus is.

The width across the *costal arch* in the plane of the line E, F, varied too much for the figures to be of any value, and it is evident that except at the upper part

of the arch it is of little use to describe the deep parts as being so much internal to, coinciding with, or as so much beneath the costal margin. The average distance between the two anterior superior iliac spines was 23·8 centimetres and the width across the body in the plane of C, D, was 29 centimetres. In rising five centimetres in level the iliac crests therefore had widened out one inch on each side. There were eight cases in which the distance between the anterior superior iliac spines was 22 centimetres or less, of which two were females. The smallest measurement, 19 centimetres, occurred in a man five feet four and a half inches in height and 52 centimetres from the pubes to the supra-sternal notch. There were seven cases, all males, in which the distance was 26 centimetres or more, up to 28 centimetres in three cases, the individuals in these being respectively 5 feet 2½ inches, 5 feet 10½ inches, and 5 feet 5 inches in height, and 55, 55, and 58 centimetres from the pubes to the supra-sternal notch respectively. The distance vertically upwards from the anterior superior iliac spines to the nearest part of the costal arch, which was almost invariably the tenth costal cartilage, ranged from 8·5 centimetres to 18 centimetres. This is another proof of the variableness of the costal arch; although it should be said that in 23 cases on each side the variation was not more than one centimetre from the average. In 17 cases the distance on the right side exceeded that on the left, and in five cases only was it less. In 16 cases, or 40 per cent., the tenth costal cartilage did not articulate with the ninth, and in most of these cases the twelfth rib was noticed to be small and difficult to feel. The average distance from the highest part of the iliac crest vertically upwards to the nearest rib was 4·8 centimetres, and 4·7 centimetres on the right and left sides respectively. The part met with was usually some part of the eleventh rib. In 33 cases the distances on the two sides were practically equal, and in five cases that on the right exceeded that on the left. The measurements ranged from three centimetres to eight centimetres, which is a wide variation in view of the small distance involved. It is interesting to notice that in the average the lateral lines, drawn vertically upwards, and the line E, F, drawn transversely, met the costal margin in identical points on each side—viz., the tip of the ninth costal cartilage.

AVERAGE POSITION OF THE VISCERA IN REGARD TO THE SURFACE (FIGS. 2 AND 3).

In regard to the surface marking of the viscera it is better that we should have clearly in our minds the general position of certain important points around which the parts can be arranged than that we should burden our memories with detailed measurements of individual organs.

A. The upper transverse abdominal line E, F.—Firstly, this practically bisects the stomach over the middle line and the pylorus a little further to the right. Reference to the outlines shows that in 29, or 72·5 per cent., of the cases the line was absolutely reliable as a guide to the pylorus, passing either through it or at one of its margins. Secondly, it represents at its intersection with the middle line the lower border of the liver. This observation, however, is perhaps of no special importance since the lower border of the liver can usually be made out by palpation and percussion. Thirdly, at its intersection with the right lateral line it marks the place where the gall-bladder overlies the duodenum, and, when the liver is not enlarged or displaced downwards, it usually passes a little above the highest part of the ascending colon. Fourthly, about half-way between the middle line and the left lateral line it marks the upper border of the duodeno-jejunal flexure and the upper end of the root of the mesentery. The duodeno-jejunal flexure is perhaps the least moveable part of the small intestine, for the outlines of the duodena on the reduced scale show that in 34, or 85 per cent., of the cases it was not more than two centimetres away from the surface line, one way or the other. Fifthly, it follows from what has been said from its relation to the pylorus that the line almost invariably crosses some part of the head of the pancreas, usually about the upper third. Moreover, in the left lateral line, the anterior border of the pancreas in 70 per cent. of the cases was within two centimetres of this line. In fact, it may be said that in the left lateral line at this level are found, in the absence of manifest distensions of the stomach or intestines, the greater curvature of the stomach as it passes beneath the costal arch, the anterior border of the pancreas with the attached transverse meso-colon, and the upper border of the transverse colon itself. Sixthly, further to the left beneath the ribs the line crosses the basal surface of the spleen.

B. The lower transverse abdominal line C, D.—First, it represents at points half-way between the middle line and the lateral lines the place where the psoas muscles diverge from the lumbo-sacral promontory, and, on the left side, the line passes a little above the inner attachment of the meso-sigmoid; secondly, in the right lateral line it marks the upper border of the ileo-colic junction; thirdly, in the left lateral line it marks the inner border of the descending colon just above the commencement of the meso-sigmoid.

C. A plane across the abdomen midway between the transverse lines corresponds nearly enough in each lateral line to the lower pole of the kidney, passing a little above that of the right and a little below that of the left. In the right lateral line, also, it indicates the commencement of the transverse meso-colon, and in the middle line the root of the mesentery as it crosses from left to right.

A few points concerning the surface markings of individual viscera may be mentioned.

1. *The stomach.*—After the œsophagus has pierced the diaphragm it frequently passes downwards and to the left for a short distance before opening directly into the stomach. The position found to be occupied by the cardiac orifice, beneath the seventh costal cartilage about an inch from its junction with the sternum, agrees with that generally given. The stomach passes from the cardiac orifice upwards and to the left into the vault of the diaphragm and reaches its summit in the left lateral line just below the fifth costal cartilage. By the summit of the stomach is meant that part which is highest *in situ*; for if the stomach be removed from the body and distended it is often found that that part which was previously the highest is now not so, but a portion of the stomach which was previously on a posterior plane.

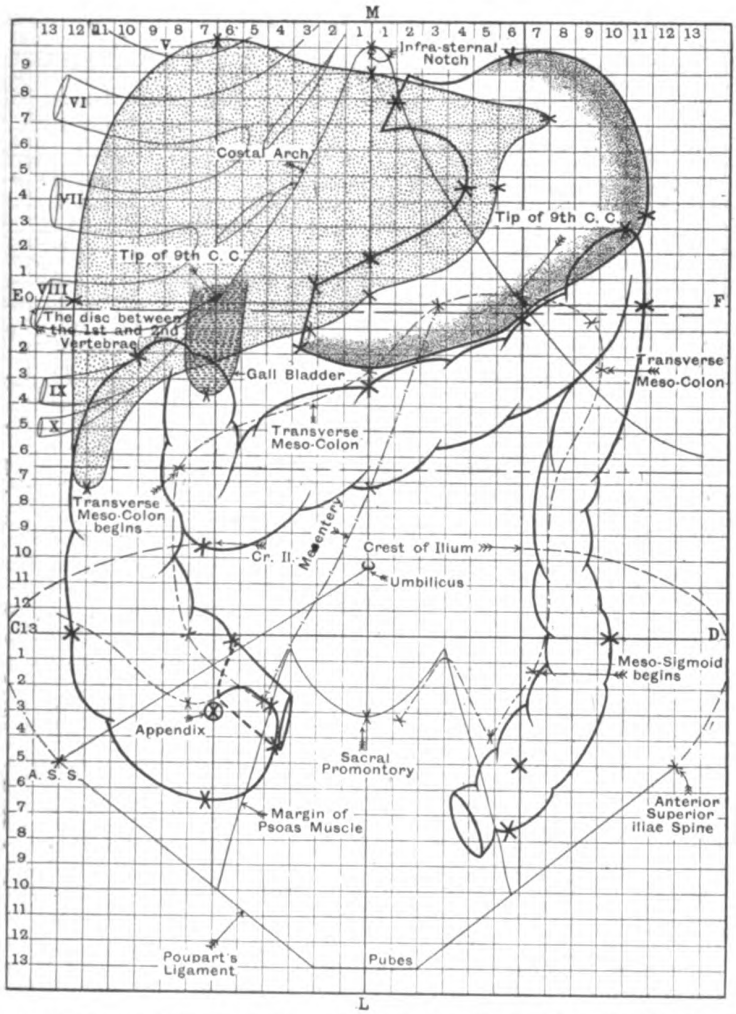
2. *The duodenum.*—The duodenum may be roughly mapped out by constructing a parallelogram which has for its sides the middle line, the line E, F, the right lateral line, and the line drawn transversely half-way between the transverse abdominal lines (see Fig. 3). The upper, outer, and lower sides of the parallelogram respectively bisect the first, second, and third parts of the duodenum, whilst the fourth part inclines to the left of the inner side of the parallelogram. It is, of course, to be remembered that the duodenum only commences about an inch to the right of the middle line. In the right lateral line the second part of the duodenum reaches nearly down to the highest part of the iliac crest.

The root of the *mesentery* extends from a point midway between the middle and left lateral lines in the plane of E, F, downwards and to the right to the inner margin of the right psoas muscle at a point midway between the planes of the anterior superior iliac spines and of the C, D, rather nearer to the right lateral than the middle line. The *lower end of the ileum* is commonly firmly fixed in its position and the upper border of the ileo-colic junction is marked by the intersection of the right lateral and lower transverse abdominal lines. The *root of the appendix* generally lies near the lower border of the ileo-colic junction in the right lateral line about the level of the lower end of the mesentery. It is usually an inch or so below the mid-point of a line drawn from the anterior superior iliac spine to the umbilicus. The lowest point of the *cæcum* is usually in the right lateral line well below the level of the anterior superior iliac spine. A line drawn vertically upwards from the right anterior superior iliac spine represents accurately enough the outer border of the *ascending colon*. The inner borders, both of the ascending and descending colon, are more constant in their position as regards the surface than the outer borders lying generally a little outside either lateral line. The *transverse colon* as it crosses the middle line is variable both in its shape and position. It is, in a general way wholly in the umbilical regions, and, in the average, its lower border reaches to midway between the transverse abdominal lines. The first (or firmly attached) portion of the *sigmoid colon* begins a little outside the left lateral line just below the level of C, D, and the freely moveable part, which has a long mesentery passing upwards along the left pelvic brim, begins in the left lateral line about the level of the anterior superior iliac spine.

The solid viscera.—What has been said of the duodenum indicates the position of the head of the *pancreas* and we have seen that the line E, F, represents the anterior border of the pancreas in the left lateral line. Nothing need be said

here of the surface-marking of the *liver* except that its left extremity usually reaches a little beyond the left lateral line behind the sixth costal cartilage and its highest part on the right side is behind the fifth costal cartilage in the right lateral line. The upper transverse abdominal line E, F, crosses the *right kidney* at the junction of its upper with its middle thirds and the *left kidney* at the junction of its upper two-fifths with its lower three-fifths, and the lateral lines traverse the kidneys vertically about a third of the way from their inner to their outer borders. The highest part of the *spleen* in front is marked by a point in the left lateral line behind the sixth costal cartilage.

FIG 2.



Outline figures showing the average position of the abdominal viscera on a centimetre scale; reduced to 0·36 natural size. The lines of the peritoneal attachments are also shown. The crosses (× ×) indicate the position of the various "points" referred to in the text. The lettering is the same as in Fig. 1. (From a drawing by C. W. Smith.) *Note.*—The arrow showing the tip of the ninth right costal cartilage should have been drawn pointing to the intersection of E, F, and the right lateral line. The lower border of the stomach and the upper border of the transverse colon in the left lateral line should have been each represented 0·5 cm. lower down.

The further details of this part of the subject are perhaps more usefully set forth in the various tables and illustrations than in any other way—especially in Figs. 2 and 3. We will pass on to consider the positions and displacements of the different viscera in detail, commencing with the stomach.

THE STOMACH.

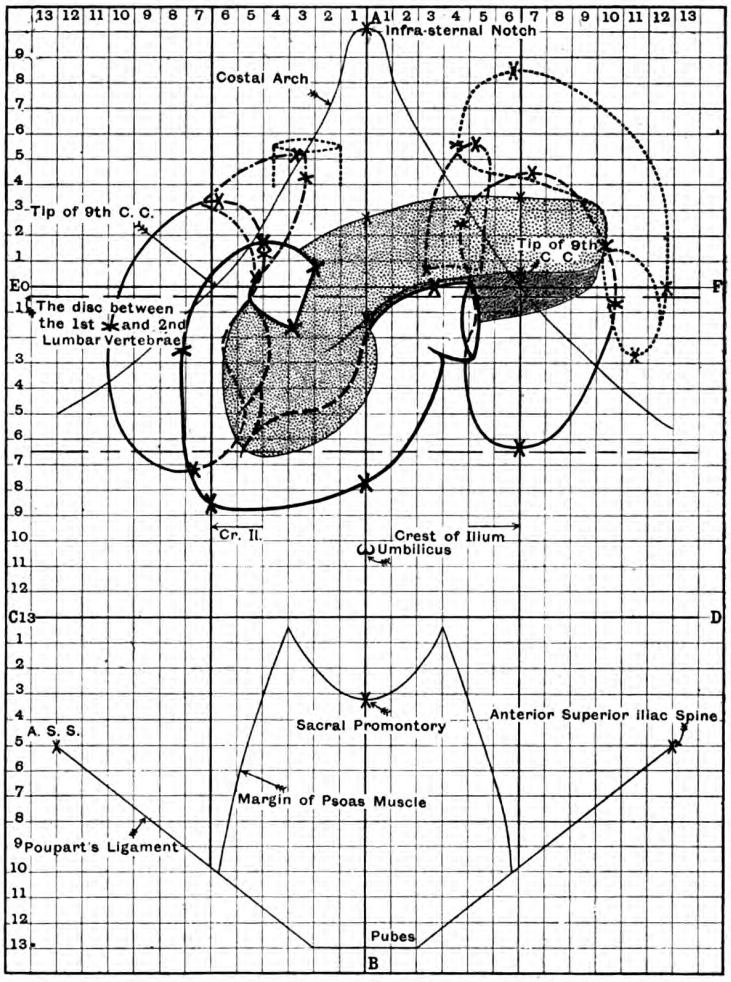
The relations of the stomach anteriorly to the liver and transverse colon are best referred to as we consider its different displacements. The part of the stomach which is in immediate relation with the anterior abdominal wall is very variable in its extent and position. It may apparently most certainly be approached in the plane of the upper transverse line about midway between the middle and left lateral lines.

1. *Variations of the shape of the stomach* (Fig. 4).[4]—The outline of the stomach as seen from the front does not necessarily indicate what would be its shape if it were removed from the body and filled. Its shape is no doubt in a great measure determined by the pressure of adjoining viscera, but allowing for this the cases do perhaps furnish some indications of certain natural varieties in shape. The first variety consists of a type of stomach usually not of large size and characterised by a long cylindrical portion passing to the pylorus. It is, perhaps, the commonest. It was well marked in 11 cases and less so in six others, or in 42·5 per cent. of the total cases. Sometimes the shape was plainly due in a large measure to the pressure of the transverse colon. We remark that the stomachs of this type contain amongst them all those in which the stomach was highly placed and, coincidently with this, all those in which a distended transverse colon passed highly upwards in front of the stomach. The frequency with which this occurred—viz., in nine cases, or nearly one in four—is, I think, of clinical

[4] This figure, along with others, will appear with the second lecture and will contain selected examples of the outline of the stomach from selected cases to illustrate the different points referred to.

interest. In other cases also of this group the transverse colon was distended, though not in front of the stomach. It is clear that a distended transverse colon was associated very commonly with this shape of the stomach and presumably was to some extent responsible for it. It is, however, open to suggestion, seeing, for instance, that the stomach from Case 1 (which was a good example of this type) still retained its shape after removal from the body and being filled with agar jelly, whether this type of stomach, being mostly small, does not, if the colon becomes distended, invite the bowel, as it were, to seek its additional room in the upper part of the abdominal cavity, so that a distended colon high in the abdomen may not alone be the cause, but perhaps, to some extent, the consequence, of a stomach this shape. Eight of the subjects with this type of stomach were emaciated and had suffered from long-standing disease. As to the second variety, six of the stomachs show very well, and three others imperfectly, evidence of a constriction somewhere in the cardiac portion that would no doubt have been permanent. The constriction, when present, tends to be about half-way along the left border of the greater curvature. The interior of these stomachs was not examined. In regard to a third variety, eight of the stomachs which were apparently chronically distended were almost evenly cylindrical. They will be referred to again. A quadrilateral shape of the stomach was presented in some cases (No. 16) and there were of course many types intermediate between those described.

FIG. 3.



Outlines of the deeper abdominal viscera constructed on the same plan as those shown in Fig. 2. (From a drawing by C. W. Smith.)

2. *Variations in the Position of the Stomach.*

The cardiac orifice. — The general position of the centre of the cardiac orifice was two centimetres below the infra-sternal notch and one centimetre from the middle line. It had, however, an excursion of seven centimetres about the infra-sternal notch, from six centimetres below to one centimetre above. In three instances only (Nos. 4, 12, and 34) the centre of the cardiac orifice was above the infra-sternal notch. The first patient had died from phthisis; the stomach was large and full; there is no record of distension of the rest of the intestine, and the transverse colon was low and tortuous. The second case was one of pneumonia; the jejunum and cæcum were very distended; the transverse colon was full and the splenic flexure reached high up into the vault of the diaphragm to the left of the stomach. The third case was one of phthisis with some tuberculous peritonitis; the small intestines were very distended; the transverse colon was in its normal position; the liver was very large and extended to the left across the stomach overlapping the spleen. Taking the extreme cases the other way; there were six cases in which the centre of the cardiac orifice was four centimetres or more below the infra-sternal notch (Nos. 7, 15, 18, 27, 30, and 35). The first was a case of right pneumothorax, with the liver and stomach pushed down. The second case presented a large intra-thoracic tumour, with a similar displacement of the stomach and liver. In the third case the costal arch was narrow but there is nothing recorded from the thorax to account for the low cardiac opening; and in this case, although the upper border of the stomach was lower than usual, the lower border was higher than the average, being supported by distended small intestines above a low transverse colon. In the fourth

case there was a large secondary sarcomatous growth in the thorax, especially on the left side; the transverse colon was distended and low down. In the fifth case there was no special factor recorded; the small intestines were distended, but the transverse colon was low down, running across the pelvic cavity. The last case was one of advanced phthisis, and in this, as in the third case, the lower border of the stomach was higher than the average; but the cause of the displacement of the upper border downwards was quite obvious, for a huge transverse colon had passed up in front of the stomach, pushing the liver over to the right and insinuating itself between the stomach below and the diaphragm above.

Conclusions.—The chest conditions, as we should anticipate, are the most important in producing downward displacements of the cardiac portion of the stomach, even against considerable intestinal distension below. Upward displacements are usually associated with distension of the intestines and often with a large transverse colon passing upwards in front of the stomach. On the other hand, distension of the intestines, even when there is absence of any obvious thoracic opposition, is not always associated with a raised cardiac orifice. The distension of the transverse colon, in fact, in the last case was the actual cause of the downward displacement of the cardiac orifice. A comparison of the relative levels of the cardiac and pyloric orifices does not reveal any point worth noting.

The pylorus.—If the diagrams on Fig. 4 be consulted it will be seen that in 29 cases, or 72·5 per cent., the line E, F, passed either across some part of the pylorus or within 1·5 centimetres of one of its margins. 1. *Vertical displacements.*—There were 29 cases in which the upper border of the pylorus was in the plane of, or above the level of, E, F, and 11 cases in which it was below. In five of the first group of cases the pylorus was more than three centimetres, up to 6·5 centimetres, above E, F. These cases we will call those of "high position." In six of the last group of cases the pylorus was more than two centimetres, up to 6·5 centimetres, below E, F. These we will call the cases of "low position." The total excursion of the pylorus about the plane of E, F, was 13 centimetres. In four of the five cases of high position the colon was distended and passed upwards to a variable height in front of the stomach, and in the other case (No. 5) a distended jejunum pressed the stomach up. In these cases also the liver was pressed upwards and to the right by the distended intestines, and was noted to be small in three of the cases. Five of the six cases in which the pylorus occupied a low position presented a liver either large or displaced downwards. In two cases there was a large lardaceous liver; in one case an immense liver was pushed downwards by a large growth filling the right side of the thorax; in another case the liver was displaced downwards by a right pneumothorax, and in the remaining case there was a large and somewhat low nutmeg liver. In all these cases the stomach was distended and vertically elongated. In all of the cases there was a low prolapsed transverse colon, but in three of them there was a considerable interval between the upper border of the prolapsed colon and the greater curvature of the stomach, in which the stomach was supported behind the mesocolon by small intestines.

Low positions of the stomach.—Those cases in which the pylorus reached low down in the abdomen include amongst them most of those in which the stomach, as a whole, was low down, but not all. It will be convenient to take at this place those other cases in which the stomach itself was lowly situated whilst the pylorus was not depressed. A stomach may be full—in fact, distended—without coming appreciably lower in the abdomen, as outlines 9, 10, 16, 23, 28, and 29 on Fig. 4 show. It appears to be the stomach which is vertically elongated (however that elongation may have been produced) which is found low down, and its low position is usually associated with a liver enlarged or displaced downwards and with a low or prolapsed transverse colon. In Case 38 all the parts were loaded with fat and the gastro-intestinal canal was very capacious; the stomach was very flabby and of immense size and came 10 centimetres below E, F, in the middle line. The liver in this case was not enlarged and occupied its normal level, and the pylorus was at its usual height. The transverse colon ran along the lower border of the stomach to the left lateral line, when it passed upwards beneath the stomach to its splenic flexure, which was situated above the level of E, F. In Case 39 the stomach was eight centimetres below E, F in the left lateral line. There was a large liver extending low down on the right side, but with only a thin flap overlying the stomach to the left of the middle line; a distended transverse colon passed across below the greater curvature of the stomach. In this case the upper border of the pylorus was situated in the plane of E, F, 0·75 centimetre to the right of the middle line. In Case 30 similar conditions prevailed, though they were not so exaggerated, and the transverse colon was prolapsed.

Conclusions.—1. From the foregoing cases it appears that a highly placed stomach is usually associated with the liver placed well up beneath the ribs, and often small, and with a highly-placed transverse colon, which in most cases also is distended. As regards the transverse colon, however, it appears that it may come upwards in front of the stomach without appreciably raising the whole stomach, merely pressing it backwards into the stomach bed. 2. A low position of the stomach—referring to the greater curvature—appears to be specially associated with the liver extending low down in the abdomen and perhaps enlarged and with a low transverse colon. But the transverse colon, by an increase in the length of its mesentery, may sink away from the stomach, which may be supported at its usual level by the small intestines behind the long transverse mesocolon. 3. The liver is clearly chiefly responsible for causing alterations in the level of the pylorus. When the liver extends low down in the abdominal cavity the pylorus is generally lowly situated, and *vice versâ*. Moreover, allowing for the fact that the part of the liver overhanging the stomach varies considerably in thickness, it appears that *mere distension of the stomach, apart from a low position of the liver, is not sufficient to produce material downward displacement of the pylorus.*

A Clinical Lecture

ON

THE TREATMENT OF TUBERCULOUS PERITONITIS.

Delivered at the Medical Graduates' College and Polyclinic on Dec. 19th, 1900,

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GENTLEMEN,—I propose to call your attention in this lecture to the particulars of three successive cases of tuberculous peritonitis which were treated by a form of *medical* treatment which I shall describe to you and which I think merits your attention as the patients in all three cases made excellent recoveries.

The results that have of late years been obtained in the treatment of tuberculous peritonitis, as at present carried out, afford, I think, much cause for congratulation and satisfaction to the representatives of modern medicine. It would not be easy to point to any disease in which, as compared with 50 years ago, the prognosis has so greatly improved. Sir Thomas Watson, one of my distinguished predecessors in the chair of Medicine in King's College, in his well-known lectures, when referring to cases of this disease, says: "These are very unpromising forms of disease and it is seldom that we can do more than mitigate the most distressing of the symptoms, or retard, perhaps, the march of the disorder ..... do what we may, *in nine cases out of 10*, our best directed efforts will be disappointed." Much more recently Dr. Bristowe, in his "Text-book of Medicine," wrote of this disease in a scarcely less despondent tone. He says: "Tubercular peritonitis tends, as a rule, to a fatal result; at the same time there are good grounds for belief that recovery occasionally occurs." Even so recently as 1894 Professor Dieulafoy writes of this disease: "Death is almost always the consequence; a cure is, however, possible."[1]

How great an improvement has taken place in the treatment of cases of tuberculous peritonitis may be judged from the fact that statistics show that now over 50 per cent. of these cases recover, and there seems to be good reason to

[1] Manuel de Pathologie Interne, seventh edition.

hope that as modern methods of treatment become better known and earlier applied still more favourable results will be obtained. We doubtless owe some of this improvement to the vast progress which has been made in recent years in abdominal surgery, dependent on the better knowledge we possess as to the immunity with which operations on the peritoneal cavity may be undertaken provided it is protected from septic infection. But my object in this lecture is to show that progress has also been made in the *medical* measures which are applicable to the treatment of this disease We know much more now about the pathology and clinical history of tuberculosis than we did 25 years ago and our knowledge is daily growing more and more complete.

The teaching of Louis and his followers that tubercle of the peritoneum was never *primary*, but always *secondary*, to pulmonary tuberculosis has only recently been called in question, and strange to say this doctrine is still maintained in the most modern of our systems of medicine and we read there that "a primary tuberculous peritonitis is of very doubtful existence and the disease is probably never limited to the peritoneum. ..... Most commonly an eruption of tubercle on the abdominal serous membrane is secondary to pulmonary tuberculosis and caseating lymphatic glands in the thorax."[2] But Osler[3] has shown that this view is no longer tenable and that a tuberculous affection of the peritoneum is often primary. It was so in five out of 17 of his necropsies—i.e., in 30 per cent. And if this was the proportion in the fatal cases one might expect a much larger proportion in those that recover. This is a very encouraging fact from the point of view of therapeutics, as it must be far more hopeful to have to deal with an *uncomplicated* tuberculous peritonitis than to have to deal with tubercle of the peritoneum complicated with tubercle of other organs. Indeed, it would be very difficult to understand the success that has undoubtedly attended laparotomy in treating this disease if it were true, as has been taught, that tubercle of the peritoneum is almost invariably secondary to tubercle within the chest. Moreover, it has been shown that tubercle bacilli can pass through the wall of the intestine into the peritoneal cavity without attacking the former.

In answer to the question, "How does the tubercle bacillus reach the peritoneum?" Dieulafoy gives this reply: "Most frequently it enters by the *intestine* where it has been introduced in the food—infected meat, infected milk. The bacillus may attack the intestine first and the peritoneum next, but *absorbed by the superficial lymphatics* of the mucous membrane, it *may attack primitively the serous membrane*. This appears to have been proved by the recent experiments of Wesener and Cornil. ..... Debroklousky has demonstrated that the bacillus can pass through the walls of the intestine and reach the peritoneum without a primary lesion of the intestine."[4] This observation points to a very probable cause, and a preventable one, of many cases of tuberculous peritonitis—viz., the consumption of infected milk. In one of the cases which I have to relate to you the occurrence of this disease was believed to have been traced to the use of milk from a cow which was subsequently found to be tuberculous; and it was at least possible, if not probable, that infected milk may have been the cause in the other two. With these few preliminary remarks I will now ask your attention to the particulars of the three cases, the treatment of which I wish to bring to your notice.

CASE 1.—In the middle of June, 1898, a girl, 13 years of age, was sent into King's College Hospital, under my care, by Dr. Raymond Crawfurd, who had been attending her at the Victoria Hospital for Sick Children, and the diagnosis sent with the case was that it was one of tuberculous peritonitis and pleuritis. Besides the physical signs of an effusion of fluid in the right pleural cavity we had also in this case the symptoms of acute tuberculous peritonitis. The patient presented much abdominal swelling and tympany and much abdominal pain and tenderness; she was also much emaciated. It was also noted on admission that the cheeks were flushed, that the skin was hot and perspiring, the tongue dry and furred, and the breath offensive. The pulse was rapid, small, and compressible. There was dulness at the base of the chest on the right side for about a hand's breadth, with absence of breath sounds and absence of vocal fremitus. The abdomen, as has been said, was distended and painful and tympanitic all over, except in the flanks and the hypogastric region, where there was dulness which changed its position on moving the patient from side to side and which was no doubt due to the presence of fluid in the peritoneal cavity. There was also troublesome diarrhœa and the motions were offensive and contained undigested food. The temperature was of the hectic type and very characteristic of tuberculous disease. The chart for the first week after admission indicated that the daily range of temperature was as much sometimes as 6° F., the morning temperature falling to 97·2°, and the evening temperature rising to 103·2°. The previous history of this case pointed to a comparatively sudden onset. The family history was very good and the child had had no previous illnesses. She was quite well a month before admission into the hospital. At that time she began to complain of abdominal pains of a "griping" character which came on suddenly and "doubled her up" as her mother expressed it. The abdomen was observed to have become swollen and there was severe diarrhœa. The taking of food immediately brought on both pain and diarrhœa. It was also noticed that the child sweated freely at night. There could be no doubt that we had to do with a case of tuberculous peritonitis, very possibly due to the consumption of infected milk, and the pleural effusion was most probably also of tuberculous origin.

With regard to treatment the indications were clearly first to allay the pain and catarrhal irritation of the bowels, and secondly, to combat, if possible, the tuberculous infection. She was therefore ordered a mixture to be taken every six hours, containing in each dose 15 grains of salicylate of bismuth, 15 minims of spirit of chloroform, half a drachm of compound tincture of cardamoms and some mucilage and water, and to have milk diet. At the same time a liniment was applied to the abdomen consisting of three parts of opium liniment and one part of tincture of iodine. This treatment diminished the frequency and the offensiveness of the evacuations and relieved the pain, so that our attempt to carry out the first indication was, to a certain extent, successful. How, in the next place, were we to give effect to the second indication—viz., to combat the tuberculous infection? I had found in former cases of tuberculous peritonitis—or cases diagnosed as such—that had been under my care that recovery had in some instances appeared to follow the use of iodine or iodoform applied freely to the abdominal surface as well as given internally; therefore four days after this child's admission I ordered a mixture of equal parts of iodoform ointment and cod-liver oil to be rubbed in freely over the abdominal surface twice daily; and a week after admission the bismuth mixture was discontinued and a pill containing a quarter of a grain of iodoform and half a minim of creasote was given thrice daily. The patient at first made little or no notable progress, and it was not until about the middle of July—nearly four weeks from the date of her admission—that the motions had become normal, no longer offensive, and quite formed. The temperature also showed a marked improvement. She was therefore allowed some solid food in the shape of eggs, or custard, or fish; but with this change in the diet the diarrhœa returned and the motions became offensive and the temperature rose and again assumed the hectic type. We therefore had again to return to the liquid diet. On weighing the patient we found that during the time she had been in the hospital she had lost nearly 12 lb We, however, persevered with the treatment and by August 4th the motions had again improved in appearance and the temperature had fallen to normal. But this improvement was not steadily maintained, for by the middle of August the child's weight had diminished two pounds more and she had had another return of diarrhœa but not a severe one; it was noted at this date that the fluid had disappeared from the right pleural cavity and the chest conditions had become normal. There was now no complaint of abdominal tenderness nor any dulness in the flanks, but there was a trace of albumin in the urine which soon disappeared. About this date a slow and steady but unmistakeable improvement began to set in. On the 24th it was noted that for the first time since her admission she had gained a little in weight. She was then allowed a little solid food (bread in soup and bread-and-butter). Mr. J. C. Briscoe, the house physician, to whom I am indebted for these notes, observes that between August 25th and the 30th "there was a slight attempt at a return of the hectic temperature," but by Sept. 1st the temperature had become normal and had remained so. She had now

[2] Allbutt's System of Medicine, vol. iii., p. 658.
[3] Practice of Medicine, third edition, p. 286.
[4] Manuel de Pathologie Interne, vol. ii., p. 608, seventh edition.

been under treatment in the hospital for more than 10 weeks. On Sept. 7th it was noted that the improvement was maintained; her weight had improved from 4 st. 12 lb. to 5 st. 1 lb. and she was then put on ordinary diet. The bowels and the temperature were normal. During the next fortnight the improvement became very marked. On the 12th she was able to get up and recline on the couch, and on the 21st the local application of the mixture of cod-liver oil and iodoform ointment was discontinued having been kept up for three months. A teaspoonful of cod-liver oil was given three times a day. On the 30th her weight had increased to 6 st. 3½ lb. On Oct 8th the creasote and iodoform pills were discontinued and on the 15th the patient was discharged—so far as could be judged—cured. Her weight was then 6 st. 8 lb.

Now one important point in the treatment of this case is the persevering manner in which we applied our remedies. The local application of iodoform ointment and cod-liver oil was continued uninterruptedly from June 17th to Sept. 21st, more than three months, and the iodoform and creasote pills were given from June 21st to Oct. 8th. When, owing to the commencement of the vacation, I discontinued my visits to the hospital at the beginning of August, I was by no means sanguine as to the results of the treatment. There had been relapses from time to time and a return of some of the characteristic abdominal symptoms and the patient continued to lose flesh and to look very ill—notwithstanding that she had been six weeks under treatment. On July 29th it had been noted that the temperature had again risen and had again assumed the hectic type. The bowels also had again become loose and the motions offensive. Even on August 13th there was a relapse in the condition of the bowels, but only in a slight degree, and there was no notable rise of temperature. The weight, however, had fallen to 4 st. 12 lb.

I can imagine an impatient medical attendant becoming dissatisfied with the progress of the case and sceptical as to the ultimate value of the treatment. But there were one or two points that were distinctly encouraging. The fluid had disappeared from the right pleural cavity and there were no longer any abnormal signs about the chest. The abdominal swelling and tenderness were less and there had been an improvement in the temperature. Still, when I handed over the care of this case to my representative on my departure for my holiday, as I have already said, I was by no means sanguine as to the result. When I returned to the hospital in the beginning of October I was not a little gratified and perhaps somewhat surprised to have presented to me a bright-looking, well-nourished, active girl, with the appearance of perfect health and to be told that this was the same patient I had left two months before a wretchedly ill, emaciated, shrunken, and exhausted child. Instead of weighing as she did then 4 st. 12 lb. she now weighed 6 st. 8 lb.

A point of some interest in this case was the co-existence of pleurisy with effusion—no doubt of tuberculous nature. The frequency with which tuberculous pleurisy accompanies tuberculous peritonitis has been remarked upon by many authors, and especially by Dieulafoy and Osler, and its occurrence under these circumstances is easily explicable on account of the close lymphatic connexion between the two serous cavities.

I do not quite agree with those French pathologists and physicians who maintain that "probably the greater number of primary pleurisies are tuberculous," but I am more disposed to accept their teaching that "pleural tubercle is eminently curable, thus resembling the peritoneal form." My belief is that all primary pleurisies are either *tuberculous* or *rheumatic*, and that the rheumatic toxin, whatever that may be, is responsible for a goodly number, at any rate, in this country. And this belief is founded on bedside observation—on the fact that the symptoms of the pleurisies which I call rheumatic disappear rapidly on the administration of salicin or the salicylates. I agree, however, that pleural and peritoneal tubercle are "eminently curable"—indeed, this is the truth I am now concerned in enforcing, and before I have done I shall call your attention to a suggestion that meningeal tubercle may in course of time come to be included in the list. In the serous membranes it seems possible to encounter the tubercle bacillus unaccompanied by any other pathogenic organism and amenable, therefore, to simpler and more direct methods of treatment. In the lungs it is too frequently associated with other active pathogenic microbes, and therefore presents in advanced stages a far more complex and more difficult problem to the physician.

CASE 2.—The next case to which I wish to call your attention was a very interesting one, but as it occurred in private practice and as no special or continuous notes were taken you will not expect me to enter into any minute details. Soon after the occurrence of the case which I have just related to you I was summoned by an eminent surgeon to see with him a young lady upon whom he had a fortnight before performed an abdominal operation. The history he gave me was an interesting one. This patient had suffered for some time from abdominal pain and discomfort of an obscure nature. She had consulted one hospital surgeon who diagnosed the presence of a dermoid cyst and recommended its removal. Subsequently she was seen by the eminent surgeon who called me in and he diagnosed the existence of appendicitis and an operation was undertaken for its relief. When the surgeon opened the abdominal cavity he was astonished to find that the case was one of tuberculous peritonitis in a somewhat advanced stage. Not only was the peritoneum thickly studded with tubercles, but the walls of the intestines seemed also to be largely involved. He thought the prognosis under these circumstances was very unfavourable. A fortnight after the operation he called me in to the case, referred to the case I have already related to you, which had been mentioned to him, and asked me to take charge of his patient and to do the best I could for her. At that period there was no sign that any benefit had resulted from the operation but rather the contrary. The patient was very ill, very weak, and exhausted, with severe diarrhœa and a temperature ranging between 103° and 104° F. My first effort was by means of appropriate remedies to endeavour to control the diarrhœa which was serious and exhausting. This in the course of four or five days I succeeded in doing. I then began the iodoform applications to the surface of the abdomen, freely applied twice daily as in the preceding case. I also gave the patient iodoform and creasote in pills internally. She soon began to improve, the diarrhœa entirely ceased, and the temperature in a few weeks became normal. After five weeks of this treatment she was well enough to be removed to the seaside. She was kept under observation for a considerable time and she continued to improve with occasional drawbacks which I need not now enter into. She is at present quite restored to health.

There are two very interesting points in the history of this case deserving our consideration. 1. As to the difficulty in diagnosis. There had never been any suspicion in this case of the existence of tuberculous peritonitis until the operation revealed its presence. This has frequently happened before in similar cases. So latent is this disease in its onset in some instances and so obscure are its early symptoms that abdominal section, undertaken for quite other conditions, has often disclosed its existence; indeed, we may say that we were indebted to this circumstance originally for the suggestion that laparotomy might be a cure for certain cases of tuberculous peritonitis.[5] I may also mention that there was no family predisposition to tuberculous disease in this case; indeed, after the discovery of the nature of the malady an investigation that was made seemed to point to its originating in the consumption of milk from a tuberculous cow. 2. Another interesting question to consider is, Did the surgical operation promote the cure of this case? Indirectly it certainly did, for it led to the discovery of the tuberculosis, and had not this been discovered we can hardly doubt that the patient's life would have been imperilled. I have already told you the condition of the patient when she came under my care. But before I attempt to estimate the value of surgical operations in the treatment of tuberculous peritonitis I should like to mention very briefly my third case and then return to this point.

CASE 3.—A few weeks after the patient in the last case had become convalescent I received a telegram asking me to meet a medical man in the west of London. He explained to me that he was only acting as locum-tenent, that the case had been handed over to him by a professional neighbour who was away on his holiday (it was the middle of August). He said, as was true, that the case was a desperate one and that he had no hope of recovery. I am unable to give you a very precise or detailed

[5] In 1862 Sir Spencer Wells on opening the abdomen for ovariotomy found the case to be one of tuberculous peritonitis; the result of the error was that the patient was cured.

history of the case under these circumstances, but I understood that the child (it was an only daughter about 11 years of age) had been ill only a few weeks, that the illness had been more or less an acute one, and that the diagnosis of the case arrived at by his absent neighbour after consultation with a well-known physician, and from the symptoms observed, was perforation of the bowel. He further stated that he had himself had the advantage of consulting with a hospital surgeon as to the advisability of an operation, but the surgeon did not consider it advisable on account of the great prostration and unpromising aspect of the patient. The little patient was, indeed, extremely ill. She could retain no food whatever, either given by the stomach or by the rectum. Attempts to feed her by the rectum were followed always in a short time by the return of the food mixed with fæcal matter. The child was terribly emaciated and the abdomen was much distended and tympanitic. The pulse was small and rapid. I found on inquiry that she had been staying recently at the seaside and had been in the habit of drinking milk from a source which might have been infected, although nothing was certainly known nor had any suspicions on this head been aroused. After a careful examination of the case I pointed out to the medical man in attendance that there was nothing in the case inconsistent with the view that it might be one of tuberculous peritonitis of an acute form. There was a certain amount of bright intelligence about the child notwithstanding her wretched physical condition which seemed to me of somewhat favourable import. I gave some instructions in regard to the best methods of attempting to feed the child and I strongly advised the rubbing in of iodoform ointment to the abdominal surface and the administration by the mouth of pills of iodoform and creasote. These measures were most thoroughly carried out by the medical man and the skilful nurse in attendance. About a fortnight afterwards I received a letter from the medical man in attendance to the effect that the child had borne the treatment exceedingly well, had retained the pills, had no longer either diarrhœa or vomiting, was beginning to gain flesh, and, in short, that there was a "wonderful change." I saw the patient a day or two after this and the change was certainly very remarkable. The child was bright and cheerful; she was taking fluid food well and readily. The abdominal distension had greatly diminished and there was little or no pain on pressure. I happened to be leaving London for Scotland that same evening and I did not see this patient again, but I have been informed that she steadily improved and made a complete recovery.

I have thought a brief account of these three cases might be worthy of your attention, as they are not picked cases, but occurred in close succession within a few months of one another. The patients were all treated in the same way and they all made good recoveries. They were all desperately ill and of a disease which not so very long ago was regarded as a very fatal one.

There is one circumstance in connexion with the cases I have related to you which I am disposed to think is a very important one from the therapeutic point of view—that is, they were all more or less acute cases, two of them markedly so, and they were in young people between 10 and 20 years of age. I have certainly seen this method fail to produce any marked curative effect when applied in very chronic cases of the dry adhesive type and in older persons. And, as we shall presently see, these are also the cases in which the results of surgical operation are far less favourable than in ascitic cases in the early stage. Indeed, it is the old, old story that what is an efficient remedy for a disease in the early stages often fails to be so in the more advanced periods; and this is easy to comprehend. In these advanced chronic cases, and especially in patients of riper years, the conditions essential to the curative action of a remedial agent are probably absent. In such cases the facility of the diffusion of an antitoxic or anti-bacterial agent into the affected tissues may be very much less than in a patient of tender years and in attacks of recent origin. Variations in absorbability, variations in the resistance and reaction of tissues, variations in the antecedent conditions of the solids and fluids affected, must necessarily entail variations in the activities of remedies, but which are none the less remedies because their curative efficiency needs the presence of certain favourable conditions. This important truth is frequently overlooked and excellent and trustworthy remedies are occasionally discredited and discarded because they fail to cure under other conditions than those which determine their curative effect. This truth applies also to surgical methods and Professor Watson Cheyne[6] has observed: "The results of [surgical] treatment vary enormously in different cases."

The best results are obtained in the early stage and when there is always more or less ascitic fluid in the peritoneal cavity; in this stage there is "not necessarily any matting together of the intestines or shrinking or adhesion of the omentum and mesentery." But in advanced chronic cases you may find adhesions and fibroid induration of the omentum and mesentery—they become matted together, thickened, and shrunken. The intestines may also be bound together by new fibrous tissue, the tubercles also may be found coalesced into large masses undergoing caseation, and the mesenteric glands may be enlarged and caseous. When the disease has reached this stage the conditions are distinctly unfavourable both for surgical and medical treatment.

There is, however, this distinction between medical and surgical treatment—viz., that *medical* treatment cannot be begun too early, whereas *surgical* treatment may be. Professor Watson Cheyne[7] points out that it is an error to operate too soon, for if operation is done too early the disease is apt to return. He recommends that medical treatment should be given a reasonable time, which he estimates as from four to six weeks in the acute cases and from four to six months in the chronic ones. The operation he recommends is a very simple one; in cases with effusion without adhesions the abdomen should be opened in the middle line below the umbilicus and the fluid allowed to run out, aided by turning the patient on his side and "perhaps removing some of it by means of sponges," then stitching up the wound again. He does not recommend washing out the peritoneal cavity unless the effusion is purulent; in that case he advises the use of salt solution for this purpose and then introducing a little iodoform and glycerine emulsion into the cavity before closing it. He also urges that medical measures should be superadded to the surgical ones as soon as possible. Ebstein also supports Professor Watson Cheyne's opinion that "simple opening of the peritoneum" is best "without antiseptics and without washing out or drainage."

As to the cases in which operation should be performed authorities differ somewhat. Some writers draw a sharp distinction between cases of tuberculous peritonitis with ascites and the plastic form in which the peritoneal cavity is obliterated by adhesions, and they maintain that operative interference in the latter is "useless and worse than useless." Professor Watson Cheyne does not hold this view. He says: "All, even the gravest forms, show some good results, and there is *no* form in which we can say that laparotomy is absolutely useless." He states that he has "had success in the dry form as well as in the ascitic." He considers that the most favourable cases are those with *localised* ascites and the next those with *diffused* ascites. Then comes the fibro-adhesive form—when moderate in extent and no ascites. In cases where the abdomen contains large caseating masses successes are not frequent, but he maintains that they do sometimes occur. He does not consider the co-existence of early phthisis a counter-indication, but with advanced phthisis the results are not good. He is doubtful if laparotomy does any good in cases with intestinal ulceration. Then as to the proportion of cures in cases operated on. The same authority tells us that something like 75 per cent. are improved or cured by laparotomy, but he believes that if all cases were operated on, not merely selecting the most favourable ones, 50 per cent. would probably be the outside limit of improvement or cure. If, on the other hand, the more favourable cases only were treated by laparotomy the percentage of successes would be much higher. Second or third operations may succeed where the first fails and fluid re-accumulates. As to the *rationale* of the cure of tuberculous peritonitis by this simple surgical operation Professor Watson Cheyne admits that we are "absolutely in the dark." I think, however, his own suggestion is a reasonable one—viz., that after the removal of the fluid from the peritoneal cavity by incision, serum having anti-bacterial properties may be poured out and so the morbid process be arrested. For me the important fact is this, that apparently a *very slight change* in the environment of a pathogenic

[6] Harveian Lectures on the Treatment of Tuberculous Diseases in their Surgical Aspects, 1900.

[7] Ibid., p. 72.

organism is sufficient to arrest or nullify its activities and to lead to its disappearance.

I wish to put before you a somewhat more definite view as to how iodoform inunctions act in curing tuberculous peritonitis. When iodide of potassium is given by the stomach in a short time the presence of iodide can be detected in the saliva and in the urine. So when iodoform is rubbed into the skin of the abdomen in a young person it probably rapidly enters the blood and is, if regularly applied, continuously eliminated in the secretions, *including the secretions into the serous cavities*, and as these do not pass out of the body as the secretion of the kidneys does, they must, in course of time, become pretty richly charged with iodine compounds, at any rate sufficiently so to act as antitoxin to the tubercle toxin or as anti-bacterial to the bacilli. The first thing to be determined was whether the iodoform in the ointment when rubbed into the abdominal surface, was absorbed into the blood quickly and eliminated by the secreting organs such as the kidneys. Dr. Still has been so good as to make this observation for me at the Children's Hospital in Great Ormond-street. He found first, that iodoform ointment is excreted and easily recognisable in the urine as iodine or the salts of iodine; and, secondly, that the rate of excretion is very rapid. When half a drachm was applied to the abdomen it was recognisable in the urine four hours later, and apparently, after a second application, it reappeared in the urine in two hours' time. When only 15 grains were applied in another case it was recognisable in the urine 15½ hours after application. We have proof here of the rapidity with which iodoform is absorbed by the skin, enters the blood, and circulates as an iodine compound through the tissues of the body and is eliminated into the secretions.

Now, it is an interesting circumstance in this connexion that the idea that iodine is an antitoxin to tubercle has long been in the minds of physicians. I use the word "antitoxin" in a wide and general sense. I quoted in the beginning of this lecture Sir Thomas Watson's gloomy prognosis in cases of tuberculous peritonitis. I will now quote what he adds: "It has been thought that friction upon the abdomen with ointments containing iodine have done good, so that it will be well to make trial of such." Quite recently[8] two Italian physicians have recorded a case of tuberculous peritonitis in which a cure quickly followed the injection of a solution of iodine made by dissolving 15 grains of iodine and 30 grains of iodide of potassium in one and a half ounces of water. They injected first half a syringeful and then a syringeful in the genital region daily for 10 days and then on alternate days. After about a fortnight some of the fluid was withdrawn from the peritoneal cavity and examined bacteriologically, culture preparations were made, and guinea-pigs were experimented on, but no tubercle was found. After 10 weeks of treatment the patient was discharged cured.

While thinking over these cases I called to mind having read of a Swedish physician, Dr. Emil Nilsson, who reported that he had cured one undoubted case of tuberculous meningitis by rubbing into the shaved scalp an ointment of iodoform (1 in 10), and I found the following amongst my notes. The patient was a boy, eight years old, four of whose brothers and sisters had died from tuberculous meningitis and whose mother's family were phthisical. The symptoms were headache, torpor, convulsions, strabismus, and pyrexia. After other ineffectual treatment, the child becoming steadily worse, the head was shaved and iodoform ointment was rubbed in and an oilskin cap was put on. *This was done three or four times a day.* Improvement soon followed this treatment and consciousness was restored. There were, however, severe coryza, redness of the lips, and an irritable cough, the breath smelling strongly of iodoform. The ointment was discontinued and syrup of the iodide of iron was given. The unpleasant symptoms rapidly disappeared and the child was soon running about in good health.

In THE LANCET of Jan. 16th, 1897, p. 159, there appeared a paper by Professor Thoma of Geneva advocating the treatment of tuberculous peritonitis by creasote given in enemata. He gave at first five minims, increased afterwards to 15 minims, in four ounces of emulsified cod-liver oil, once daily. He continued this for some weeks and then interrupted the treatment for five or six days. He obtained good results. He remarks that "laparotomy is no doubt the best and quickest of all methods for dealing with these cases in which the peritoneum is covered with miliary tubercles, but," he very sensibly adds: "It is always a serious operation and one also which not every practitioner is competent to perform, and moreover parents often object, and physicians would gladly welcome other methods." The method which I followed in the three cases I have related to you of the outward application of iodoform ointment and the internal administration, three times a day, of small doses of iodoform and creasote, is, I think, more promising than surgical operations in those cases in which there is evidence of intestinal ulceration. The disease is thus attacked on both sides—the peritoneal and the intestinal—by anti-bacterial agents.

In conclusion, I would suggest that we should bear in mind that "antitoxins" are not limited to animal products and that we should not neglect the study of those which may be found in the mineral and vegetable world. We must not be led away by fashion and popularity to neglect every kind of remedial agent that is not a "serum" or an animal extract. The oldest and surest antitoxins we possess are mercury and quinine—one from the mineral, the other from the vegetable world. Their effects are better known, are more certain, and are more reliable than those of any other antitoxin at present known to us. That many animal extracts and animal fluids should possess active therapeutic properties, as many vegetable extracts do, was only to be expected. Let us by all means study their effects and learn the extent and the limitations of their uses; but do not let us neglect the study of other curative agents or consider them less important and less interesting because they are not derived from animal sources.

[8] Brit. Med. Jour., Epitome, Sept. 9th, 1899.

SOME PERSONAL EXPERIENCES OF THE EPIDEMIC OF ENTERIC FEVER AMONG THE TROOPS IN SOUTH AFRICA, IN THE ORANGE RIVER COLONY.[1]

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IT has been my privilege to be actively engaged in one of the most extensive and serious epidemics of enteric fever of modern times. Any value that the following recollections and reflections may possess must be attributed rather to their being the outcome of personal observation on the spot than to any particular qualification on the part of the observer other than may be claimed by a general hospital physician. I must thank the council of the Clinical Society of London most heartily for having done me the honour to ask me to open this discussion.

I wish to speak about myself as little as possible, but I cannot refrain from taking this opportunity of recording the extreme cordiality and courtesy with which I was received wherever I was sent by all ranks of the Royal Army Medical Corps, from the Surgeon-General downwards, and I cannot but believe that the intercourse, social and professional, that was established between the military and civil branches of our profession in the ups and downs of the great campaign may help to lessen the distance which has insensibly grown between them, to the detriment of the service on the one hand and to our loss on the other.

I propose to limit my remarks this evening to a discussion of the outbreak of enteric fever on the Orange River Colony side of the campaign, from the following points of view: (1) the origin of the epidemic; (2) the dissemination of the disease; (3) the general precautions taken to limit the spread of the disease; (4) preventive inoculation; and (5) some remarks on treatment in hospital.

THE ORIGIN OF THE EPIDEMIC.

It is, as may be expected, very difficult to assign a definite date for the first appearance of this insidious disease. But it was in the Modder river camp that we must look for the first cases, and I was given every facility by the colonel and officers of the Guards' Brigade Field Hospital, with whom I

[1] Being the opening paper of a discussion upon the Recent Epidemic of Typhoid Fever among the Troops in South Africa, read before the Clinical Society of London on March 8th, 1901.

was staying in February, 1900, for obtaining information on this point, and though unfortunately I did not compare the facts so obtained with the experience of the other field hospitals, yet I think that we may take the experience of the Guards as being probably typical of that of the whole force. From the admission and discharge book of the Guards' Hospital we find that enteric fever made its first appearance about Dec. 23rd. Four men of the same company, known to be friends, reported sick at about the same time and therefore they may be assumed to have been infected at somewhere about the same date. Up to this time dysentery was the predominant feature of the daily record of admissions, but after this date enteric fever almost replaced it. It must be remembered that the Guards arrived in South Africa in the latter part of November, 1899, and they proceeded after disembarkation straight up to Orange river station, where they halted for two or three days. The battle of Belmont was fought on Nov. 23rd, that of Enslin on the 25th, that of Modder river on the 28th, and that of Magersfontein on Dec. 11th. The Guards were in all these engagements. The long wait of the troops at the Modder began on Dec. 12th.

Now, of course, the date of infection of the first cases of enteric fever above alluded to must be entirely a matter of speculation. But putting the incubation period at the outside at three weeks we are forced to the conclusion that the enteric infection took place in the vicinity of Modder river. That the disease could have been imported from England or even from the Cape seems highly improbable. Modder river cannot be said to be a town or even a village. It consists of the station, a small hotel which was the headquarters of the staff, a store, and a schoolhouse, all near the station. There were several small farmhouses and two or three little hotels, mostly on the banks of the two rivers. The Modder and the Riet rivers join to form one river which retains the name of the Riet, and near this junction the railway crosses the Riet by a fine viaduct which was wrecked by the Boers. The two rivers are picturesque, with well-wooded banks, and serve in times of peace as a pleasure resort for the people of Kimberley.

Kimberley is regularly visited by enteric fever and it is therefore possible that the soil about Modder river station may have become contaminated. Jacobsdal is on the Riet about 10 miles above the camp, and it was known that there were cases of enteric fever there. There is therefore every possibility that men might have been infected by drinking the water of the Riet; but the main source of water-supply was the Modder, and there was no known contamination of it at this time in its course above.

As we shall see later, though it is impossible to acquit the water-supply of having a share in the origin, yet in all probability other agencies played a still more important rôle in the spread of the disease. It is important to bear in mind that this outbreak at Modder river was probably the direct antecedent cause of the great epidemic at Bloemfontein, and that the troops who entered Bloemfontein were deeply tainted with the disease.

The principal medical officer, Colonel Townsend, kindly allowed me to see the daily returns of enteric fever cases from Jan. 29th to Feb. 6th, 1900, and though I think that they understate the true state of the case, yet they give some idea of the rate at which the disease progressed in the early days. Up to Jan. 29th 97 cases had been reported and 17 deaths. On Feb. 6th the total had reached 156 cases and 27 deaths. These figures seem small, but they are fairly evenly distributed over the whole camp, indicating a widespread incidence. The general advance began about Feb. 11th, Kimberley being relieved on the 15th. Jacobsdal was occupied on Feb. 16th, and the next day Paardeberg was surrounded. 10 days were spent around Paardeberg which surrendered on the 27th. Bloemfontein was occupied on March 13th, about a month after the move from Modder river. The possibilities of infection on this long march, especially during the investment of Cronje's laager, must have been very considerable, but the fact of the widespread infection of the forces at Modder river must not be lost sight of, and there can be no doubt that men were falling out sick with the disease every day from the first day of the advance. The Bloemfontein epidemic should be regarded as the direct continuation of that begun at Modder river.

DISSEMINATION OF THE DISEASE.

An army consists largely of individuals of the age most vulnerable to enteric infection. It would be impossible to find a more suitable medium for the growth and dissemination of the bacilli than an army of 40,000 young men of ages between 19 and 25 years. Given therefore a preliminary case or two and from quite small beginnings indefinitely large and serious results may follow. We will now discuss at some length the various agencies by means of which this scourge may be spread over a camp, or by communication by man to man.

Water.—Here, as in England, the water-supply deserves our first attention. The water-supply of the camp at Modder river station included the Modder, the Riet, and certain wells. The river water was charged with thick yellow mud, which was so fine that it seemed never to settle and which rapidly clogged any filter. As will be explained further, the authorities used various means for purifying the water and even caused wells to be sunk, but all these efforts were rendered futile by the action of the soldiers themselves who appeared to prefer the untreated river water. One never passed the drift without seeing the men drinking from the river and filling their bottles. If, therefore, there was any enteric contamination of either of the rivers above, the water-supply must be held to have had a considerable share in the propagation of the disease. The soldiers were also bathing all day in the Modder, but below the point at which the water was drawn for drinking purposes. No doubt many men with the disease on them would be bathing at times and might thus infect their comrades. There was a well at the Station Hotel from which the Headquarter staff was supplied. This water looked clear and sparkling, but the chemical examination of it was less favourable than even of that of the Modder river itself.

At Bloemfontein the question of water-supply was a very pressing one and on my arrival there I was asked to serve on a board to inquire into the water-supply and drainage of the camps. It will be remembered that the waterworks at this time were in the hands of the enemy, so we had to rely entirely upon local sources of supply. These consisted of wells and the spring from which the city takes its name. The spring is situated to the south-west of, and close to, the town. It consists of a brick-lined reservoir of about 10 feet square covered in by a small red brick building, evidently an old engine-house. This all lies in a dip in the ground, and is inclosed by a paling. The veldt on this side of the city drains into two large natural ditches or dongas which receive in their course numbers of smaller ones. These two dongas meet not far from the spring to form one large watercourse which runs through the town. In ordinary circumstances this is dry, but in the rains it and its tributary dongas become rushing torrents, as we had ample opportunity of seeing for ourselves. On the banks of these dongas were several camps; for instance, not 400 yards away was a field hospital in which were 60 enteric fever cases and provided with open trench latrines. Moreover, a donga is a convenient dumping ground for all sorts of refuse. There was no evidence or suspicion that there was any communication between the spring and the donga which were at least 30 yards apart, but the field hospital above alluded to was ordered to be removed. Another action of this board was to cause the provision of bucket latrines to all hospitals and other camps; this was a very important and salutary measure. The water of the spring looked good, but by chemical analysis I found that it contained a suspiciously high percentage of absorbed oxygen and a trace of nitrites. In addition to the spring the city and forces had to rely on wells of which there were several. I have personal knowledge, however, only of those near our own camp, and these were of the tube variety sunk through over 100 feet of underlying rock. These wells gave a good supply of excellent water and from the manner of their construction they were free from any possibility of surface contamination. There were two of them at first and the engineers soon sank another. But these were not sufficient for the needs of the whole camp and so the spring continued to be used as well.

The water-supply from the Modder reservoir was re-opened in May when the epidemic was moderating and therefore can scarcely be looked upon as a factor of influence in itself either way. However, I made several chemical examinations of this water and found it very unsatisfactory, containing a large percentage of absorbed oxygen. Thinking that it might be contaminated in its course through the mains, especially after a long period of stagnation, I procured water direct from the reservoir and found it still far

from satisfactory. It is, however, quite probable that the contamination was of a harmless vegetable nature. All these chemical analyses are open to the objection that they give no hint as to the real nature of the organic material. They should be regarded as danger signals only; a personal examination of the source and course of transmission is of much more value, but unfortunately it is often impossible. It is quite obvious that a harmless water may give a very unsatisfactory analysis, while an apparently pure sample may contain many bacilli. Bacterial examinations can scarcely be expected under the circumstances, even if they were of much value.

The results of atmospheric disturbances.—A visitor to the camp at Modder river would not have to wait long to see a sandstorm, and one would be quite enough to satisfy any curiosity which he might have had. The veldt, generally speaking, is a plain of sand in so fine a state of division as to deserve the name of dust. After the rains there is a certain amount of loose vegetation which binds the sand, and rain and sun also harden the surface which is not, under ordinary circumstances, much affected by the wind; but by the incessant movement of horses, men, and vehicles the surface becomes so ploughed up that one might walk a mile or more ankle deep in soft reddish-yellow dust. From time to time a gale would spring up, and in a short time the whole camp would, on the brightest day, be buried in the darkness of a London fog, and sand and dust would cover everything and everybody. On still days even it was rare not to be visited by a number of small whirlwinds, called "sand-devils," which would pass slowly along sucking up quantities of sand and any light articles such as pieces of paper, carrying them to an astonishing height in the air and depositing them broadcast. The result of all this was that sand entered largely into every article of food, for the cooking was performed in the open air. The air at that time was intensely dry, so that it is not too much to suppose that all sorts of fæcal and urinary contamination must have been disseminated with the sand and dust. The same state of things obtained at Bloemfontein but in a minor degree, because the atmospheric conditions were generally quieter at that time of the year.

As a factor, then, in the spread of enteric fever we must by no means overlook sandstorms, which are everyday phenomena in many parts of the world where the British army may be sent, and it is quite a question whether they have not been more important factors in this war than the water itself. For that the water contained enteric fever bacilli is a matter of speculation, but that enteric stools and urine must have been deposited in the latrines and other places by men in the early stages of the disease there can be no reasonable doubt.

Flies.—As may be expected the conditions in these large camps were particularly favourable to the growth and multiplication of flies which soon became a terrible pest. I was told by a resident at Bloemfontein that these insects were by no means a serious plague in ordinary times, but that they came with the army. It would be more correct to say that the normal number of flies was increased owing to the large quantities of refuse, dead horses, &c., upon which they could feed and multiply. They naturally infest persons who are ill but seem to be peculiarly attracted to enteric fever patients, hanging in loathsome groups around their mouths and feeding-vessels. They were all over our food and the roofs of our tents were at times black with them. It is not unreasonable to look upon flies as a very possible agency in spreading the disease not only abroad but at home. Most of the temperature charts that had hung over the patients' beds were plentifully spotted with the excreta of flies and on my return home Dr. Schölberg was so kind as to make cultivations from them; but though he obtained cultures of many organisms he did not isolate the enteric fever bacillus, which circumstance, however, as he says, is not a matter for surprise considering the age of the material (three months at least).

It is a well-known fact that with the first appearance of the frost enteric fever almost rapidly disappears. The winter in South Africa is very mild compared with that which we are accustomed to in England. It is true that the nights are cold, sometimes to many degrees of frost. But the days are warm and bright; for instance, in my tent at midday the temperature was rarely below 70° F. and sometimes as high as 80°—in fact, about the temperature of an English summer day. It seems hardly credible that the almost sudden cessation of an epidemic can be due to the effect of cold upon the enteric fever bacilli only. But there can be no doubt in the mind of anybody who has been living on the open veldt as we have for three or four months that the flies are extremely sensitive to the change of temperature and that the cold nights kill them off rapidly. On consideration of these points it is surely justifiable to assign an important share to flies in the spreading of infection.

Personal infection from man to man.—Even in the best ordered London hospital it is unfortunately not uncommon to see enteric fever pass from patient to nurse and so to other patients. On consideration of the mode of life of the soldier on active service one is struck by the facilities which it offers for infection. Personal cleanliness is often an impossibility even for officers, much less for privates. There is barely enough water for drinking, let alone for washing purposes. The men slept 15 in a tent—when there were tents—and that fact presented considerable possibilities for infection. Far be it from me to say that the soldier is naturally dirty, but there can be no doubt that he has no idea of hygienic matters. This is shown forcibly by our experience at Bloemfontein. We had a large number of officers down with enteric fever, and as the nursing was at that time very heavy we were glad to avail ourselves of the help of the personal servants of these officers. They had not much to do, of course, with the direct nursing of their masters, but nevertheless a large number of them contracted the disease while with us. Of course some of them may have been infected at the same time as their masters. On the other hand, of our own orderlies, eight only took the disease in the whole seven months, though they were in constant attendance on bad cases. This may be due to protective inoculation, but it is also probably owing to their being alive to the ordinary precautions necessary. Bearing in mind the insidious mode of onset of enteric fever it is obvious that at any one time there must have been in these large camps, many men still at duty, with the disease on them, and therefore capable of giving it to their comrades in the close intercourse of camp life.

In conclusion of this part of my subject I cannot help remarking that, far from its being a matter of surprise that the epidemic was so severe, it seems to me, who have lived through it, a matter of congratulation that it was not more so, considering how many unavoidable causes were at work.

The probable effects of diseases antecedent to infection.—Here seems to be the place to discuss shortly certain points of more than academic interest, but for which clinical data are at present, so far as I know, lacking. It is known, experimentally, that the virulence of the bacillus becomes much increased by the presence in the blood of the toxins of other organisms, even of such as are found normally in the alimentary canal—as bacillus coli, for instance.[2] That is to say, an injection of a culture of enteric fever bacilli of slight, non-lethal virulence, may become greatly increased in virulence after the intra-peritoneal injection of streptococcus toxin. I quote from Dr. Horton-Smith's lecture[3]: "Sanarelli showed ..... that all that is necessary is to inject into a guinea-pig at first a dose not quite sufficient to be fatal. The animal recovers, but for some time afterwards attenuated typhoid bacilli may be found in the purulent focus at the seat of inoculation. If now, in this condition a dose of toxins either of bacillus coli or of bacillus proteus vulgaris be injected into the peritoneum the typhoid bacilli at once acquire fresh virulence, the organism is invaded afresh, and the animal dies from acute experimental typhoid fever. More important still, on two occasions he was able to determine such a relapse by injecting small quantities of the toxin into the stomach and so into the intestines, thus exactly reproducing the conditions occurring in the human subject." Here we have an important principle enunciated from the laboratory, but which opens up a field of speculation perhaps not altogether profitless. It is conceivable, nay, more than probable, that every man in these great camps, ourselves among the number, may have at times received into the alimentary canal enteric fever bacilli which may have grown and multiplied but without producing the characteristic disease. If this be so we may assume the existence of an immunity such as a previous attack might establish, or, as it is hoped, inoculation may imitate, or a natural immunity that we wonder at but cannot explain. It may be

[2] Horton-Smith: Goulstonian Lectures, 1900, in which this question is fully discussed, with many references.

[3] Op. cit., p. 35.

that such bacilli never get through into the circulation, but are passed away harmless. It is almost allowable to go a step further in speculation and to admit the possibility of the bacilli actually circulating in the blood without causing the disease. This is not so chimerical an idea as may appear at first sight, for it is now well known that persons who have had the disease may retain bacilli in their tissues for indefinite periods, years even, without harm to themselves.

But suppose, in the light of laboratory experience, some other toxin to come on the scene, then the bacilli acquire a new virulence and the disease may assert itself. Such a starting-point might be supplied by a simple attack of gastro-enteritis with the multiplication of bacilli normally existing in the intestines in small numbers. I need scarcely enlarge upon the possibilities of such a trouble among soldiers with bad teeth and improper food. The enteric fever epidemic has so overshadowed, in the public mind, all other medical ailments that we are apt to overlook the fact that dysentery or its milder forms included under the head of diarrhœa was quite as prevalent among the troops as enteric fever was. It would be quite difficult to find a man who had not had diarrhœa for some time, longer or shorter, during his stay in South Africa. We were struck by the fact that in many of our cases the onset of the enteric fever appeared in the course of dysentery. I strongly suspect that the two diseases may exist in the same patient and that such a conjunction is of very unfavourable omen. A widely distributed, almost universal, dysenteric diarrhœa, a daily exposure to infection by enteric bacilli, here are the elements necessary for a severe epidemic of enteric fever. Mark the importance of such a generalisation if true. Diarrhœa and dysentery in themselves proved as a rule fairly amenable to comparatively simple treatment, but in the light of the foregoing remarks the slightest diarrhœa becomes invested with a new importance and officers and men should be warned to apply for immediate treatment at a time when the simplest measures may have the greatest effect. This warning is sufficiently warranted by consideration of dysentery on its own merits, but it becomes doubly so if we look upon it as a co-worker for evil with enteric fever.

PRECAUTIONS TAKEN BY THE AUTHORITIES TO PREVENT THE SPREAD OF INFECTION.

At Modder river some of the regiments—the Guards for instance—made efforts in the direction of purifying the water. One tried boiling and clarifying with a small quantity of alum. Another used filters (Berkefeld), having as many as seven large ones going all day, but the water was so thick that the cylinders became clogged every 10 minutes by a thick coat of slime. The Guards' Hospital made use of Pasteur filters. After filtration the water was most palatable, but the objection to the boiling process is that in a tropical climate the water takes so long to cool and when cooled forms a very flat beverage. At any rate, the men preferred the river water in its natural state, and unless sentries were posted along the banks of the two rivers it is difficult to see how they could be prevented from drinking from them even if it were positively known that the water was polluted. Five or six wells were sunk along the bank of the Modder river, but they did not seem to come into general use. The latrines were of the open trench variety, carefully inspected daily, and with sentries over them to see that they were used properly. They were continually being filled in and fresh ones dug. The water-supply at Bloemfontein has already been discussed and the important measure of substituting the bucket for the open trench latrines has been mentioned. In our hospital and No. 3 General Hospital at the base, it was the custom to disinfect enteric fever and dysenteric stools with mercuric perchloride solution (1 in 250), to remove them to a shed set apart for the purpose, and there to mix them with sawdust for burning. At Bloemfontein the stools were buried after disinfection. On the whole it is difficult to see what more could have been done. It is easy to make suggestions, but after all the carrying of them out will ever be subservient to the exigencies of warfare.

PREVENTIVE INOCULATION.

The conditions of life of an army on active service, even in camp, may well fill the soul of the sanitarian with despair. It is therefore with hope that we turn to the question of the possible artificial immunity by inoculation which has naturally evoked so much interest in this war. The figures that I have to give on this question are small, but they possess the value of personal observation. The Portland Hospital went out with the usual *personnel* of a Base hospital for 100 patients as shown in the table.

TABLE I.—*Portland Hospital.*

—	Inoculated.	Not inoculated.	Enteric fever.	Died.
Medical staff (five)	4	1	0	0
Sisters (four)	0	4	1	0
Non-commissioned officers, orderlies, and servants (32) ...	24	8	9	1
Total strength (41)	28	13	10	1

Of the non-commissioned officers, orderlies, and servants 24 were inoculated by us on the voyage out, and four of the medical staff at the same time. All of these showed the local symptoms at the time—that is, pain, stiffness, and local erythema; 17 also presented well-marked constitutional symptoms, general feeling of illness, fever, and headache. Nine of the orderlies contracted enteric fever. It is significant that two of these had the disease very severely, and one of them died; both of these had refused inoculation. Of the inoculated cases five had the disease lightly and two rather severely. One of the sisters also had the disease rather badly and she had not been inoculated.

Figures relating to patients admitted to the Portland Hospital.—Including the members of our own *personnel* above mentioned we had under treatment at the Portland Hospital 232 cases of enteric fever, most of which came under our care while the hospital was at Bloemfontein. These were cases under our personal care and do not include among them convalescents who were entered in the admission and discharge book as patients, but who really only occupied beds for a short time until a train could take them to the base. If these latter were reckoned the percentages would of course be lower. The following table shows the numbers and mortality among inoculated and non-inoculated (the sister is entered as an officer).

TABLE II.—*Portland Hospital.*

Enteric fever.	Recovered.		Died.	
	Inoculated.	Not inoculated.	Inoculated.	Not inoculated.
Officers (34)	21	12	0	1 = 7·6%
Non-commissioned officers and men (198)	29	141	4 = 12·1%	24 = 14·6%
Total (232) ...	50	153	4 = 7·4%	25 = 14·0%

Of the total number 54 had been inoculated at home or on the voyage out. Of these four died, making a percentage of deaths among the inoculated of only 7·4 per cent. 178 had not been inoculated, and of these 25 died, a mortality of those not inoculated of 14 per cent. The general mortality from enteric fever with us was 29 deaths out of 232 cases, that is 12·5 per cent.

If we take the experience among the officers alone, the evidence in favour of inoculation is still more striking. The officers as a body have presented themselves for inoculation in much larger numbers relatively than the men. This idea is expressed in our figures, but of course they must be taken as suggestions only. Of 198 non-commissioned officers and men 33 only had been inoculated—that is, 16·2 per cent.; but of 34 officers (including the sister) 21 had been inoculated, or 61·7 per cent.; only one died, and he had not been inoculated. It is scarcely surprising, in view of these figures, that my colleagues and I feel favourably disposed towards inoculation. I saw myself many bad cases among officers and men, not in our own hospital, and I am aware that several have died who had been inoculated, but this does not alter the strong general impression, gained by clinical observation, that the disease takes a milder and more benignant course in the inoculated than it does in the non-inoculated.

General remarks on inoculation.—A few remarks on the general question of inoculation may not be out of place here. The material used is a sterilised pure culture of enteric fever bacilli in broth. The broth contains, therefore, dead bacilli and a toxin, which toxin, however, seems to be inseparable from the bodies of the dead bacilli, for a filtered broth possessed little toxic power. The supply we took out was given to us by Professor Wright and was prepared in his laboratory at Netley Hospital. The dose is regulated by the quantity necessary to kill a guinea-pig of a certain body-weight. This is generally about 10 centigrammes or from 15 to 18 minims. It is therefore a virulent poison. Injected in the body more or less severe local and constitutional symptoms ensue. The local symptoms consist of pain at the seat of puncture (most often the loin), erythema, and lymphangitis spreading from the wound. The constitutional symptoms may include rigors, fever, headache, a feeling of more or less severe illness, and often a tendency to faint, all lasting for from 12 to 24 hours. These symptoms vary very much in different individuals. In some there is merely a transient indisposition and a pain in the side; in others there may be high fever, a temperature of 103° F. or more, and all the appearance and sensation of serious illness. After inoculation, for an indefinite period, the blood may give the Widal serum reaction; in my own case it was present three months after, well marked, and was made out faintly 13 months after. The inoculated person is now supposed to be in a state comparable to that of one who has lately had enteric fever; that is, he has had artificially thrown into his circulation the same toxin which is produced in enteric fever and which possibly influences the activity and growth of the bacilli. He is also assumed to possess, as a result, a certain degree of immunity such as is believed to be acquired by the individual after an attack of the disease. The liability to infection by enteric fever is so variable that we are justified in supposing the existence of an equally varying degree of natural immunity in different persons. Moreover, the toxic saturation point, so to speak, is also a variable one, as is exemplified by the tendency to re-infection or relapse so often seen clinically. I am inclined to think that when the reaction to inoculation is slight it is probably because the person possesses a certain degree of natural immunity, while, on the other hand, a severe reaction indicates proportionate vulnerability to infection. In the former case if the inoculated person take the disease he has it lightly, but in the latter severely. If this be true the toxin reaction possesses a real value as a means of forecast. But again, if this reaction is any measure of the degree of immunity possessed by the individual, it is obvious that after a pronounced reaction one or more re-inoculations should be insisted upon. For all that is claimed for the process is a temporary immunity, and that often partial only. An attack of enteric fever itself does not do much more, for second attacks are far from uncommon.

Inoculation has not yet had a fair trial. Medical officers have been too uncertain as to its value to insist upon one injection even, let alone re-inoculations. It is to be hoped that the figures of the whole army, yet to be published, will indicate with some certainty its value in the direction of lowering the mortality, as those quoted in this paper appear to do; this will justify the medical profession in taking a more decided attitude on the question than it has at present been able to take.

REMARKS ON TREATMENT.

It may seem almost an impertinence on my part in this presence to make suggestions on treatment, but my doing so may serve as a protest against the attitude in the present day of some of the profession as well as the public in assuming that the care of enteric fever devolves upon the nurse rather than the physician. I have no hesitation in saying that in a disease in which danger threatens from so many points watchful supervision by the physician and prompt treatment of symptoms are not only productive of comfort to the patient, but are also contributory in a high degree to a successful issue. I am of opinion that there may be many worse places in which to undertake the treatment of enteric fever than a comfortable tent in the open air; in fact, there can be no doubt that a tent is superior to a great many buildings, and this should be borne in mind in view of newspaper criticisms on the failure by the medical authorities to secure all the available buildings in Bloemfontein.

Diet.—One of our earliest difficulties at Bloemfontein was the scarcity of fresh milk. It becomes necessary in such circumstances to fall back upon preserved or condensed milk. There are one or two forms of sterilised milk which are as good and palatable as the fresh article, but they are expensive. The condensed milks of numerous brands are excellent for ordinary use, but it is doubtful whether they possess much nourishing power in illness. The common sweetened form is most unsuitable; patients had as a rule an intense objection to it and it caused undoubtedly in some cases troublesome vomiting. The other forms of nourishment—e.g., arrow-root, beef-tea, &c.—we had in plenty. Our principle in dieting was to use all forms of nourishment liberally when, in our opinion, it could be safely done. Most of our patients were thin and ill-nourished before contracting the disease.

For myself I have for many years held the opinion that food may be used much more boldly in enteric fever than is the usual practice. The safety of its employment depends solely on the digestive power of the stomach. If that power is normal, as in many cases it is, meat, for instance, is not likely to reach the ulcerated small intestine in a form more dangerous than a glass of milk is. For milk naturally becomes a mass of curds in the stomach before peptic digestion takes place, and if this latter process is incomplete the undigested curds may be a real source of danger. It seems to me that one should be guided in this matter by the state of the tongue, the evacuations, and the appetite of the patient. If the tongue is moist and fairly clean, if there is no diarrhœa—that is, if the evacuations are no more in number than, say, two a day and fairly consistent—and if there be no tympanites, and the patient has a strong craving for food, it is probable that his digestion will be good and that a liberal diet, including, for instance, finely minced meat, and even thin bread-and-butter, will not only be safe but beneficial. On the other hand, the dry brown tongue, frequent curdy stools, and especially if there be tympanites and a disinclination for food, indicate a condition of stomach that makes careful dieting imperative. Frequent small feeds of milk, peptonised or diluted with barley-water, Benger's food, &c., must be used with care and the stools frequently inspected as a guide to the state in which the food reaches the intestines.

But the mechanical effects of undigested food in the small intestines are not the only ones to be feared. Experiment seems to show that the growth of the enteric fever bacilli is favoured and their virulence enhanced by the presence in the intestines of other bacteria, such as are encouraged by the presence of undigested food, and themselves tending to produce gastro-enteric trouble. So that a slight gastro-enteritis may have a grave effect on the course of the attack. This has been justly emphasised by Dr. Horton-Smith in his Goulstonian Lectures (1900).

Alcohol we used most sparingly and only in the severer cases in which we feared heart failure, not at all in the milder cases. The small rapid pulse we considered the best indication for its use, not high temperature. We rarely gave more than three or four ounces and never more than six ounces in the 24 hours. The long-enforced abstinence of the soldier from all forms of stimulant renders him rather susceptible to its influence as a drug.

Digitalis and strychnine were of the greatest value. In one or two cases gradually increasing doses of the officinal liquor strychninæ were injected hypodermically to the extent of 30 minims in the 24 hours.

Headache.—This was one of the first symptoms that called for treatment, and from five to 10 grains of phenacetin generally gave speedy relief, or, failing this, a somewhat larger dose of antipyrin. In not a few cases this caused during the sleep that followed a profuse perspiration with perhaps a slight fall in the temperature. Beyond the discomfort of this no ill result followed. In some cases, however, this sweating was so annoying that it became necessary to add from one-hundredth to one-fiftieth of a grain of atropin, which usually stopped it.

Insomnia.—One of the most troublesome symptoms was insomnia and the cry for hypnotics was a very common one. As a rule, all that was necessary was a small dose of phenacetin, which proved as useful for this purpose as it did for headache. To patients who were delirious and constantly attempting to get out of bed we did not hesitate to give hypodermic injections of morphine and in considerable doses, such as a quarter of a grain, repeated several times if necessary.

Mouth and tongue.—The care of the mouth and tongue

may appear a minor detail. It is not so in the estimation of the patient, and in the severer cases the dry, black, and cracked tongue and lips are more than a discomfort—the pain of taking food may positively prejudice the nutrition of the patient. Local treatment may be all that is necessary—mechanical cleansing or the use of mouth-washes, and of these we found one containing potassium chlorate, glycerine, and iron perchloride the most useful. A mixture containing potassium chlorate and sodium bicarbonate given three times a day had a remarkable effect in cleaning and moistening the mouth and tongue, so much so that its use became almost a matter of routine.

Intestinal symptoms.—Diarrhœa is, I believe, less a symptom than a complication and as such requires treatment. In the minds of some it is regarded as an effort of nature to remove deleterious matter. I cannot accept this view, for in all epidemics a considerable, if not a large, percentage of cases have no diarrhœa, and these are, as a rule, favourable cases, whilst among the worst cases diarrhœa is most common. This is shown by the fact that in our 29 fatal cases 21 of the patients had more or less severe diarrhœa. Diarrhœa may be due to general enteritis consequent on extension of inflammation from the ulcerated patches to the general mucous surface of the intestine, but it is probably more often caused by an ulceration of the large intestine. There is no doubt that such ulceration is often found post mortem in the colon, very commonly in the region of the cæcum, and in two or three of our necropsies there was found extensive discrete ulceration of the large intestine even to the rectum. The treatment of this diarrhœa was comparatively simple and undoubtedly of great benefit to the patient. Bismuth carbonate or salicylate and chlorodyne proved the most useful drugs, supplemented if necessary by suppositories of one quarter of a grain of morphine. In obstinate cases enemas of 10 per cent. boric acid solution often gave permanent relief, a further hint that the cause of this symptom was in the large intestine. Tympanites, always a dangerous condition, rarely gave us any trouble; it is best treated by boric injection. A small injection of about four ounces of water containing two grains of quinine and half an ounce of brandy would often cause the patient to pass flatus with great relief. Hæmorrhage occurred in 10 cases, on the average at about the eighteenth day. In some it was very severe and was repeated two or three times and was so profuse as to cause blanching. It was almost invariably accompanied by a sudden fall of temperature and invariably by a rise in the pulse-rate. In only one was it found after death, not having been suspected during life, with which exception it never proved fatal, and though four of these patients died ultimately no blood was found in the alimentary tract. Hæmorrhage always yielded to, or after, treatment, which consisted of a mixture containing oil of turpentine and tincture of hamamelis of each half a drachm, and tincture of digitalis three minims. This was given every two hours, or alternately every hour with a drachm of hazeline. One of us used hazeline alone—a drachm every hour—with apparently equally good results. At the same time morphine suppositories were administered. Under this treatment the stools rapidly ceased to contain bright blood, and in about 12 hours were free from blood altogether. Perforation occurred in five of our patients, averaging at about the thirty-fifth day. The earliest day of occurrence was the nineteenth and the latest the fifty-first day of the disease. The prognosis of this terrible accident is gloomy in the extreme, whether viewed from a medical or a surgical standpoint. There is reason to believe that in a very small percentage of cases the resulting peritonitis may become localised, but this happy event cannot be foreseen because it seems that the symptoms are rarely, if ever, proportional to the extent of the peritoneal inflammation. The symptoms of peritonitis in the course of enteric fever are not those of the same accident in a comparatively healthy person. The local pain, for instance, is rarely so severe and may be almost absent, so also is the characteristic position of body. Abdominal movement may be present and ample. The absence of liver dulness as a sign is frequently wanting. But a rise in the pulse and respiration rates and a sudden fluctuation of temperature are almost invariable and of these the former is the most constant. The diagnosis having been made the physician has two courses of treatment open to him, either equally unsatisfactory. The medical treatment amounts to the securing of absolute rest to the intestines in the hope of plastic localisation of the inflammatory process, and this, of course, is best obtained by the free use of opium. If the issue must be fatal this treatment is humane, if nothing else. The surgical treatment is as unsatisfactory as the medical, but nevertheless it is a question whether it is not the duty of the physician to recommend it. It offers a slender chance of recovery and it is possible that as time goes on this chance may be improved. The history of abdominal surgery warrants this hope. If surgeons had allowed the high mortality in the early days of abdominal operations to deter them from operating repeatedly that method of treatment would never have attained the position it now holds. It is difficult, however, to imagine a more unfavourable case for operation than a person suffering from enteric fever, at any date of the disease. The operation itself offers no peculiar difficulties, but in the two that were attempted by us we were glad to get the patient off the table alive. In neither case was the operation performed until from 10 to 12 hours after the first symptom, and it is, of course, possible that if it had been resorted to earlier the result might have been more favourable. The best one can say is that the patients both expressed themselves as feeling more comfortable and quite free from pain, but nevertheless they died four or five hours afterwards.

Harley-street, W.

THE CLINICAL AND PATHOLOGICAL RELATIONS OF THE CHRONIC RHEUMATIC AND RHEUMATOID AFFECTIONS TO ACUTE INFECTIVE RHEUMATISM.[1]

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A GLANCE through the table of contents of any modern text-book of medicine suffices to bring home to one the fact that in the matter of the classification of diseases we are living in a period of transition, a period of compromise. The primitive but natural plan of grouping morbid conditions according to the organs or structures specially implicated is still largely adhered to. On the other hand, we find evidences of the dawn of a more scientific system of classification, and we may reasonably expect that before very many years shall have passed away our knowledge will have so far advanced that it will be possible for works to be written in which the various manifestations of each separate morbid process will be so brought together as to form parts of a continuous and comprehensive description. Although this is even now possible to a limited extent it is clear that extensive gaps in our knowledge will have to be filled up before large portions of the field of medicine can be so treated and for the present the time-honoured plan must in many instances be adhered to.

By no department of medicine is this process of transition from one system of classification to another better illustrated than by that which we are this evening met together to discuss. Out of a primitive category of "arthritis" various distinct forms of articular disease have been successively differentiated. The first such sub-division occurred as long ago as the seventeenth century, when Baillou first called attention to the special features of acute rheumatism and drew a distinction between that disease and gout. The next advance did not come until the meeting of the eighteenth and nineteenth centuries, when the further differentiation was made of the conditions now known as rheumatoid or osteo-arthritis from rheumatism by Haygarth and Heberden in our own country and from gout by Landré Beauvais in France. Since then the advance has been more rapid and not a few special forms of articular lesions have been distinguished, such as gonorrhœal arthritis, the arthritides of certain specific fevers, the arthropathies met with in tabes dorsalis and other nervous affections, and the peculiar joint affection to which

[1] The opening paper in the annual clinical debate at the Chelsea Clinical Society on March 12th, 1901.

sufferers from hæmophilia are so liable. We have learnt, moreover, that not a few of these forms of arthritis are results of morbid processes in which the joints do not alone suffer and which have nothing in common beyond the fact that the joints may be implicated in their course.

The progress of our knowledge of the so-called gonorrhœal rheumatism is peculiarly instructive. We find it at first regarded as acute rheumatism accidentally associated with gonorrhœa or awakened into activity by the gonorrhœal infection. Next we meet with the suggestion that it is pyæmic in its nature or is an arthritis of reflex nervous origin set up as the result of urethral irritation. Lastly came an accumulation of evidence, ultimately amounting to complete proof, that this is a specific malady due to the dissemination of the gonococcus through the tissues, as evidenced by the detection of this micro-organism in the inflamed joints as well as in other structures which are liable to be implicated.

An inevitable result of the growth of knowledge along such lines and of the successive recognition of the individual diseases which had previously been grouped together in one common category has been the persistence and survival of notions regarding them which act as a drag upon further advance, and which even at the present day exert a profound influence upon the views which prevail both as to the nature and treatment of the maladies which have this in common—that they implicate the joints. The lay public is still dominated by the older ideas and looks with suspicion upon plans of treatment, both dietetic and medicinal, which do not conform more or less closely to those which have been advocated by successive generations of medical men as desirable for sufferers from true gout, and even in our own profession the notion is still widespread that in spite of fine-drawn distinctions gout, rheumatism, and rheumatoid arthritis are, after all, much of a muchness. We tend too much to assume that a joint affection is gouty or rheumatic in its origin unless it is clearly shown to be of a different nature. Surely the time has arrived when we may strive to shake off this obsession and to assign some definite significance to the terms "rheumatism" and "rheumatic."

Let us seek by careful observation and study to place the classification of diseases which implicate the joints upon a more scientific footing apart from preconceived notions as to their causal relationship to each other. In the course of such investigations any relationships which actually may exist will pretty certainly become revealed, whereas we shall speedily lose sight of such as are merely imaginary.

The terms "rheumatism" and "rheumatic" are perhaps more loosely used and more freely abused than any others in the vocabulary of medicine, but three main ideas appear to underly their various applications—namely, the ideas of pain, of causation by exposure or chill, and of implication of joints. In some so-called rheumatic conditions pain is the only symptom and the use of the word in this connexion is well expressed by the parody of a grammatical rule which I quote from Senator:—

> "Schmerzen, die man nicht definiren kann,
> Sieht man als Rheumatismus an."

The idea of chill and exposure underlies the use of such terms as "rheumatic facial palsy" and "rheumatic iritis" whilst gonorrhœal rheumatism may be again referred to as exemplifying the application of the name rheumatism to a joint affection presenting a certain resemblance to rheumatic fever. In rheumatic fever itself, which may be looked upon as the type of rheumatic affections, we find all the above ideas combined.

It would be a matter of extreme difficulty, well-nigh an impossibility indeed, to abandon the loose employment of these terms in ordinary practice. They have a firm hold upon the laity and the diagnosis is as often as not of the patient's own making. The medical man who attempted to dispense with them altogether would run the risk of being set down as a pedant by his professional brethren and by his patients as an ignoramus who does not know so simple a disease as rheumatism when he meets with it. It is equally out of the question to abandon the use of the term "rheumatism" as a scientific name for the general specific disease which manifests itself most characteristically in an attack of rheumatic fever, but which may assume a variety of forms aberrant from this. On the other hand, it would not seem to be too much to ask that, in medical literature at any rate, the use of the word should be limited to acute rheumatism and to conditions which are believed upon good evidence to be products of the same morbid process or sequelæ of its activity. Even this will be no easy matter. For example, what alternative name shall be assigned to gonorrhœal rheumatism, which certainly does not come within the above definition? The terms "gonorrhœal arthritis" and "synovitis" are far from satisfactorily replacing it, for they express only part of the truth and take no account of the abarticular lesions, such as iritis, pleurisy, myositis, and even gonococcal endocarditis, which may accompany the articular lesions, and, like these, are due to the dissemination of the gonococcus.

Hitherto the recognition of the various truly rheumatic lesions has been arrived at by clinical methods and is based upon their association or sequence. It is upon such grounds that we have become convinced of the frequent rheumatic origin of such affections as tonsillitis, erythema polymorphe, and chorea, but there are indications that before long a surer criterion may be available. There are nowadays comparatively few physicians in this country, and still fewer on the continent, who refuse to recognise the force of the arguments in favour of the view that acute rheumatism is an infective disease, and this quite apart from more recent bacteriological researches which seem to bring us much nearer to the ultimate solution of the pathology of this disease. I need not dwell further upon this point or discuss the question whether acute rheumatism is due to a specific micro-organism or may result from invasion by various pyogenic bacteria. There are some present here who are far more competent to speak on these points, and indeed the council of this society has assumed the infective nature of the disease in the definition of the subject which we are met together to discuss. There are probably few if any here present who will not be prepared to admit that rheumatism is much more than a disease of the joints in the course of which cardiac complications may or may not develop, but is rather a systemic malady in which heart and joints are alike apt to suffer and which may also implicate the skin, subcutaneous tissues, nervous system, and other structures of the body. Nor do I anticipate any opposition to the further proposition that no morbid condition is rightly termed rheumatic which cannot claim, with a good show of reason, to be a manifestation of this disease or a direct sequel of the mischief which it works in the tissues. Let us then proceed to the consideration of the question whether there are any morbid conditions to which the name of "chronic rheumatism" may be correctly applied.

That the rheumatic process may smoulder on for months and even years is beyond question. In children especially we not unfrequently see a veritable rheumatic cachexia, a succession of more acute outbursts being separated by periods of incomplete recovery, during which there may be evidences of still active endocardial or pericardial lesions, or successive crops of subcutaneous nodules may develop, fresh nodules making their appearance whilst those of longer standing are absorbed. In adults an attack of rheumatic fever may be preceded or followed by frequently repeated minor rheumatic manifestations. We know too that an acute attack may leave one or more joints more or less seriously damaged, and perhaps the seats of chronic synovitis. This is, however, the exception and not the rule. Some permanent deformity, such as ulnar deflexion of the fingers, may also follow from repeated attacks of rheumatic fever, and the frequently irreparable damage to the cardiac valves which it leaves behind it is a matter in the daily experience of all. On the other hand, cases are occasionally met with in which extensive crippling and deformity apparently result from an acute rheumatic attack. Cases of this kind occurring in children have been described by Sir Thomas Barlow, Dr. William Pasteur, and others, in which the crippling articular disease has been attended by other troubles which could, without hesitation, be looked upon as truly rheumatic. A similar condition in adults has been described by Jaccoud and other French and Italian authors under the name of "rhumatisme chronique fibreux" in which deformities are present similar to those associated with the name of rheumatoid arthritis. It is difficult to be sure how far the cases so described differ from those which we in this country are accustomed to look upon as examples of rheumatoid arthritis developing as a direct sequel of rheumatic fever.

This brings us by a natural transition to the consideration of the cases usually classed together under the name of "rheumatoid arthritis," the relationship of which to those of acute rheumatism will probably be the main subject here discussed. It would, however, be useless to enter upon such

a discussion without a preliminary consideration of what is meant by the term rheumatoid or osteo-arthritis. I confess to a very strong belief that under this name we are in the habit of confusing together several distinct forms of articular disease the study and discrimination of which offers a very promising field for research. Such discrimination must have its basis in morbid anatomy, aided by other means of pathological inquiry and aided, too, very materially by clinical observation. Indeed, I believe that it is mainly on account of the difficulty of making any adequate study of the pathology of these diseases that our knowledge concerning them still leaves so much to be desired. Let me endeavour to sketch briefly the clinical grounds for my belief that we are here dealing with no single defined malady.

In a female patient, about 30 years of age, or even younger, we witness the onset of a disease affecting many joints and which is specially apt to commence in those of the hands and feet. Of the finger-joints the first row of interphalangeal articulations are specially apt to suffer, they become the seats of fusiform swellings, which are apparently in part due to thickening of the joint capsules and in part to effusion into the synovial sacs. The wrist is apt to be affected early and its contour is lost; bursal swellings add to the deformity of the parts. No osteophytes can be felt, nor is it possible to make sure by radiography or other means that there is any actual enlargement of the ends of the bones. The affection of the joints has a strong tendency to symmetrical arrangement. The disease may progress rapidly, so as to involve almost every joint in the body, and the temporo-maxillary joints and those of the vertebral column are frequently attacked. Muscular atrophy is a pronounced feature, and muscular contracture may lead in time to conspicuous deformities. In some cases the general health is not very materially impaired, but in others the patients are decidedly ill. There may be marked and progressive anæmia and a considerable degree of pyrexia, either of the hectic type or taking the form of bouts of conspicuous febrile disturbance separated by afebrile intervals. The amount of pain experienced is also very variable and has no obvious relation to the severity of the articular affection. In some cases it is the most distressing symptom throughout. In others it is comparatively insignificant.

Turn now to the case of an older woman, say 60 years of age or thereabouts. She also has developed a multiple joint affection somewhat similar in its distribution but slower in its progress and differing markedly in its clinical features. In the hands the terminal inter-phalangeal joints are specially affected, but those of the first row may also be involved, and with peculiar frequency the carpo-metacarpal joints of the thumbs. The affected articulations are obviously enlarged, but the soft structures are but little thickened and the enlargement is clearly due to an increase in size of the ends of the bones. The swellings have not a fusiform shape, but commence somewhat abruptly near the joints. In the knees similar changes with lipping of the bones is met with and some crackling or creaking is clearly felt on movement. The general health is not seriously impaired and it may be confidently predicted that the progress of the malady will be only very gradual. This is not merely a further stage of the condition previously described, for it may be watched commencing with its characteristic features *ab initio*, nor are the differences simply due to the age of the sufferer, seeing that cases of the former type may be met with at an advanced age and those of the latter kind at an unusually early period of life. For convenience of reference these may be referred to as the "fusiform" and "nodular" forms respectively.

Take yet a third case in a younger patient. Here we find but little enlargement of the affected joints, but the deformities due to muscular contracture become rapidly developed and grotesque deformities of the hands result with almost complete fixation. Cases of this third or crippling form *par excellence* are happily much less common. They may be recognised even in their early stages and the outlook in such cases is specially gloomy. One of their characteristic features is the formation of small osteophytes about the affected joints which may be felt as sharp projections beneath the skin.

In addition to such polyarthritic forms there is yet a fourth group of cases in which only one or two joints are involved, as, for example, in the hip-joint affection of elderly people.

The question naturally arises how far the members of these several groups differ in their morbid anatomy and to this question it is difficult to return a definite answer at present. The classical description of the changes in the joints characteristic of rheumatoid arthritis is to be found in every work treating of the subject, and every medical student is taught how the cartilages become fibrillated and eroded and ultimately entirely worn away; how the articular ends of the bones become condensed, ivory-like, and grooved by friction; and how osteophytic outgrowths are formed around the articular surfaces. Of the accuracy of the description there can be no question, but it is mainly based upon the examination of cases of the senile class, and it is permissible to doubt whether it applies equally to all the varieties the features of which I have endeavoured to sketch.

It is probable that some of those who are present this evening may have had opportunities of examining post mortem cases of what I have spoken of as the fusiform group and can supply information bearing upon this question. Observations made upon the younger patients and in the comparatively early stages of the malady would be of special interest. The opportunities for such examinations are peculiarly limited, although the disease is only too common, and it is possible to have carried out a large number of necropsies, in a London hospital at any rate, without having ever had such an opportunity. It is, indeed, remarkable how seldom such patients succumb in our hospitals to acute intercurrent diseases.

The condition described as rheumatoid arthritis in children resembles in many respects the fusiform rheumatoid arthritis of adults. In their clinical aspects the joint lesions are very similar, and in such cases a fatal ending at a comparatively early stage is not very uncommon. In them the changes found in the joints post mortem certainly do not conform in the least to the classical description. The articular cartilages may be intact or may show some pitting at their edges, apparently due to pressure exerted by swollen synovial processes. The chief lesion observed is thickening and undue vascularity of the synovial membrane. There appears to be no tendency to osteophyte formation. I am here quoting from Dr. G. F. Still's description, to the accuracy of which I can myself bear witness, as I have seen the specimens upon which it is based. I strongly suspect that a very similar condition of the articular structures exists in the earlier and more acute stages of the fusiform rheumatoid arthritis of adults.

In a case of the extremely crippling kind in which Dr. Still and I had the opportunity of making a post-mortem examination, the disease, which had been in progress from the age of 17 to that of 37 years, had caused fixation of every limb, so that the patient had been unable to move hand or foot. The case had been diagnosed as rheumatoid arthritis by several highly competent observers, but the conditions found were distinctly at variance with the teaching that one of the special features of the malady is the absence of bony ankylosis, at any rate in the joints of the limbs. In every joint examined some such ankylosis had occurred—not a complete fusion of the articular surfaces, but the formation of bridges of cancellous bone which could be broken down by a slight exercise of force. In the knee-joint the cartilages were destroyed and the bony bridge occupied the position of the cruciform ligaments. Around the articular surfaces were numerous small osteophytes.

In some cases of the nodular kind the changes met with in the finger-joints and elsewhere have conformed more closely to the classical description. It has been suggested that the changes ordinarily described as characteristic of rheumatoid arthritis are not the products of a single definite morbid process, but are merely lesions which are apt to occur in joints which have become the seats of chronic disease of various kinds. There is much to be said for this view. We shall have the opportunity later of hearing the views on this subject of Mr. Arbuthnot Lane who has called attention to the part played by mechanical wear and tear in the production of lesions of this character. Again, as Mr. A. A. Bowlby has pointed out, similar changes in the bones and cartilages are met with in the joints of bleeders who have suffered from the special form of arthritis to which they are liable and which is believed to have its origin in hæmorrhages into the articular cavities. If this idea be well founded we might expect to find the classical changes in the joint structures in any case of rheumatoid arthritis of sufficiently long standing, and their presence will afford no evidence as to the identity of the morbid processes at work in the different cases.

I take it that the main question which we are invited to

discuss this evening is—Whether or no rheumatoid arthritis, or, as I should prefer to say, any of the diseases included under that name, stands in any direct relationship to acute rheumatism. The existence of such a relationship has been warmly maintained by some and equally warmly contested by others. Doubtless we have representatives of both camps among us this evening and we may rely upon full justice being done to the arguments in favour of either view. If such a direct relationship exists we should expect the onset of rheumatoid arthritis to be frequently preceded by an acute or subacute rheumatic attack. It is true that a history of antecedent rheumatic fever, recent or remote, is not very unfrequently forthcoming in such cases, as must inevitably be the case with two maladies both of which are so common. Moreover, the onset of rheumatoid arthritis in its more acute forms may be attended by a considerable amount of febrile disturbance, and at this stage it may be mistaken for rheumatic fever, especially as the initial febrile stage may be followed by a temporary improvement. I believe that this accounts for some of the cases in which a history of recent acute rheumatism is obtained. Lastly, as has been already mentioned, an undoubted attack of rheumatic fever is followed by a chronic joint affection clinically indistinguishable from the fusiform variety of rheumatoid arthritis. A similar result may follow an attack of gonorrhœal rheumatism or even gout, and the question arises whether such secondary rheumatoid arthritis is merely a continuation of the former malady or affords an example of a second disease developing in a subject weakened by the antecedent attack, just as tuberculosis may appear as a sequel of measles. Such cases constitute a very small proportion of the total number. In the great majority of instances rheumatoid arthritis of any form appears as a primary malady and presents its characteristic features from the onset and more often than not the patient has not previously suffered from any troubles which are suggestive of a truly rheumatic origin.

Next as to the development of abarticular rheumatic manifestations in the course of rheumatoid arthritis. In this connexion it should be borne in mind that rheumatoid arthritis in all its forms is most apt to appear at a period of life at which the abarticular manifestations of true rheumatism tend to be less conspicuous. Some of these are almost confined to childhood and puberty and even endocarditis and pericarditis diminish notably in frequency as age advances. Organic cardiac murmurs are undoubtedly present in some cases and some published statistics place their frequency unexpectedly high. Some such murmurs clearly date from attacks of acute rheumatism at some period more or less remote, others may be ascribed to atheromatous changes. Each individual example requires to be considered upon its merits and impressions based upon observation and experience are of at least equal value with statistics Such experience as I have had leads me to range myself with those who hold that sufferers from rheumatoid arthritis show no greater liability to valvular disease than others not so afflicted, and I imagine that few medical men when watching such a case anticipate as a probable event the development of organic heart disease in its course.

In children with so-called rheumatoid arthritis Dr. Still has almost constantly found pericardial adhesions post mortem, but the active pericarditis in which such adhesions presumably have their origin has passed unnoticed. In the crippling case to which reference has been made, in which there was bony ankylosis, the pericardium was also adherent, and it would be interesting to know whether this is a common feature in adult cases. Subcutaneous nodules which bear a striking resemblance to those met with in rheumatic children are occasionally present in cases of rheumatoid arthritis. Those which I have seen have not had the transitory existence of the small deposits of lymph in the subcutaneous tissues of rheumatic patients, and it must not be forgotten that at the period of life at which they have been observed true rheumatic nodules are practically unknown, being confined to childhood and early adult life. We may look forward to hearing Dr. Hawthorne upon this point, for it is one to which he has paid special attention.

The question is one which can only be settled by pathological means, such as bacteriological examination, which in the case of rheumatic nodules has already yielded most interesting results in the hands of Dr. F. J. Poynton and Dr. A. Paine. Indeed it is quite possible that before long bacteriology may throw such light upon the whole problem of the relation of rheumatoid arthritis to rheumatism as will render further discussion of the question futile. Meanwhile it appears to me that the evidence adduced in support of the common causation of rheumatism and any variety of rheumatoid arthritis is not of such a nature as to carry conviction.

If rheumatoid arthritis is not a rheumatic affection, what, then, is its pathology? Clearly this question can receive no satisfactory answer until we know for certain whether we are dealing with one disease or with several diseases. It is quite possible, and even probable, that the several forms differ entirely in their pathology, and that a theory which is true for one form may be wholly incorrect as far as another is concerned.

The nodular or senile cases, with their slow progress and essentially chronic characters, present many features which suggest that the lesion present is of the nature of a degenerative or trophic change in the joints, comparable to the degenerative changes met with in other structures. Such a view of its nature receives support from the striking resemblance of the articular lesions here seen to those met with in the joints of sufferers from certain nervous diseases such as locomotor ataxy and syringomyelia. In these cases, at any rate, there is nothing to suggest a rheumatic origin, and it is in these that the effects of mechanical influences are most marked.

We shall have the advantage of hearing Dr. G. A. Bannatyne, whose name is so closely associated with the bacteriological investigation of the disease under discussion, and who, in collaboration with Dr. A. S. Wohlmann and Dr. F. R. Blaxall, has isolated a definite bacillus from the synovial fluid in a number of cases—a bacillus which they have altogether failed to find in the joints of sufferers from other forms of articular disease. On clinical grounds we should expect that, granting that certain cases of rheumatoid arthritis are infective, the cases concerned would be those of what has been spoken of as the fusiform type. In the similar affection met with in children enlargement of the spleen and lymphatic glands is frequently observed and it is in such cases that the constitutional symptoms tend to be most pronounced.

Among the predisposing causes of the more acute cases debilitating influences take the first place. The onset may follow upon a period of ill-health and attendant lowered vitality, and of late years an attack or a series of attacks of influenza has often appeared to be the predisposing cause of the onset or of the reawakening of the disease from a dormant condition.

The relation of rheumatoid arthritis to gout is another subject of considerable interest and not a little difficulty. Sufferers from chronic gout may exhibit joint changes which in their clinical features bear a close resemblance to those of rheumatoid arthritis of the nodular kind, as, for example, the enlargement of the terminal joints of the fingers known as Heberden's nodes. On the other hand, I can see no valid ground for the belief that gout plays any part in the causation of the more acute forms.

There is certainly still much room for the accumulation of facts, both clinical and pathological, bearing upon the nature of rheumatoid arthritis. Let us first make sure that when we employ this term or any other terms which may eventually replace it we are referring to some one definite morbid condition and not to a congeries of diseases only superficially alike. Then by the diligent piling up of fact upon fact, a task which will provide employment alike for the clinician, the bacteriologist, and the morbid anatomist, we may hope to construct a foundation so solid that the superstructure of theory raised upon it will be capable of resisting any strain to which it may be subjected. In the present state of our knowledge one is justified in taking up an expectant attitude in this matter, and I for my part feel certain of one thing only, which is that I know far less about the pathology of rheumatoid arthritis than I thought I did ten years ago.

Chandos-street, W.

LANCASHIRE AND INEBRIATE REFORMATORIES.—On Feb. 28th a meeting was held at Preston of the Lancashire Inebriates Acts Board, at which a scheme and plans for the reformatory buildings to be erected on Brockhall Farm, Clitheroe, were approved. The "home" system has been decided on in preference to a large central block, each home to contain eight inebriates, with a day-room, attendant's room, scullery, store, bathroom, bootroom, and a separate bedroom for each inmate.

THE TOXICOLOGICAL DETECTION OF ARSENIC AND THE INFLUENCE OF SELENIUM ON ITS TESTS.

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OF the various tests for the detection of arsenic in minute traces the "Marsh," the "Reinsch," and the "Gutzeit" tests are the most commonly employed. Each test has its respective advantages, but for delicacy and reliability I think that toxicologists would undoubtedly place the carefully applied "Marsh" test easily first, and that next would come the "Reinsch" test and then the "Gutzeit." Certainly by the "Marsh" test one can detect almost infinitesimal amounts of arsenic, even as small as $\frac{1}{100}$th of a grain of arsenic tri-oxide per gallon, and the "Reinsch" and "Gutzeit" tests would not approach this delicacy as ordinarily applied. I propose in this paper to consider some points of importance in connexion with the "Marsh" and "Reinsch" tests and also the influence of selenium on them.

I have adopted the following neat and convenient method of performing the "Marsh" test. Perfectly pure zinc and sulphuric acid are used to generate the hydrogen in a flask provided with an exit tube which is filled with dry calcium chloride, and the escaping dry gas passes through hard glass tubing which has been drawn out into a long narrow portion. The portion of tube which is heated to redness lies within a clay chimney and rests on a clay tube, and the solution to be examined is introduced through a funnel, and the heating continued for one hour. Small amounts of pure sulphuric acid are added from time to time so that a constant slow evolution of hydrogen may continue. If arsenic be present it will deposit on the portion of the tube beyond and commencing at a point about one inch from the clay chimney. It is found that with the purest zinc, quite free from arsenic, and with the purest sulphuric acid, a white deposit is obtained on that portion of the tube which is nearer to the chimney than the arsenical deposit. This deposit occurs with the zinc and acid alone—i.e., in a blank test; also it is much more marked often when various substances are being tested, whether arsenic be present or not. Toxicologists have long been familiar with this white deposit, but I do not think that its true nature has been demonstrated up to the present.

I. *On the nature of the white deposit formed during the "Marsh" test.*—This deposit is sulphur in an amorphous form. If a large amount of pure zinc be used in the "Marsh" test and perfectly pure acid a fairly considerable white deposit is obtained. The deposit is amorphous on microscopic examination. It is soluble in carbon-di-sulphide. If the portion of the tube containing it is fused with pure "fusion mixture" to which has been added some potassium nitrate, on dissolving the mixture in dilute HCl and adding barium chloride solution a definite precipitate of barium sulphate is obtained (I may say that in this test the freedom from sulphur of the chemicals used was first demonstrated). The above tests prove that the deposit is sulphur. It is no doubt formed by the presence of very minute traces of zinc sulphide, which occur in even the purest zinc. The solution of the zinc sulphide in the acid causes the evolution of very minute traces of sulphuretted hydrogen which are decomposed into hydrogen and sulphur in the heated part of the tube, and the sulphur deposits on the portion just outside the clay chimney. I was able to confirm the above in an interesting way by adding a few drops of very dilute ammonium sulphide solution to the contents of the flask in a blank "Marsh" test when very soon a large white deposit formed in the same portion of the tube which had all the characters of the white deposit above described.

II. *The prevention of the white deposit.*—It at once occurred to me that to prevent the appearance of the white deposit one must introduce into the flask some substance which will fix the small amount of sulphuretted hydrogen which is formed. A salt of mercury (because of the insolubility of mercuric sulphide) was used—viz., mercuric chloride. It was found effectually to prevent the formation of the white deposit, but it is at once *prohibited* from use by the fact that it also prevents the evolution of arseniuretted hydrogen if arsenic be also added to the contents of the flask for then no mirror results. This was to be expected from the chemistry of the "Gutzeit" test. I next tried lead salts. These could not be placed in the generating flask because of the action of sulphuric acid on them forming insoluble precipitates, so (1) lead carbonate was placed in the drying tube with the calcium chloride and the test performed. It was found that still a very small deposit of sulphur occurred, but the formation of the arsenic mirror was not interfered with at all should arsenic be present. (2) The evolved gases were passed through potash bulbs containing solution of lead acetate in order to absorb the H_2S evolved, then through a calcium chloride tube, and then through the heated tube. It was found that this answered admirably. No white deposit of sulphur occurred in the portion of tube just beyond the clay chimney, while at the same time the lead acetate solution did not interfere in the very slightest with the delicacy of the test when minute quantities of arsenic were introduced into the flask. The white deposit above described and its nature and prevention are of scientific rather than practical importance. Its presence does not interfere at all with the observation of the arsenical (black) mirror if present, so that I should not advise as a routine practice in the "Marsh" test the passage of the evolved gases through lead acetate solution.

III. *On the influence on the delicacy of the "Marsh" test when substances are introduced into the heated portion of tube (within the clay chimney).*—I think this is of extreme importance to the toxicologist, and it has certainly not been recognised that finely divided substances in the heated portions of tube have a very great influence in preventing the deposition of the arsenical mirror. I first recognised this fact in preparing a series of standard "Marsh" mirrors with solutions of arsenic of varying strengths, when it was at once found that the mirrors were very much smaller if a mixture of carbon and dry sodium carbonate were placed in the heated part of tube immediately over the flame. Indeed, the mirror may be entirely prevented from appearing. In many of the standard descriptions of the "Marsh" test it is recommended to use a mixture of carbon and dry sodium carbonate in the heated portion of the tube in order, so it is said, "to retain any sulphur which may be coming off and which will interfere with the deposition of the arsenic." As a matter of fact, the mixture of carbon and sodium carbonate itself interferes with the deposit of the arsenical mirror and I can positively assert that this mixture prevents as much as nine-tenths of the arsenic from depositing in the mirror form when minute quantities of arsenic are being tested for. It at once suggested itself to me that one of the bodies, the carbon or the sodium carbonate, was responsible for this, but to my astonishment I found that each is able to prevent the formation of the arsenical mirror. Thus, if the heated portion of the tube (within the clay chimney) is filled with either dried sodium carbonate or carbon, and in either case half a milligramme of arsenic tri-oxide introduced into the flask, in each case almost the whole of the arsenic is retained and scarcely any arsenical mirror results, while with nothing in the heated portion of tube a very large mirror resulted with half a milligramme of arsenic.

It next occurred to me to try some inert finely divided substance in the heated portion of the tube instead of carbon or sodium carbonate. Fine sand was used which had been previously ignited. The astonishing fact was demonstrated that sand in the heated portion of the tube (within the clay chimney) caused the retention of almost all the arsenic and only a very minute mirror was obtained. In this experiment half a milligramme of arsenic tri-oxide was introduced into the flask. The sand became perceptibly darkened in colour but no amount of heating would cause it to give up its absorbed arsenic. It seems, therefore, that any finely divided heated substance may cause the retention of the arsenic in the "Marsh" test and perhaps the explanation is of a physical rather than a chemical nature. At all events, the fact is of extreme importance to every toxicologist. The moral is that in performing the "Marsh" test no substance at all should be placed in the heated portion of the tube or the deposition of the arsenical mirror will be prevented.

IV. *On the influence of selenium on the "Reinsch" and "Marsh" tests.*—If the "Reinsch" test be performed on a dilute solution of selenium (10 milligrammes of selenious acid were used) a dull greyish deposit forms on the copper which

if cleansed as usual and ignited in a small test tube gives a white sublimate indistinguishable macroscopically from arsenic tri-oxide, but under the microscope the sublimate does not show the characteristic octahedra and tetrahedra of arsenious acid. If the "Marsh" test be performed on a dilute solution of selenium (10 and 20 milligrammes of selenious acid were respectively used), as correctly stated by Dr. F. W. Tunnicliffe and Dr. Otto Rosenheim,[1] no deposit occurs in the tube at the site where the arsenical mirror usually forms, and the selenium deposits in the flask as a dark reddish precipitate and inhibits the evolution of the hydrogen to some extent.

Now although selenium does not give any result *per se* with the "Marsh" test in the absence of arsenic, yet the astonishing fact was demonstrated that it has a most decided influence on the nature of the mirror if arsenic be also present.

Experiment 1.—If half a milligramme of arsenic tri-oxide be introduced into the flask with 10 milligrammes of selenious acid the resulting mirror is quite different in appearance from that obtained from the arsenic alone. Thus the proximal half of the mirror is of a vermilion red colour, while the distal portion has the usual appearance of the arsenical mirror; but much of the arsenic appears to be retained and the true arsenical portion of the mirror is only about a tenth of the size of that obtained from the same amount of arsenic with no selenium (*vide* Fig. 1).

Experiment 2.—A fresh experiment was performed with five milligrammes of selenious acid and half a milligramme of arsenic tri-oxide; the resulting mirror was of the same nature as the preceding, but the true arsenical portion was larger, being about one quarter the proper size, and the proximal portion was still of a vermilion red colour (*vide* Fig. 2).

Experiment 3.—A fresh experiment was performed with half a milligramme of arsenious acid and one milligramme of selenious acid in flask. Here the influence of the selenium was only slight. No red was detected in the proximal portion of the mirror, and the arsenical portion of the mirror was about from one-half to two-thirds as large as that

FIG. 1.

FIG. 2.

FIG. 3.

FIG. 4.

Fig. 1. Mirror from one-half milligramme of As_2O_3 and ten milligrammes selenious acid. Fig. 2. Mirror from one-half milligramme As_2O_3 and five milligrammes of selenious acid. Fig. 3. Mirror from one-half milligramme As_2O_3 and one milligramme selenious acid. Fig. 4. Mirror from one-half milligramme As_2O_3 alone. The solid black shows the extent of the arsenic mirror. The vertical shading shows the vermilion selenious portion and the horizontal shading the brown selenious portion.

obtained without any selenium present. Still, there was a definite difference observable between the mirror obtained with half a milligramme of arsenic tri-oxide and one milligramme of selenious acid and one from half a milligramme of arsenic tri-oxide alone. In the former case a proximal brown portion of about half an inch in length preceded the true arsenical mirror (*vide* Figs. 3 and 4).

The above results are of great interest, for they prove that if it is granted, as has been suggested, that the recent beer-poisoning epidemic has been due to selenium and not arsenic, then certainly many instances must have occurred where the selenium had been found in amounts 20 or 10 times as great as the arsenic, as in Experiments 1 and 2 above, and if so, then most characteristic and peculiar mirrors would have been obtained by the "Marsh" test, applied, as it certainly has been applied, to many of the contaminated beers and sugars.

Now it has been my privilege to examine many of the samples of contaminated beer from Manchester and the district round, and from all these samples by the "Reinsch" test characteristic octahedral and tetrahedral crystalline sublimates were obtained of arsenic tri-oxide evidently (since selenium does not give the characteristic crystalline sublimate). By the "Marsh" test in no case were the curious characteristic mirrors obtained, such as are given by selenium with small amounts of arsenic (Experiments 1 and 2, Figs. 1 and 2). Hence I think that these facts conclusively prove that the poisoning could not have been due to selenium primarily and arsenic secondarily, as has been suggested, for the mirrors obtained by the "Marsh" test on the contaminated samples would have at once demanded attention by their most remarkable appearance.

St. Mary's Hospital, W.

[1] THE LANCET, Feb. 2nd, 1901, p. 318.

SEPTIC DISEASE IN GRADUATED ATTACKS IN THE SAME PATIENT.

BY J. SNOWMAN, M.D. BRUX., M.R.C.S. ENG., L.R.C.P. LOND.

THE following case affords an interesting study of variations in the development of the same disease in the same individual at different times but under similar predisposing circumstances. The facts concern a healthy female who was 34 years of age when her present history began five years ago. She was then lying-in with her sixth child and had three or four severe rigors between the third and sixth days. As these rigors, in which the temperature rose to 105° F., were not accompanied by any untoward abdominal or uterine symptoms, and as convalescence was established normally, the condition was regarded as one of those vague cases of puerperal pyrexia of uncertain origin. These cases, which have been variously attributed to milk fever or nervous disturbance, are now considered by the best authorities to be septic in nature and are to be interpreted pathologically as the successful resistance of the healthy organism against an attack of the micrococci of septicæmia.

The patient became pregnant again towards the middle of January, 1898. After seven weeks' amenorrhœa she aborted. The abortion was attended by severe hæmorrhage so that no traces of the embryo were to be detected in the portions of the ovum which were expelled piecemeal. When the patient was first seen the uterus could be felt midway between the pubes and umbilicus; it was soft and compressible and evidently filled with blood-clot. The temperature was 102° and the cervix admitted one finger, but the internal os was closed. The blood contained in the uterus was expressed and its cavity irrigated with Condy's fluid. For two days all went well, but on the third day the patient had a rigor, with a temperature of 104°; there were abdominal pains, but no real tenderness was present. The rigor was followed by profuse sweating. The external os still admitted one finger, and the uterus was enlarged, its contents being chocolate coloured. Irrigation of the uterus was continued. The temperature became normal during the day, but on the following evening there was another rigor and the temperature rose to 105°. The uterus was then thoroughly explored with the finger, counter pressure being made over the hypogastrium. By this manœuvre a few shreds were removed. The next few days were uneventful, but bruises gradually appeared on the hypogastrium where the fingers had exerted pressure and on the vulva from the pressure of the thumb of the examining hand. The temperature rose to 103° and these bruises, four in number, became large inflammatory indurated swellings. The uterine condition was now quite healthy, but three of these local swellings suppurated and required free incisions to give vent to the pus. After

this the temperature gradually fell and the patient soon recovered.

These facts may be interpreted to mean that the patient was threatened with septicæmia in this abortion, as she had been in her previous confinement. It may be that her tissue resistance would again have repelled the attack of the streptococci; it may be that the digital curetting of the uterus after the second rigor saved the situation. In any case the micro-organisms of suppuration were in the blood producing a toxæmia, but instead of proceeding to a general pyæmia they spent themselves in the *loci resistentiæ minoris* afforded by the bruised areas of the hypogastrium and vulva, and there their specific action was exerted.

The next pregnancy of the patient also terminated abruptly in an abortion, but unfortunately the septicæmia with which it was again attended did not abort. The patient's last menstrual period ended at the beginning of September, 1899. She then had amenorrhœa for five weeks, when a sanious discharge made its appearance and lasted for three weeks, culminating in the expulsion of a clot on Nov. 5th. On that day the patient experienced a severe rigor. On making a vaginal examination the following day it was found that the cervical canal was open and the uterus distended to the size of a three months pregnancy. The temperature was then 101°, but that night there was another rigor. At 6 A.M. on Nov. 7th a complete abortion took place, the ovum being expelled entire, and it was a perfect specimen of six and a half weeks' growth. The temperature was then 99°. On Nov. 8th there was another rigor; the following morning the temperature was 102°, there was slight œdema of both legs, some fulness in the ankles and knees, with tenderness on deep pressure. There was also pain in the right shoulder-joint severe enough to prevent movement. The temperature fell to 99° the next day, but rose gradually to 104° in the afternoon, while the pain and swelling in the left ankle and knee increased. The condition of the left knee became much worse and assumed the appearance of very acute osteo-arthritis; the temperature rose to 105·2°. For the next few days it fluctuated between 101·5° and 104°, but the swelling of the knee and ankle decreased somewhat, so that free passive movement was possible in the latter joint. Some erythema which had been present over the ankle disappeared completely. The circumference of the left thigh just below the apex of Scarpa's triangle was two inches greater than that of the right in the corresponding position. But with the indications of apparent subsidence of the mischief in the lower limb redness and effusion began to appear over the right wrist, marking out at first the synovial sheath superficial to the joint. This condition increased and the well-defined redness gave way to an œdematous surface of a purple hue. With this a similar patch, possessing all the physical characters of erysipelas, began to appear over the left olecranon. The elbow-joint was not involved. While the swelling over the right wrist was becoming fainter and less dusky the cutaneous inflammation over the elbow was spreading. Meanwhile the left ankle became quite free in its movements, though œdema of the foot persisted; there was still pain on attempting to extend the knee from its flexed position, though it could with difficulty be straightened out. Neither at this time nor at any time during the whole course of the illness was there any uterine trouble. That organ was freely moveable and there was no induration in the pelvic cellular tissue. During the next few days the erysipelatous patch over the left elbow crept up as far as the shoulder and half-way down the forearm; then it began to subside gradually, leaving the limb considerably increased in size. The effusion over the right wrist still persisted and it became obvious from the general condition and the temperature chart that the swelling had suppurated. On Nov. 27th the swelling was opened under A.C.E., and about two ounces of thick curdy pus were evacuated, hot fomentations being subsequently applied. For the next few days there was favourable progress, the incision was healing well and the temperature kept below 101° F. Then the leg began to be extremely painful and the œdema increased. Occasionally the pain was agonising—neither active nor passive movement was possible. At this time there were decided bogginess and distension of veins over the posterior surface of the left elbow and pain in one definite spot on the olecranon process. In the interval between the olecranon and external condyle there was a distinct sense of fluctuation and there appeared to be inflammatory exudation from this area extending lower down the limb, but the movements of the joint were quite free. The general state of the patient pointed to more pus in the body and the physical signs of the elbow region seemed to localise it there. But an incision down to the bone in the œdematous area failed to reveal any purulent collection. As the patient was under an anæsthetic the knee-joint was explored by means of a syringe but only clear fluid was drawn off. The syringe was again inserted into the œdematous thigh, in the lower and outer third, and on this occasion some purulent fluid was removed. The puncture was enlarged by an incision one and a half inches long and about three-quarters of a pint of dark sanious pus escaped. A counter opening was made towards the posterior surface of the limb and a large drainage-tube was inserted. This operation was performed on Dec. 14th and from this time matters improved considerably, but only for a few days. It became obvious that the drainage was imperfect and that the abscess cavity was bagging. The temperature rose again to 103°, the pain in the knee increased, and the discharge practically ceased. On Dec. 28th the patient was again anæsthetised and the knee explored with a syringe; there was no pus and but very little clear fluid. On pushing a long probe downwards from the lower incision on the outer side of the thigh it was found to penetrate the joint, and its end could be felt projecting at the inner side of the knee. Through the original incision in the thigh about two inches of bare femur could be felt. This incision was extended downwards and a counter incision was made on the back of the limb, a drainage-tube being passed right through. Another incision was made along the course of the probe inserted in the limb. A further incision was made into the knee-joint from the outer side and it was found that adhesions were forming between the articular cartilages. This incision was stuffed with iodoform gauze and the limb fixed on an interrupted back splint. The drainage was now free, and after a couple of days the temperature fell to normal, and with one or two occasional elevations to 100° remained so permanently. Pus discharged in small quantities from the incisions for about three weeks, and when the tubes were completely removed the wounds healed absolutely well without leaving sinuses. A poroplastic felt splint was fitted to the knee and the patient was encouraged to sit up in bed. Massage and passive movements were begun. Convalescence was very tardy owing to œdema of the leg and foot, with a markedly cyanotic condition of the latter. On March 9th, 1900, the patient sat up out of bed for the first time, and from this date improvement was steady, so that now she is in perfect health with the exception of some ankylosis of the knee.

The foregoing is, of course, the history of a typical attack of pyæmia ending in recovery and forms the climax of the gradual series of septic disease from which the patient has suffered. The interest of the case is certainly considerable, and looked at from the point of view of its relation with the preceding attacks, similar in nature but different in degree, gains in importance. It is perfectly clear that this patient possesses the power of elaborating from her own tissues an antitoxin which is inimical to the growth of the streptococci of suppuration. Their first invasion was met by an immediate production of antitoxin and the only indications of a struggle were the pyrexia and rigors. On the second occasion the mobilisation of the chemical forces of the body was less rapid, there were weak spots in the defence—i.e., the bruises of the impressed finger-marks—and here local suppuration occurred. But still the general preparations of tissue resistance proved to be good and a pyæmia was warded off. On the third occasion, however, either from the intensity of the attacking poison or delay in the elaboration of the defensive antitoxin, the resistance was slow and there was time for true embolic or pyæmic processes to take place before success was achieved.

The entrance of the cocci must obviously have been through the genital tract, and in the last illness was not the result of contagion in the ordinary sense, as the first rigor occurred before any vaginal examination had been made. The case demonstrates that the seat of inoculation may entirely escape the local processes of the disease, and this is a point which should be remembered in making a diagnosis when puerperal pyrexia is not attended by inflammation of the pelvic cellular tissue, peritoneum, or uterine appendages. Incidentally some light is shed on the pathology of erysipelas, for the occurrence of absolutely typical patches of this condition warrants us in discarding the time-honoured doctrine that this disease must be preceded by a breach of surface to serve as the site of inoculation.

Erichsen records a case of pyæmia in which a collection of pus was found in the intermuscular strata of the lower third of the thigh. There was a free communication between the abscess cavity and the knee-joint and the author concludes that the joint had suppurated and its contents extravasated into the tissues of the limb. In the present case it will be remembered that the probe inserted into the abscess cavity passed right down into the joint. In dressing the limb it was seen that all the pus came from below upwards, and when drainage was deficient pus could only be obtained on making pressure in that direction. Assuming that in the present instance the joint suppurated and that the pus found its way into the tissues of the thigh the subsidence of the effusion in the knee and the increased circumference of the limb are easily explained.

It is important to note that this case narrowly escaped record as an example of cure by anti-streptococcic serum. About the fourteenth day of the disease, when its septic nature had long become obvious and the condition of the patient was exceedingly grave, the temperature remaining between 102° and 104°, it was determined to use this serum, and preparations were actually made for this purpose. At the very last moment, however, in view of the fact that so far there had been no actual evidence that it was a pus-producing organism which was at work, the injection was abandoned. The very next morning the temperature had fallen from 104° to 99°. If the injection had been administered it would have been held responsible for this sudden drop and would doubtless have been regarded as having influenced favourably the whole course of the disease. The treatment of the case on ordinary surgical lines shows that it was not any antitoxin artificially injected into the tissues which determined recovery, but the actual production of the antitoxin from the constituents of the blood of the patient.

Spitalfields, E.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

PAROTITIS AFTER ABDOMINAL SECTION.

BY BERTRAM ADDENBROOKE, M.D. DURH., M.R.C.S. ENG., &C.

IN THE LANCET of Jan. 19th, 1901, p. 176, Dr. William Elder records a case of parotitis after abdominal section, a brother of the patient who was living in the same house having had an attack of parotitis epidemica (mumps) 49 days previously. This, considered in contrast with cases under my care where two cases occurred in other members of the family after parotitis in a patient, a sequel to abdominal section,[1] is, as Dr. Elder remarks, very interesting, and although he is of opinion that it is doubtful whether his case was one of parotitis (from metastasis?) or true mumps, I venture to think that the previous occurrence of parotitis epidemica in the house was only a coincidence. There is, however, one very striking point of resemblance between the cases reported by Dr. Elder and by myself. It is this: three days after the operation on his patient parotitis developed, and as I recorded in THE LANCET of Dec. 29th, 1900, there was the same duration of time in the case under my care and, furthermore, in the two other members of the family who subsequently suffered from parotitis there was the same interval between the exposure to infection and the supervention of parotitis as in the abdominal cases—namely, three days.

Kidderminster.

DORSAL DISLOCATION OF THE FIRST PHALANX OF THE LITTLE FINGER.

BY EDWYN M. RIDGE, M.R.C.S. ENG., L.R.C.P. LOND.

HAVING seen the article on Dorsal Dislocation of the First Phalanx of the Little Finger by Mr. Harold L. Barnard in THE LANCET of Jan. 12th, 1901, p. 88, I think it would be interesting to record a case of what he calls a "complete complex dislocation" which came under my notice shortly afterwards. A youth, aged 19 years, came into the receiving-room of the Poplar Hospital for Accidents where repeated attempts were made at reduction by the ordinary methods. He gave a history of falling backwards and in putting out his hand behind him to save himself he bent his finger backwards. Further attempts were made under an anæsthetic without avail, and then the simple operation suggested by Mr. Barnard was resorted to with very favourable result, the patient making an uneventful recovery, good movement and power being already attained. The way in which the accident occurred in the case which I have described seems to me much more likely to happen frequently than that which Mr. Barnard alleges.

Enfield.

[1] THE LANCET, Dec. 29th, 1900, p. 1873.

SERUM TREATMENT OF DIPHTHERIA ON THE FOURTH DAY OF THE DISEASE.

BY RALPH S. MCD. PULLEN, M.R.C.S. ENG., L.R.C.P. LOND.

ON a Wednesday evening recently, at 11 P.M., I was sent for to see a child, aged four years, who was stated to be suffering from a "sore-throat." The patient had been taken ill on the previous Sunday. I found the tonsils covered with membrane and bleeding. There was a nasal discharge. Such difficulty of breathing as existed was due to nasal and not to laryngeal obstruction. The temperature was below 100° F. At midnight I administered an injection of serum under the skin of the abdomen. The patient was comfortable and slept during the night and in the morning appeared somewhat brighter as regarded her general condition. I advised her removal to hospital where she received a second injection at 1 P.M. on the Thursday. The membrane disappeared with marvellous rapidity and the general improvement was very marked. She has made a good recovery up to the present time.

I communicate this case as I consider the interest lies in the successful issue of an injection at such a late period—some 96 hours—after the invasion of the disease.

Stoke, Devonport.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

WESTMINSTER HOSPITAL.

A CASE OF RECURRENT APPENDICITIS COMPLICATED BY GENERAL SEROUS PERITONITIS AND EFFUSION.

(Under the care of Mr. W. G. SPENCER.)

PROBABLY the rarest complication of inflammation of the appendix is a serous—i.e., non-purulent—effusion and this is due to the fact that if an appendicitis is sufficiently severe to cause any peritonitis this will be due to the passage of micro-organisms through the wall of the appendix, and these micro-organisms are nearly always pyogenic. If, however, merely toxins pass into the peritoneum or microbes of a mild type then a non-purulent peritonitis may arise which may disappear after drainage. It would have been of interest to have had the result of a bacteriological examination of the peritoneal fluid in the following case, and an examination of the sputum in the pneumonia might have shown an identity in microbic infection between the peritonitis and the pneumonia. For the notes of the case we are indebted to Mr. A. Whitehouse, dresser.

A well-nourished generally healthy man, aged 24 years, was admitted into Westminster Hospital on Dec. 29th, 1900; there had been severe pain in the abdomen and repeated vomiting for the previous 24 hours. He had had a right inguinal hernia operated on by Mr. W. Anderson at St. Thomas's Hospital. In November last the patient had been suddenly

seized with pain all over the abdomen and had vomited all one night, after which he was admitted to a medical ward in Guy's Hospital. He was placed on a milk diet, the pain subsided, and he left the hospital being told that he had had an attack of appendicitis.

After admission to Westminster Hospital repeated bilious vomiting occurred, the temperature was 100·6° F., the respiration was 24, and the pulse was 108. The abdomen was distended by free fluid without gas, there was pain all over, but the patient referred the most severe pain to McBurney's point. Nothing was to be felt in the right iliac region or in the rectum. The bowels had been regular. The diagnosis made was general septic peritonitis following recurrent appendicitis and perforation.

On making an iliac incision nothing abnormal was found outside the peritoneum. On incising the peritoneum straw-coloured serous fluid poured out abundantly. The appendix was found freely floating over the pelvic brim and was not thickened. Its surface, as well as the intestines within view, simply showed dilatation of the capillaries on their serous surface without any lymph or adhesions whatever. The appendix was excised and a rubber tube was passed through the wound down into the pelvis.

Serous fluid drained freely away for three days, and the tube was removed on the fourth day. The pulse, which reached 130 on the first day, became normal on the fifth. The temperature fell at once to normal. The bowels were opened freely by calomel on the fifth day, after which the abdomen remained soft and free from tenderness. Thirteen days after the operation, whilst lying in a bed beside the fireplace, he had an attack of right basic pneumonia. The temperature returned to the normal five days later and the rusty sputa soon became muco-purulent. The patient was kept in bed for a month after the operation and was discharged on Feb. 7th apparently quite well.

The appendix, on being slit open, showed a constriction of the lumen at the junction of its middle and distal third, it contained fæcal mucus but no concretions, and the inflammation had not increased the thickness of its wall to any noticeable extent.

Remarks by Mr. SPENCER.—Among the many varieties of appendicitis the above case is a rare instance. Before the operation the condition was supposed to be one of general septic peritonitis following upon perforation. There was nothing to account for the general serous peritonitis unless the attack of pneumonia during convalescence points to an individual predisposition to catarrhal inflammation. The peritonitis was arrested by the drainage.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.

A CASE OF LATERAL LITHOTOMY SUCCESSFULLY PERFORMED IN A SMALL BOY FOR THE REMOVAL FROM THE BLADDER OF A STONE OF UNUSUAL DIMENSIONS AND WEIGHT.

(Under the care of Mr. T. VINCENT JACKSON.)

THE lateral operation of lithotomy is becoming every year more rare, and rightly so, for we have in lithotrity a method which in skilled hands gives better results; but lateral lithotomy was especially successful in boys, for the mortality ranged from 2 to 4 per cent. There are even now some cases of vesical calculus in which a cutting operation offers a better chance of success, and we agree with Mr. Vincent Jackson that the large size of the stone in the following case was a strong argument in favour of lithotomy.

A boy, aged seven years, residing at Cannock, on May 2nd, 1900, attended as an out-patient at the Wolverhampton and Staffordshire General Hospital with symptoms of gravel, and on a vesical stone being detected by sounding he was admitted into the hospital. The family history narrated by the mother gave no indication of a tendency to gout, uric acid, renal or vesical trouble. The boy's dietary had been simple, butcher's meat not having been taken in excess, milk in moderation being the chief fluid. Micturition had been painful since the patient was four years old and this symptom had increased in frequency, duration, and intensity. The microscopic examination of the urine indicated the presence of pus, but no blood corpuscles, crystals, or renal casts. The boy was physically small for his age but was not unhealthy-looking. On the 11th (the patient being blindfolded) a soft catheter was passed into the bladder, its contents flowing away; then two or three ounces of warm sterilised water were injected and left in and the catheter was drawn out. Next the urethra was fully distended by a local anæsthetic (1 per cent. of eucaine and 2 per cent. solution of suprarenal capsule). After waiting a while a boy's lithotrite, the largest the urethra would admit, was with difficulty finessed into the bladder and a stone, which evidently was a hard one and of unusual bulk, was with careful manipulation seized by the points only of the lithotrite, the blades of which had to be separated for fully two inches. It was determined to perform lateral lithotomy, and, chloroform being given, this was accomplished with greater facility than Mr. Jackson expected, the operation being commenced and completed under two minutes; no artery spurted. A glass tube was tied in the bladder and removed two days later. On June 3rd, when the patient was discharged from the hospital, the wound had healed, the lad having been out of bed for the past week. The stone weighed 2 ounces 2 drachms and was fairly smooth on the surface. The actual measurements were as follows: circumferential length, 6⅛ inches; circumferential breadth, 5 inches; and thickness, 1¼ inch.

Remarks by Mr. JACKSON.—Lately I have been reading with much surgical pleasure "The Stone Number" of the *Indian Medical Gazette* (August, 1900), kindly lent by Dr. D. F. Keegan, now wintering in the Tyrol. Dr. Keegan's contribution is worth any time spent over it; it is historical of the rise, progress, and the statistical position of "lithotomy" (I wish this word was dropped and "lithotrity" was substituted) and the record of 500 cases with a mortality of 11 and a death-rate of 2·2 per cent. is so reassuring that I do not wonder that the operation in children is much more generally adopted at home than it used to be, and I am convinced that for a stone in the bladder of a size not prohibitory crushing rather than cutting is the operation which should be resorted to if the local conditions are favourable and a careful preparatory examination brings to the surface no prohibitory conditions either in the kidney or bladder. Off hand, as a summary of what is in my mind as conditions which may be put down as a bar to crushing, I may mention renal disease (this is sometimes very difficult to fathom and its non-detection is one of the disasters sequential to lithotrity—of Dr. Keegan's 239 cases five succumbed from advanced kidney disease); large encysted and hard oxalate of lime stones; deposits of calculous material on the inner walls; a sacculated bladder, cystitis, and putrid urine. Here I may quote from THE LANCET[1]: "No surgeon can doubt after reading our contemporary's special number that at the present time the safest and the most speedy method of removing a stone from the bladder in nearly every case is Bigelow's operation of lithotrity." Although this is quite true and is a governing statement of what the surgical treatment of stone in the bladder of boys should be, yet let me point out that as a signpost I extract from the *Indian Medical Gazette* for December, 1886, p. 356, a case under the care of Dr. R. Caldecott in which the patient died shortly after a crushing operation, the cause being found post mortem to be peritonitis induced by a sharp-pointed fragment of stone having pierced the wall of the bladder and lying in the rent. A second death, two days after operation, followed lithrotrity for an oxalate of lime stone weighing 242 grains, the operation lasting 71 minutes. Lithotomy might have saved these lives.

I do not consider that in the case which is reported there is much room for controversy as to the most fitting and safe surgical procedure to be adopted for the cure of the little boy. A surgical authority of large experience in the operative treatment of vesical calculus has enunciated the dictum that every stone weighing two ounces and over is to be regarded as a large stone and dealt with accordingly. I confess that I jibbed at an attempt to perform lithotrity, and fixing on lateral lithotomy I performed that operation, and the rapid and easy recovery of the patient is the best justification of the selection.

[1] THE LANCET, Jan. 19th, 1901, p. 193.

HEALTH OF NEWQUAY.—Dr. A. Hardwick, the medical officer of health of Newquay, Cornwall, reports that during the year 1900 the death-rate was 10·4 per 1000, being the lowest rate for the past six years. He states that the population was estimated at 2600. There were 207 cases of infectious diseases notified during 1900, of which 194 were measles.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Discussion on Immunity.

A MEETING of this society was held on March 12th, Dr. F. W. PAVY, the President, being in the chair.

Professor SIMS WOODHEAD opened a discussion on the subject of Immunity. After referring to the magnitude of the subject he remarked that though some observers might have modified their opinions during the past eight years as to the exact part played by Metchnikoff's phagocytes, all would agree that without his epoch-marking work it would have been impossible to discuss other theories with any degree of intelligence, for upon the phagocyte theory the "side-chain" theory of immunity and antitoxin production depended for its inception and conception. He mentioned that whilst in Edinburgh he and Dr. Cartwright Wood had carried out a series of experiments on the production of immunity by means of soluble products, in which they thought they obtained a condition in which special activities of the cell were drawn out, comparing the cell to a many-faceted body, each facet of which was enabled to withstand the attacks of poisons or substances which they had been trained to resist. He referred to the theory of separable enzymes and external metabolism, to Bouchard's "antibodies" produced by all cells, and then spoke of Behring's more systematic observations on the action of toxins in producing antitoxins. Referring to the "overflowing" of antitoxins from the cells he maintained that this was comparable to the overflowing of the toxins from the bodies of organisms. There were some "properties" or "functions" which appeared to be separable only with great difficulty from the bodies of micro-organisms, so also there might be certain properties or functions which were more intimately bound up in the protoplasm of the cell. In so far as these were distinct he maintained that immunity was distinct from antitoxin production, but in so far as they were interchangeable and collateral immunity and antitoxin production must run side by side. He referred to Bütschli's theory of the structure of protoplasm and the relation of metabolic products to the protoplasm, and pointed out that, if they accepted this theory, then immunity and antitoxin formation, though not the same, must in many cases be very nearly related. He then explained Ehrlich's idea that in regard to immunity the toxic action of a toxin was practically a matter of little importance, in so far as a toxin did not produce its antitoxin by virtue of its toxic power, but because on introduction into the animal body in such a way that its immediate destruction was avoided it was assimilated—i.e., it entered into very close combination with the protoplasm of the cell, and as a result of this assimilation they had the production and overflow of antitoxic substances from the specially stimulated cell. But the production of immunity against disease appeared to be merely a part of a general process going on where albuminoid substances were being assimilated by living protoplasm. In this connexion he referred to the late Dr. Walter Myers's experiments on Immunity against Proteids[1] and indicated their importance in regard to the specific effects produced by proteid poisons in determining immunity and antitoxin production. The study of the ferments formed by pathogenetic organisms could perhaps be best advanced by continuing the study of the non-pathogenetic enzymes, hæmolytic substances and the agglutinins, in connexion with which Ehrlich, Pfeiffer, Gruber, Durham, and others had already obtained such brilliant results. Ehrlich had found that the toxic molecule could be so modified that whilst losing a great part of its lethal activity it still retained its minimising influence on the cells. Dr. Cartwright Wood had proved that it still retained its power of stimulating the cells to produce antitoxin, these observers having their work confirmed by Ritchie. The molecule able to become assimilated by the cell still retained its characteristic power of forming "antibodies." Bound up with the theories of immunity and the source of antitoxin was the question of the nature of antitoxin. One of the original theories put forward by Roux and Vaillard and afterwards emphasised by Ehrlich, that antitoxin was the result of the special stimulation of certain cells, received support from a very large number of observations made during the preparation of antitoxin in the fact that it was only where there was marked reaction, especially of a local character, that there was any increase in the amount of antitoxin produced. He laid special stress on the local reaction because the toxin injected must exert its greatest stimulating power — in fact, one might almost say its only stimulating power—on those tissues with which it came directly in contact, that was before it became mixed with any large quantity of lymph or found its way into the circulation, in which, at the temperature of the body, the combination of toxin and antitoxin went on with great rapidity, the amount of antitoxin in the blood of some of the animals under treatment being thousands, and even tens of thousands, of times the quantity required to neutralise the whole of the toxin injected. Acting locally, however, it might be readily understood how the toxin, given in gradually increasing quantities, could still continue to stimulate the connective tissue cells to the production, excretion, and overflowing of the antitoxin into the surrounding fluids. Behring drew attention to the fact that the tissues might become hypersensitive even when large amounts of antitoxin were present. Such a condition they would expect to find in the more highly organised tissues for which the toxin had a special affinity. Here there might be a kind of local hypersensitiveness induced through want of equilibrium due to over-stimulation. The amount of antitoxin might be great, quite sufficient to protect against toxins introduced in the ordinary way, but inadequate, because it could not all act at one place at once, to counteract the local action of poison specially introduced in bulk and at one point. As regarded the amount of antitoxin produced he might mention that taking the lethal activity of a toxin to represent its quantity and neutralising power he had records of the formation of 20,000 and even 40,000 times as much antitoxin as he used toxin. This was remarkable and indicated one of two things: (1) most probably that the immunising or antitoxin stimulating substance was of the nature of a toxoid or of a proteid molecule that was not highly toxic, and (2) that the process of antitoxin formation went on long after the special and specific stimulus had been removed. The idea that antitoxin was merely a modified toxin was strongly dissented from. In support of this he would put forward the above facts and also the observations made by Martin and Wood as to the nature of albumoses. He himself had found that these albumoses, whatever might be their exact character, were not specially toxic, but, on the other hand, they were in no sense of the term antitoxic. They had the power when introduced into the body of setting up the formation of antitoxin and also the power of producing a very definite immunity. They had also evidence of the cellular origin of antitoxin in the way in which it continued for long periods in the fluids of the animals in which it was produced, long after all trace of toxin had disappeared, although it might be and was thrown out as a foreign body from animals into which it was ingested. The discovery of the linking-on of toxin to proteid bodies, and particularly to special proteid bodies, and the assimilation by cells, with the consequent appearance of anti-bodies, was one of the most remarkable contributions to their knowledge of immunity that had yet been made. He then dealt with the question of polyvalent sera and pointed out how important were Durham's observations in connexion with the subject of relapses. Whether they were justified in accepting this theory of specific reaction or that put forward by Dr. Cartwright Wood, they were gradually working out the extreme specificity of immunity in most cases of disease. A general insusceptibility there was in many cases, but this could usually be increased at the expense of a marked protection against specific bacteria and bacterial poisons. He should leave the specific immunities to be discussed by those who would follow and who had paid special attention to specific diseases.

Professor A. E. WRIGHT did not think with Professor Woodhead that the theories of immunity which were propounded by Metchnikoff and Ehrlich respectively could be regarded as theories which merged into each other. Metchnikoff's phagocytosis theory was designed to explain the bactericidal effects observed in the organism. An explanation was found for these in the assumption that the organism of the higher animals corresponded to

[1] THE LANCET, July 14th, 1900, p. 98 et seq.

a colonial aggregation of monocellular organisms, some of which in the form of white blood corpuscles still possessed the properties and exercised the functions of the original free-living monocellular organisms. There was no doubt that the fact that white blood corpuscles emigrated towards the seat of a bacterial invasion and that the bacteria were afterwards found in the interior of the white blood corpuscles and often in a condition of disintegration was brought much nearer to the understanding by the theory propounded by Metchnikoff that the bacteria were incorporated and digested by phagocytes. On the other hand, when they turned from the consideration of the inflammatory and bactericidal effects seen in the organism to the consideration of the problem of antitoxin formation in the organism, the theory of immunity propounded by Metchnikoff failed entirely to provide anything in the way of an acceptable explanation. Metchnikoff's view that the white blood corpuscles voided antitoxins into the body fluids under the stimulus of a toxin might, it was true, be crudely compared with the ex-voiding of mucus which took place when a snail was brought into contact with alcohol, the toxin of the yeast plant, but the mental picture would not explain to them the fact that a number of different specific antitoxins were produced in the organism in response to the introduction of a series of different toxins. This last, as distinguished from the problem of the bactericidal effects exerted by the organism, was the problem that Ehrlich set himself to solve. He asked himself not how it was that bacteria were destroyed in the body, but how it was that when a guinea-pig was injected with a poisonous element—and in some cases the poisons in question were poisons which were brought in contact with the responding guinea-pig for the first time in the history of the individual and the race—an antitoxin was produced whose chemical properties fitted those of the poison as accurately as a key fits into its corresponding lock. Professor Ehrlich had drawn attention to the fact that such antitoxin production took place only when the poisons which were injected were albuminous substances or substances allied to them—when, in other words, the poisons were such as might, the speaker thought, be conveniently denoted as "poisonous foodstuffs." Such "poisonous foodstuffs" would be taken up into cells by virtue of the fact that there were in the cells molecular groups—side-chains—which possessed chemical affinities for the substances in question. Following upon this "occupation" of the side-chains by the poisonous foodstuffs there would occur, in the opinion of Ehrlich, a re-formation of similar side-chains in the cell, which would gradually transform itself into a process of "internal secretion," the product of secretion being a substance identical in its chemical affinity with the toxin with the original "side-chain" constituent of the cellular protoplasm. The further question as to what kind of cells contained side-chains which could be thrown off as antitoxins had been somewhat incompletely treated by Ehrlich; for while he had emphasised the fact that the cells whose side-chains were affected by the toxin were those which responded with a formation of antitoxin, he had, through a certain want of preciseness in the setting forth of his theory, allowed it to be understood that the response took place only in the group of cells which the clinician recognised to be affected by the poison. Such would be the case only with "monotropic" poisons—i.e., poisons which affected only one variety of cell. In the case of "polytropic" poisons—and a very large number of poisons must come under this category—the chief response—i.e., the chief antitoxin production—might take place in tissues which the clinician could not discover to have been affected. Under this category would come the white blood corpuscles which when affected by the toxin would naturally be involved in the production of antitoxins. It was, in the opinion of the speaker, only in this respect, and even here only incompletely, that the theory of Metchnikoff conformed with Ehrlich's theory of the production of antitoxins. Professor Wright then passed to consider the possibility of applying the theory which Ehrlich had propounded to explain the production of antitoxin in the system, to the explanation of the production of bactericidal substances in the blood. A comparison could be established between the two processes when it was considered that the constituents of the bacterial protoplasm were in many cases poisonous and that these constituents passed into solution in the lymph when bacterial cultures were injected into the subcutaneous tissue. An analogy was thus immediately established between the injection of toxins and the injection of bacteria. Similarly an analogy emerged between the response in the form of an antitoxin formation which took place after the injection of a bacterial toxin and the response in the form of a production of anti-bacterial substance which had in the case of cholera and typhoid fever been observed by the speaker to take place in the case of bacterial injections. According to these the essential difference between an anti-bacterial substance and an "antitoxin" (using the term in its ordinary sense) would be that the substance produced in the latter case had a chemical affinity for the substances contained in bacterial filtrate, while the substance found in the former case had an affinity for a substance which was a constituent of the bacterial protoplasm. When it was considered that all substances—not being food-stuffs—which had a chemical affinity for a component of the living protoplasm were by definition poisons for that protoplasm, the circumstance that an antitoxin to a constituent of the bacterial protoplasm was capable of functioning as a bacterial poison was easily explained. Taking his stand upon the identification of anti-bacterial substances with antitoxins (using the term in its widest sense), the speaker proceeded to point out that the phenomena which came under observation after an injection of toxin came under observation also after an injection of bacteria. Just as in the first case the injected toxin circulated for a time in the blood of the injected animal, so after the injection of bacteria a similar negative phase probably occurred. It occurred, so far as the speaker's observations had gone, in the blood after an anti-typhoid inoculation, the negative phase being marked by a decline in the normal bactericidal power of the blood. Again, just as in the case of an animal which had been treated with an excess of toxin the blood might—e.g., in the case of animals injected with excessive doses of snake venom—contain toxic in lieu of antitoxic elements at the period when the blood was usually drawn off, so apparently in the case of an animal injected with an excess of a bacterial culture the blood might when drawn off contain substances which were not bactericidal but anti-bactericidal. Such substances were recently described by the speaker[1] as having been found in the specimens of "anti-typhoid sera" which were placed on the market for therapeutic use. Apart from an actual demonstration of the presence of such anti-bactericidal substances, the presence of such substances in "therapeutic sera" had been concluded by the speaker from the phenomena which he had observed in connexion with a sample of anti-plague serum which had been prepared by Dr. Galeotti in Bombay, in the case of certain anti-streptococcic sera, and in the case of a sample of anti-Malta-fever serum prepared by him (Professor Wright). In the former case, where the effects of the anti-plague serum in question were studied by him in association with his colleagues of the Indian Plague Commission, the serum, though when given by itself it did not exert any noticeable toxic symptoms in guinea-pigs, it had the effect of hastening death in guinea-pigs who were at the same time inoculated with plague.

Dr. SIDNEY MARTIN could not agree with all that Professor Wright had said. The whole subject of the specific character of proteids was becoming cleared up. Some years ago it had been said that it was not possible for a proteid substance to be poisonous or to exert any toxic action upon the body. That was exploded now. There was no reason why albuminous substances should not exert a lethal influence on protoplasm, the composition of which was very delicate. Chemical affinity of proteid substances for cells had been brought out very clearly.

Dr. JAMES RITCHIE remarked that the recognition of the poisonous properties of albuminous substances displayed on protoplasm was no doubt important; but to his mind it was still more interesting to note that pathologists were more and more coming to the conclusion that all the fundamental pathological conceptions were biological. He paid a tribute to the late Dr. Walter Myers's work on immunity set up in animals against certain proteid poisons. This opened up a field for the differentiation of the many various kinds of albumin which might be alike in all respects excepting the way in which they reacted to a particular toxin. The want of proportion between the amount of a toxin introduced into an animal and the amount of antitoxin which resulted

[1] THE LANCET, Jan. 12th, 1901.

was a very remarkable fact which needed explanation. He had lately been trying the effects of immunising animals by successive doses of the same size instead of increasing doses. There was an enormous rise in the immunity with each dose. Among the many questions which still remained unsolved was this, Why should the immunity once produced be increased? How was it that the second dose was not neutralised by the antitoxin developed from the first dose?

Mr. T. J. BOKENHAM wished to approach the subject from a clinico-pathological standpoint. How was it that patients were not poisoned by the bacteria met with in such enormous numbers in the intestinal canal? The liver had been suggested as a guard. He had made experiments to see if this applied to the bacillus coli. This bacillus was introduced in quantity and they were not found in the blood on the further side of the liver. But the liver itself was found to be crowded with bacilli. It had been shown that both organic and inorganic poisons were excreted by the bile into the intestines and thus prevented from directly entering the general circulation.

Mr. H. G. PLIMMER wished to draw attention to some of the absurd erroneous purposes and misuses to which antitoxins had been put of late, experimenting with them in different diseases, such as aneurysm. In Italy he had come across several cases of natural immunity to malaria. These persons had allowed themselves to be stung by anopheles which were full of the malaria parasite. There was not sufficient explanation of this natural immunity. Any bacillus injected into an animal's veins would disappear in five or 10 minutes. This applied to anthrax or any other organism.

Dr. W. HUNTER referred to the question of the cells which were concerned in the production of antitoxin. Were they the cells of the body as a whole or were they certain specialised cells? Metchnikoff's theory was the one which he favoured and this implied the action of a special kind of cells. In his (Dr. Hunter's) experiments on hæmolysis he had introduced some of the most powerful hæmolytic bodies into the circulation, but if the spleen had been previously excised they produced no hæmolytic symptoms or effects. This went to show that the phenomenon of hæmolysis at any rate was dependent on the action of cells of a special kind, of a mesoblastic type, and found specially in the spleen.

Professor JOHN MCFADYEAN referred to the necessity for a definition of immunity. Texas fever was now very generally attributed to an animal parasite. Beasts born in a certain district were, it was true, immune, but microscopical examination showed that their blood harboured the offending parasite, nd it would seem in a non-attenuated condition, for blood from these animals could produce the disease very severely when injected into a healthy animal. Some of the small ruminants seemed immune to cattle plague, but the blood of these also contained large quantities of the organism.

Professor SIMS WOODHEAD, in replying, remarked that the malaria parasite was found to be present in the blood of children who appeared to be in perfect health and were immune. Immunity and antitoxin production appeared to go on side by side, but he agreed with Dr. Ritchie in believing that they were not identical.

MEDICAL SOCIETY OF LONDON.

The Structure of the Vermiform Appendix and its Homologue in the Lower Animals.

A MEETING of this society was held on March 11th, Mr. JOHN H. MORGAN, the President, being in the chair.

Dr. RICHARD J. A. BERRY (Edinburgh) read a paper entitled the True Cæcal Apex, being an attempt to prove that the vermiform appendix was not a vestigial structure, accompanied by a lantern and microscopic demonstration. He commenced by describing the four different types of cæcum and appendix met with in man and then gave an account of the structure of the cæcum in different members of the animal kingdom—viz., the rabbit, cat, pigeon, skate, frog, goose, fish-eagle, Javan adjutant, fowl, kangaroo, sloth, pig, sheep, mouse, beaver, squirrel, hyæna, dog, marmoset, monkey, ape, and others. In man the vermiform appendix represented the true apex of the cæcum, but as there were but few vertebrates which presented a vermiform appendix the apex of the cæcum (the equivalent of the appendix vermiformis in the lower animals) was examined histologically to see what, if any, analogies and homologies existed between them. The various facts observed were described in some detail. The theories to be based upon them would, he said, be considered on a future occasion. As regards the animals examined, with the exception of the cold-blooded animals, the skate and the frog, the marsupials and sloths (animals which were notoriously difficult of classification), the hedgehog (a hibernating animal without a cæcum), and the Patagonian cavy, the cæca of all were characterised by large amounts of lymphoid tissue. The lymphoid tissue was either specially aggregated together in distinct and definite masses (and more especially was this the case when the cæca were short, as in the cat and the pigeon), or else it was diffused throughout the total length of the cæcum, particularly when this structure was long, as in the domestic fowl, the pig, and the sheep. In all instances the lymphoid tissue tended to be better marked at the cæcal apex, or at all events very near the cæcal apex, as in the mouse and the rat. In the majority of the animals examined the amount of lymphoid tissue contained in the cæcum was largely in excess of that contained in other parts of the large intestine. The line of demarcation between the two was in many instances, such as in the pigeon the rabbit, the cat, the mouse, the rat, the dog, the striped hyæna, &c., most abruptly marked. It had been proved beyond doubt that the characteristic feature of the normal human appendix was lymphoid tissue; and the facts adduced pointed to the conclusion that the histological homologue of the human appendix was to be found in the cæcum of the lower animals. The precise seat of the lymphoid tissue in the cæcum varied somewhat in the different animals. In the pigeon it occupied the entire cæcal wall; in the mouse and the rat the lateral wall of the cæcum near its apex; in the majority of the animals examined it occupied the cæcal apex itself; whilst in the higher vertebrates it was confined to the vermiform appendix. The author came to the following conclusions. 1. Lymphoid tissue was the characteristic feature of the cæcal apex. The vermiform appendix of man was therefore represented in the vertebrate kingdom by a mass of lymphoid tissue situated most frequently at the cæcal apex. 2. As the vertebral scale was ascended this lymphoid tissue tended to be collected together into a specially differentiated portion of the intestinal canal—the vermiform appendix. 3. The vermiform appendix of man was not, therefore, a vestigial structure but a specialised part of the alimentary canal.

The PRESIDENT congratulated Dr. Berry on his paper. The late Professor Rolleston had pointed out that the presence of an appendix was confined to the higher apes and the wombat. He thought that Dr. Berry had established his point.

Mr. C. B. LOCKWOOD wished to express his appreciation of the beautiful specimens exhibited. It was difficult to realise the amount of labour involved. He thought that Dr. Berry's researches had an immediate bearing on clinical medicine and surgery. Dr. Berry had proved his position. The appendix was not a retrograding structure. It continued to grow and develop after birth. He had removed this structure from a child, aged four years, and from a man, aged 70 years, and he had found lymphoid follicles quite as well developed in the latter as in the former. Dr. Berry's specimens also revealed another important practical fact to which he (Mr. Lockwood) wished to direct attention. They demonstrated the existence of a basilar lymph channel which collected the lymph from the lymphoid tissue and communicated with the lymphatics of the mesocolon, the lymphatics of the peritoneum, and elsewhere. It was along this route that septic matter was absorbed from inflamed appendices. Numerous septic organisms had been demonstrated within the appendix under these circumstances, which explained the serious train of symptoms which arose when an inflamed appendix was left, although the mucosa might be entire on examination. There was certainly one type of disease which consisted of lymphangitis of the appendix and another of lymphadenitis of the appendix. He was inclined to locate the lymphoid tissue in the mucosa rather than in the submucosa.

Dr. BERRY, in reply, said that he believed the lymphoid tissue to be localised chiefly in the submucosa, though it sometimes extended to the mucosa also. The diet of the animals was a most important subject, for he felt sure that the lymphoid tissue had a definite relation to the food of an animal. For instance, in the carnivora

the cæcum was short, in the herbivora it was long, while in omnivorous animals the cæcum was intermediate in size, and it was more particularly in the latter that lymphoid tissue was abundant. He had ligatured the appendix in several rabbits and allowed them to live for varying periods of time —two days, four days, eight days, and one month. In every case he found that leucocytes had wandered into the cavity of the appendix.

CLINICAL SOCIETY OF LONDON.

The Epidemic of Enteric Fever among the Troops in South Africa.

A MEETING of this society was held on March 8th, Sir R. DOUGLAS POWELL, Bart., the President, being in the chair.

Dr. H. H. TOOTH opened a discussion on the Epidemic of Enteric Fever among the Troops in South Africa. His paper is printed in full on p. 769.

Surgeon-General J. JAMESON (Director-General of the Royal Army Medical Department) expressed his great interest in Dr. Tooth's remarks. Enteric fever had always been a bugbear in South Africa. Instructions were drawn up early in the war and he did not think, looking back, that there had been anything to add to these. Some years ago the post of sanitary officer was abolished from the army. This was perhaps unfortunate, for the principal medical officer of a division, to whom the duties of sanitary officer were allotted, was fully occupied with the care of the sick and other duties. He (Surgeon-General Jameson) had, however, at the very commencement of this war appointed Captain M. L. Hughes, R.A.M.C., in that capacity and had equipped him with a bacteriological and chemical outfit and sent him out by the same ship as Sir Redvers Buller. Unfortunately, this gentleman was killed in action early in the war, and this he regarded as a national misfortune. No doubt there were great difficulties in dealing with these epidemics, and perhaps the greatest of these was the personal equation of the soldier who did not hesitate to drink when he was thirsty without troubling about the sanitary condition of the water. An admirable method of dealing with the latrines was now in vogue. In all standing camps a trough containing milk of lime was provided into which the excreta were received and removed to a distance.

Professor A. E. WRIGHT (Netley) wished to refer to the subject of inoculation but he did not propose to deal with the whole question. He agreed with Dr. Tooth that excessive reaction meant greater need for protection; but it also meant excessive dosage, and he believed that small doses were better. They must assume that a person after an attack of enteric fever became more immune, and their endeavour should be to make the blood of a patient like the blood after an attack of the disease as tested by Widal's reaction. But, unfortunately, this reaction was not always obtainable after an attack of the disease. Special methods were therefore necessary to test the blood in such circumstances and he had made investigations into the bactericidal power of the patient's blood. Remarkable facts had resulted from these experiments. Some patients came out of an attack of enteric fever with the bactericidal power of their blood actually diminished. The liability to relapses was another question of importance. A small bactericidal power generally meant greater tendency to relapse, and the case of a man was referred to who had two inoculations and two definite attacks of the disease in the course of two years. The object should be to make the blood like that of a man who had come out well after an attack of enteric fever, and he believed that this was largely a question of dose in relation to the particular individual to be inoculated. Professor Wright then referred to the various statistics bearing on inoculation. There were not, he said, at present a very great number. First, in the Maidstone epidemic there were 84 warders and attendants at the lunatic asylum who were inoculated and among these there were no cases, whereas of the 120 who were not inoculated four were attacked. In India, in 1898–99, he had inoculated 4502 soldiers under very difficult circumstances, standardising his typhoid vaccine in hotels and trains. He was therefore not satisfied with the quality of the vaccine then employed; nevertheless, only 0·98 per cent. of the inoculated got enteric fever as against 2·5 per cent. among those not inoculated in the same garrison and regiments. In South Africa, among the Ladysmith garrison,[1] out of 1705 persons inoculated only 2 per cent. were attacked, whereas of 10,529 not inoculated 14 per cent. were attacked. The statistics of the officers appeared at first to contradict these figures, for out of 44 inoculated there were two deaths, and among 171 non-inoculated there were only five deaths. But further inquiry showed that there were really no deaths among the former, and 12 deaths among the latter, and consequently the percentages were the same among the officers as among the men. An epidemic in one of the Hussar regiments[2] was referred to in which among 360 inoculated men there only occurred two cases and no deaths, whereas among 160 non-inoculated there were 11 cases and six deaths. Then there were the figures from the Scottish Hospital; in the first section of the hospital staff 61 were doubly inoculated and among them there were no cases; in the second section there were 82 of whom 35 were inoculated and there were no cases, and one not inoculated contracted enteric fever. Out of 46 medical men and orderlies nearly all of whom were inoculated three uninoculated got enteric fever and one died, two had been inoculated only once and of these one got enteric fever and died. A large number of altogether reliable statistics bearing on this question were, however, still wanting. Turning to the question of methods, a person ought certainly to be inoculated twice—once did not give efficient protection. It was best to begin with a small dose and there should be an interval between the injections. This might be followed by a larger and stronger injection. Finally, there should be an interval after the second injection before proceeding to the seat of war. But how was it possible to carry out all these conditions in the presence of a big campaign suddenly thrust upon them like the present? He had therefore been obliged to content himself with one large dose. The inoculations had often been done on board ship on the way to South Africa by various surgeons, some of whom were enthusiasts in the cause of enteric inoculation, but many were not.

Sir DYCE DUCKWORTH congratulated Professor Wright upon his researches, the value of which was undoubtedly very considerable. He thought that the results of typhoid inoculation were most encouraging. In his opinion nurses, medical men, and others liable to be exposed to the infection ought all to be protected in this way. The inoculation should certainly be done twice and all statistics in which only one inoculation was performed should be kept carefully apart from the double inoculations.

Major W. G. MACPHERSON, R.A.M.C., endorsed Dr. Tooth's statement that the Bloemfontein epidemic was a direct result of the Modder river outbreak. All experience went to show that enteric fever attacked fixed camps rather than moving armies. An equivalent of the water-carriage system of drainage had been adopted in some of the American armies in the Cuban campaign. The excreta were received into troughs containing quicklime and water. The American troughs were not emptied into a drain but by means of a pump. Sand-storms and flies propagated enteric fever but were very difficult to combat. Places where flies bred must be destroyed. It was found that food suspended in the neighbourhood of the American latrines became covered with quicklime brought by the flies. Open shallow trenches were to be condemned; they should be 10½ feet deep. The deep trench system was better than the bucket system. Bad teeth, he believed, led to a predisposition to enteric fever. Referring to Professor Wright's statistics of enteric fever in 1899, the case mortality among the inoculated and uninoculated was the same. Reference was made to the case mortality in No. 8 Military Hospital where 2500 cases had been admitted between April and January. The case mortality was 9·2 per cent. In Bloemfontein hospital with 258 cases it had been 8·1 per cent. These figures did not differ very widely from the case mortality in civil hospitals—viz., 7·1 per cent.; and if all cases of simple continued fever had been included the mortality would probably have been identical. In the army it was always the practice to regard cases of "simple continued fever" as distinct from enteric fever and they were never included under that heading.

The discussion was then adjourned.

[1] THE LANCET, July 14th, 1900, p. 95.
[2] THE LANCET, Feb. 9th, 1901, p. 399.

OBSTETRICAL SOCIETY OF LONDON.

Midwifery a Hundred Years Ago.—Exhibition of Specimens.

A MEETING of this society was held at 20, Hanover-square, W., on March 6th, Dr. PETER HORROCKS, the President, being in the chair.

The PRESIDENT delivered his Inaugural Address, taking as his subject the Condition of the Science and Art of Midwifery and Diseases of Women a Hundred Years ago and tracing its progress up to the present time. The classification of labour into (1) natural, (2) laborious, and (3) preternatural by Smellie with the addition of (4) complex added by Denman, was quoted. Natural labour was considered a century ago a most dangerous and difficult procedure, requiring the very highest skill on the part of the accoucheur or midwife. And although the practice of meddlesome midwifery, such as dilating the vaginal orifice or os uteri by means of the fingers, was vigorously condemned, yet it was considered perfectly proper and advisable to prevent rupture of the perineum in a too precipitate labour by forcible resistance to the head when distending the perineum, and if the placenta was not soon delivered by the natural forces traction on the umbilical cord was advised. In preternatural labours two instruments were in use—namely, the vectis or lever, championed by Denman, and the forceps, extolled by Osborn. When craniotomy was needed the head was perforated and the child was left for from 24 to 36 hours in order that putrefaction might supervene and so soften the bones of the head and allow a more easy breaking up by means of the crotchet. Cæsarean section was always fatal to the mother and was rarely, if ever, performed, the patients dying from septic poisoning unless they were carried off by shock or hæmorrhage. Symphysiotomy was condemned as an unjustifiable operation. Post-partum hæmorrhage was very common and was treated by raising the patient up suddenly, in order to make her faint, or by applying cold to the abdomen. Fever was so common after labour that pregnancy itself was defined as a "certain inflammatory disposition of the body," and support was given to this view by the alleged "fizzy" condition of the blood and the "buffy coat" and the "more frequent pulse." Various forms of fever were described, and it was shown that puerperal fever was very common although called by different names. Its treatment was chiefly by bleeding. Convulsions were regarded as due to "morbid irritability," albuminuria being at that time unknown. Abortion and threatened abortion were treated by repeated bleedings. Extra-uterine fœtation was treated on the expectant plan. The bowels were to be kept open, poultices were to be applied, and any abscess forming was to be laid open. Operative procedures were not recommended, as they were nearly always fatal. There was an entire absence of all reference to even ordinary cleanliness on the part of the attendants or of the instruments. The paucity of remarks on diseases of women was pointed out. They were included in books on midwifery and generally occupied about a fifth of the space. Ovarian tumours were treated by tapping when they got so large as to cause distress. Sometimes stimulating drugs were injected into them to try to cure them, or attempts were made to get them to adhere to the abdominal wall. But as a rule they proved fatal sooner or later, for their removal was obviously not even entertained. Cancer of the uterus was treated by palliatives. Fibroids were called "tubercles" and were never interfered with unless they became polypoid. Fallopian tube diseases were practically unknown. The progress made during the century was then pointed out, certain important events being specially mentioned, such as the introduction of chloroform by Simpson, the use of the cephalotribe and the craniotomy forceps, the abandonment of venesection, and the discovery that albuminuria was present in nearly all cases of eclampsia. Semmelweiss's discovery that attendance on post-mortem examinations was highly dangerous for those who were in attendance on lying-in women and Credé's method of delivering the placenta were further instances. The commencement of the antiseptic and aseptic era by Pasteur and Lister was then described and the gradual evolution of this idea by eliminating all pathogenic germs from the attendants' hands, as well as from the patient, the clothing, the skin, the sutures, the needle, the instruments, and the sponges. The improvement in the management of natural labour owing to the knowledge of asepsis was described and it was pointed out that puerperal fever had been eliminated from lying-in hospitals, not by routine douching either of vagina or uterus, which was unnecessary and not devoid of risk, but by a scrupulous observance of the rules of asepsis. Natural labour was described as a physiological act, which considerably over 90 per cent. of women could accomplish safely if left alone. The ease with which Cæsarean section and symphysiotomy could be performed with safety to mother and child was noted, and it was pointed out how nowadays rupture of the uterus was often recovered from by simply packing with antiseptic gauze. This was due probably to the fact that the accoucheur in his previous manipulations had done everything aseptically. The low mortality in operations for extra-uterine fœtation was noted. It was also pointed out that length of incision in ovariotomy and other abdominal sections did not in the least matter nowadays, although it did in the time of Sir Spencer Wells. The great advance in the knowledge of the cause, symptoms, pathology, and treatment of diseases of the Fallopian tubes was shown. In addition to the vast improvements made by the evolution of asepsis it was shown that the transfusion of blood was not only of no benefit but was positively injurious, and yet it was now possible to save patients who were in danger of death from excessive loss of blood by the simple plan of replacing it by an equal amount of fluid, such as water. The improved status of obstetricians was alluded to and a hope was expressed that in the near future great advances might be made, more especially as regards that scourge of mankind and especially of women—namely, cancer—for which at present there was no cure, the knife offering the best chance for escape and that often only for a time.

Dr. ROBERT BOXALL showed a specimen of a Uterus with Large Cystic Fibroid and Subperitoneal Fibroid Nodules, Cystic Ovaries, and a Small Carcinomatous Nodule in the Fimbriated End of the Right Fallopian Tube. This specimen, comprising the greater part of the uterus with its appendages, was removed by operation from an unmarried woman, aged 48 years. When the abdomen was opened the cyst was tapped and after both sets of ovarian vessels had been tied the patient became suddenly collapsed. It was then found that copious hæmorrhage was taking place into the cyst from a venous sinus situated on its inner wall large enough to admit the index finger. This bleeding was controlled temporarily by enlarging the opening into the cyst and turning it inside out. After the operation was completed saline injections were given by the rectum and the patient rallied well.

Dr. ARNOLD W. W. LEA showed a specimen of Sarcoma of the Uterus with Microscopical Sections from a patient, aged 62 years, whose menopause had occurred at the age of 50 years. She had had uterine hæmorrhage and pelvic pain for four months. She died from exhaustion and septic poisoning. Microscopically the growth in the uterus was composed of large round cells with deeply-stained nuclei. The stroma was scanty but contained large blood-vessels. The growth was evidently interstitial in origin, the mucosa being smooth and atrophic.—Dr. C. J. CULLINGWORTH and Mr. ALBAN DORAN discussed the case.—Dr. LEA replied.

Dr. WILLIAM DUNCAN showed a specimen of Multiple Myxomatous Polypi from the Cervix Uteri. The patient was a widow, aged 57 years, who was admitted into the Middlesex Hospital on May 16th, 1900. The growth was composed of between 20 and 30 polypi of various sizes attached to a single base, the largest of which was of the size of a walnut, the others being from one inch to one and a half inches long and one-third of an inch wide. The patient made an uninterrupted recovery.

Dr. DUNCAN also showed two specimens of Uterine Fibroids removed from his last two cases of 100 consecutive intra-peritoneal hysterectomies for fibroids. His mortality was four, his last 53 operations having had no mortality. He attributed his good results to his plan of injecting three minims of liquor strychniæ thrice daily for several days before and after operation, thus diminishing the danger from heart failure and shock, which were the great dangers after hysterectomy.—Dr. AUST LAWRENCE made some remarks.

Dr. W. F. VICTOR BONNEY showed a specimen of Uterus Bicornis Unicollis which was removed from a Hydrocephalic Fœtus presenting besides a double Hare Lip and Absence of the Hard and Soft Palates. There was also a deficiency of

the septum ventriculorum and the aorta came from the right ventricle. The uterus consisted of two corpora terminating in a single cervix. The corpora were distinct at their upper parts, but united below, where their cavities were separated as low as the internal os by a median septum. The recto-uterine pouch of peritoneum was single. The ovaries and tubes were perfect, each coming off from its corresponding cornu. The vagina was single, but presented a well-marked median ridge on its anterior aspect.

HARVEIAN SOCIETY OF LONDON.

Gonorrhœal Iritis.—Exhibition of Cases and Specimens

A MEETING of this society was held on March 7th, Dr. D. B. LEES, the President, being in the chair.

Mr. JOHN GRIFFITH read a paper on Gonorrhœal Iritis. He pointed out that gonorrhœa was a common cause of iritis and was, in fact, a more common cause than syphilis. Not only was it a complication, it was also a sequel of gonorrhœa. Cases occurring at a remote period after the attack were overlooked as regards their causation and being often recurrent were regarded as rheumatic. It was his experience that recurrent iritis was due to gonorrhœa, both this and the rheumatic troubles being subsequent to the attacks of the urethritis. Some instances of recurrent iritis occurred without any history of any rheumatic affection. He disagreed with the view of Mr. Treacher Collins that "syphilis is by far the most frequent constitutional disease to give rise to iritis." Syphilitic iritis was said not to recur and in the recurrent cases there was probably a past attack of gonorrhœa to which the recurrence was due. In his experience cases of recurrent iritis in syphilitic subjects had been associated with rheumatism and a history of urethritis. He gave details of illustrative cases, one of which was that of iritis in one eye, the result of gonorrhœal ophthalmia in the other, in a patient who had never had urethritis. In conclusion, he expressed the view that gonorrhœa was as constitutional a disease as syphilis, that iritis was more often caused by gonorrhœa than by syphilis, and that it often occurred at a period remote from the date of inoculation.—Dr. SYDNEY STEPHENSON said that it was an undoubted fact that iritis or cyclitis might occur many years after the primary lesion of constitutional syphilis. He had once observed an interval of 19 years. Iritis might also be met with long after an attack of malarial fever. From analogy, therefore, he saw no *primâ facie* reason for disbelieving in Mr. Griffith's theory of a post-gonorrhœal iritis.

Dr. WILFRED HARRIS showed a case of Fifth Nerve Paralysis in a woman, 43 years of age, who three years before had fallen, striking the right side of her forehead severely, and had lost consciousness for a few moments. Four and a half months later severe pain began in the forehead at the site of the blow and spread over the right cheek, for which she had most of her teeth extracted on the right side, but derived no benefit. When first seen, two and a half years ago, there was nothing found on examination but some slight numbness of the right side of the face and she also complained of diplopia. Soon after this she was ill for six weeks, suffering from recurrent convulsions, five and six a day, with vomiting and loss of consciousness. She was next seen in January last, when almost complete paralysis of the right fifth nerve was found with the usual distribution of anæsthesia on the scalp, face, and inside of the cheek as far back as the anterior pillar of the fauces and the junction of the hard and soft palates. There was complete loss of taste on the anterior portion of the tongue, but on the back of the tongue on the right side she could just perceive bitter flavours and the electrical sensation to galvanism, and this had markedly improved under treatment. Motor paralysis also was marked, but slight contraction of the right masseter could be felt. She complained also of some loss of sight in the right eye, both discs being slightly pale, though vision was normal in the left eye. The right pupil was slightly contracted and scarcely reacted to light, giving only the smallest movement when exposed to bright diffused daylight, though the left pupil reacted perfectly both directly and consensually. There was no ptosis and it seemed a matter of doubt whether the condition was one of sympathetic paralysis of the pupil or whether it was a case of uni-ocular Argyll-Robertson pupil. Except for the very doubtful optic atrophy there was no other sign of tabes dorsalis and there was no history suggestive of syphilis, as would be expected if Argyll-Robertson pupil existed. The severe trigeminal pain still persisted and Dr. Harris was of opinion that the condition was due to a lesion of the Gasserian ganglion, possibly pachymeningitis, the result of the fall on the forehead, which might have caused a slight fracture of the base. She was being treated electrically four times a week with strong constant current to the forehead and the back of the ear, which always relieved the pain for several hours or even a day or two. If permanent improvement did not result the question of the advisability of removal of the Gasserian ganglion might have to be considered.—Mr. JACKSON CLARKE said that fracture of the base of the skull frequently passed near the apex of the petrous bone and when this was the case the Gasserian ganglion might subsequently become involved in inflammatory tissue. Since Dr. Harris's patient was improving he would not advise operation at present. He (Mr. Clarke) had successfully excised the ganglion by the extra-cranial route in a case of severe tic-douleureux. This distressing affection justified the operation, serious as it was. If he should be called upon to remove the ganglion again he would do so by the intra-cranial route.

Dr. HARRIS also showed a case of Syringomyelia in a woman, aged 42 years, who had suffered from infantile paralysis when three years old, affecting the left arm and leg, the recent wasting and pain due to the syringomyelia being limited to the left arm, while partial left hemianæsthesia both to touch and pain had developed under observation, as also similar sensory loss on the right hand and lower forearm.

Dr. DOUGLAS DREW exhibited two specimens of Carcinoma of the Rectum, one of which was associated with intussusception, which he had successfully removed. The first specimen, which was preserved in the museum of the Royal College of Surgeons of England, showed a nodular growth surrounding five-sixths of the circumference of the rectum and forming the apex of the invagination which had been removed with it. The patient from whom the specimen was removed had a month previously been operated upon for cystic disease of both ovaries. The growth and intussusception were not discovered until after the operation, when great difficulty was experienced in relieving the bowels. The growth reached to within two and a half inches of the anus and the invaginated portion measured about three inches in length. The mass was removed by dividing the anus and rectal wall posteriorly as far as the coccyx, which allowed the growth to be drawn outside. The layers of the invaginated portion were sutured together with silkworm-gut, which transfixed them, and the mass was cut away with scissors by degrees as the sutures were tied. The patient made an uneventful recovery and when seen six months after the operation was in good health. Dr. Drew attributed the successful result to the method of removal employed, which insured the security of all vessels (some of which were of unusual size) before their division—a point of vital importance owing to the enfeebled condition of the patient. Attention was directed to the extreme rarity of the condition, the tendency of malignant disease being to become fixed to surrounding structures and to thus render the occurrence of invagination impossible. On the other hand, invagination was not uncommonly associated with pedunculated growths of the bowel, the explanation being that the tumour dragged on the wall of the bowel and the peristaltic movement gripped it and drove it onwards. The other specimen exhibited by Dr. Drew showed the lower five inches of the rectum with the anus and posterior vaginal wall which had been removed by the trans-sacral route from a woman aged 30 years. Dr. Drew called attention to the advantage of performing a preliminary colotomy in those cases in which it was necessary to remove the anus.

Mr. JACKSON CLARKE showed a man, aged 58 years, from whom he had removed the Rectum for Cancer by the Trans-sacral Method nearly two years ago. The patient was now in good health and the bowel and the sphincter had their normal functions. The first time that he (Mr. Clarke) had done this operation, now some five years ago, he had done a preliminary colotomy which he repaired by a plastic operation before the patient left the hospital. This patient he traced for three years and there had been no return of the disease. Latterly he had dispensed with the preliminary operation.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Specimens.—Stenosis of the Small Intestine as a Sequel of Strangulated Hernia.—Myasthenia Gravis.—Method of Determining the Influence of Drugs upon the Liver.

A MEETING of this society was held on March 6th, Mr. ALEXANDER MILLER, the President, being in the chair.

Dr. ALEXIS THOMSON showed about a pint of Loose Bodies (hyaline cartilage) from the knee of a woman, aged 36 years. She had suffered more or less for 15 years from the joint affection, but it was only during the last six months that she was crippled and unable to walk.

Dr. DAWSON TURNER exhibited a Roentgen photograph of Renal Calculi from a patient operated upon by Professor Annandale. In order to get a successful photograph of such a case the calculi must be dense and large; there must be a short exposure, otherwise the plate becomes fogged (the exposure was two minutes in this case); the bowels must be thoroughly emptied and the movements of the abdominal walls must be limited.

Dr. ALEXANDER BRUCE (for Dr. AFFLECK) exhibited a greatly Dilated Heart from a woman, aged 69 years, who had been in the Incurable Hospital for seven years. She had been tapped 188 times and 53,494 ounces of fluid had been removed from the abdomen, or a weight equal to one and a half tons. There had never been any albuminuria or any dropsy other than ascites. The liver was pulsating and enlarged. The largest amount of fluid removed at once was 414 ounces.

Dr. CHALMERS WATSON showed a series of microscopic preparations illustrating the Primary Importance of Vascular Disease in the Etiology of Chronic Nervous Affections (Comparative).

Dr. ALEXIS THOMSON read a paper on Stenosis of the Small Intestine as a Sequel of Strangulated Hernia. He stated that almost any damage to the intestine terminated in recovery except gangrene of the bowel. Owing to the mechanical constriction at the neck of the hernial sac the bowel became grooved or furrowed. This took place commonly at both ends of the loop of intestine in the sac. This furrow might be only on one side or it might be all round the bowel. As a rule when the bowel was liberated and stroked these furrows disappeared. Sometimes, however, they persisted and if so the patient was not relieved of the obstruction and might die from it. Again, these furrows might afterwards become the site of fibrous stricture, rendering the patient the subject of chronic intestinal obstruction. Two such cases were described. In the first case the patient was a boy, aged two years, who had symptoms of obstruction on the left side together with an undescended testicle. Dr. Stirling of Perth performed herniotomy and noted the presence of two well-marked grooves Three days after the operation the symptoms still persisted though the abdomen was not distended. Dr. Thomson, who saw the boy, then decided that the obstruction was still present. The abdomen was opened and the bowel was found lying close to the incision with well-marked grooves on it. The bowel was greatly distended above this furrow and collapsed below it. The site of the furrows was at the highest part of the jejunum. The bowel was pulled out of the wound and an artificial anus was made. After this, however, the child suffered from malnutrition; when porridge was given it almost immediately escaped from the artificial anus. Another operation was performed and the ends of the bowel were joined, and the child made a perfect recovery. Nine inches of the bowel were resected. A microscopic examination of the bowel at the seat of constriction showed that it was the seat of leucocytosis and escape of red corpuscles, and was beyond the chance of recovery. The second case was that of a Left Inguinal Hernia strangulated for three days. There were two well-marked grooves and the bowel was considered viable, though some peritonitis was present. After the operation the patient remained well for three weeks, when symptoms of chronic obstruction ensued. In 12 weeks he had become greatly emaciated and the abdomen enormously distended, exhibiting the ladder pattern. The diagnosis was obstruction due to grooving. In the first instance an artificial anus was made and 16 days later the bowel was resected, being greatly dilated above the seat of constriction. The microscope showed that the mucosa had disappeared at the seat of stricture.—Dr. F. M. CAIRD said that the condition was exceedingly rare. One case he recalled, however, was in a strangulated femoral hernia. Six months after operation the patient died and it was found that the septum which had formed was very strong and the mucosa greatly destroyed. The death of the bowel took place from within outwards.

Dr. EDWIN BRAMWELL read a paper on Myasthenia Gravis. He considered that the disease was one with which every practitioner should be acquainted, since it was often mistaken for hysteria, since it was often fatal, and since, in some cases at least, a fatal issue could probably be averted by appropriate treatment. He had examined nine cases of the disease. He described the case of an unmarried female, aged 23 years, who had previously enjoyed good health. Ten weeks before he saw her, without apparent exciting cause, she had gradually developed difficulty in speaking, swallowing, and chewing, weakness of the ocular muscles, of the palate, and of the neck and arms. In the morning she was usually free from symptoms, but as the day went on weakness in these various muscles developed. If she continued to use any of the above-mentioned muscles a state of temporary paresis ensued, associated with a feeling of fatigue. The myasthenic reaction was demonstrated in the right biceps muscle. The muscular weakness was unaccompanied by atrophy; the deep reflexes were brisk; the plantar reflex was of the flexor type; the sphincters were unaffected, and there was no objective disturbance of sensation and no affection of the special senses. The absence of any weakness in the legs and of ptosis was an unusual feature of the case. Dr. Bramwell considered the term "myasthenic state" as suitable to denote the peculiar condition of the muscles met with in this disease, whereby they become readily fatigued by voluntary effort. The seat of the lesion was most probably in the motor neurons, and clinical evidence seemed to point to the lower neuron as being at least the chief seat of the affection. Although Déjerine and Thomas had recently described a case in which definite post-mortem findings were present it remained to be seen whether future observations would show that these changes were constant. Attention should be directed to the following points in making a diagnosis: (1) the presence of muscular weakness which was often slight in degree and was unassociated with atrophy; (2) the facility with which the muscles became exhausted both by voluntary effort (myasthenic state) and by faradaism (myasthenic reaction); and (3) the absence of sensory symptoms apart from the fatigue of exhaustion, of sphincter trouble, and of mental disturbance. The prognosis was a matter of great uncertainty. Most cases were characterised by temporary improvements and relapses. Of 60 cases collected by Dr. Harry Campbell and himself 23 had ended fatally. In the majority of fatal cases death had been due to an attack of dyspnœa. Since muscular exertion and mental excitement increased the severity of the symptoms, they must both so far as possible be avoided. All solid food should be minced in order to spare the muscles of mastication and to avoid, so far as possible, the risk of choking. Dr. Bramwell was of opinion that in a severe case, where there was great muscular weakness and the patient's life was in danger, inhalations of oxygen and transfusion with saline fluid might prove of value.

Dr. NOEL PATON and Dr. EASON communicated a paper on a Method of Determining the Influence of Drugs upon the Liver. It had for long been understood that certain drugs diminished the activity of the chemical changes in the body. So far, however, no attempt had been made to determine which tissues or organs were specially affected. It appeared to Dr. Paton and Dr. Eason that some indication of the structures acted upon and of the degree of interference with their functions might be gained by a study of the extent to which the waste nitrogen of the body was elaborated into urea, since it was in the liver that this formation of urea was chiefly carried on. The experiments were made upon dogs which were put on a fixed diet until nitrogenous equilibrium was reached. The dogs were subjected to the agent and the urine was carefully collected and examined. The results were as follows: (1) morphine had no action in the building up of nitrogen into urea; (2) sulphonal had most marked effects, diminishing the elaboration of nitrogen into urea; (3) alcohol had a marked effect on the liver, increasing the uric acid; it reduced the average percentage of nitrogen excreted as urea from 79·5 to 73·0; and (4) coal

gas had a great effect in diminishing the processes of oxidation in the body due to the carbon monoxide present: it diminished the proportion of nitrogen excreted as urea and of sulphur in the oxidised form but did not alter the proportion of phosphorus to nitrogen.

BRITISH ORTHOPÆDIC SOCIETY.—The annual general meeting of this society was held at the City Orthopædic Hospital, Hatton-garden, E.C., on Feb. 16th, Mr. Noble Smith being in the chair.—The reports of the honorary secretaries and treasurers showed that the society was in a sound condition. The three years' term of the town honorary secretary (Mr. Muirhead Little) having expired a hearty vote of thanks for his very valuable services was passed unanimously. Mr. Chisholm Williams and Dr. A. F. Blagg (Bristol) were elected to act as the honorary secretaries. The following members were elected to the council: Mr. W. Armstrong, Mr. W. E. Bennett, Mr. Jackson Clarke, Dr. Percy Lewis, Mr. G. P. Newbolt, Mr. John Poland, Mr. H. A. Reeves, and Mr. Noble Smith. Mr. C. B. Keetley was re-elected treasurer.—The ordinary meeting was then held — Mr. Muirhead Little showed a case of Kyphosis with probably Rheumatic Complications. The patient, a young man, had a slight slip from a horizontal bar whilst practising gymnastics and ever since then had had a grating noise like loud crepitations whenever the right scapula was moved. The noise could be heard at a distance of several feet when the patient was stripped. There was neither pain nor impairment of either strength or motion.—Mr. Noble Smith, Mr. Jackson Clarke, and Mr. John Ewens commented on the case.—Mr. Muirhead Little also showed a case of Injury to the Upper Epiphysis of the Humerus in a boy who had been shown before the society on a previous occasion. With a view of remedying the deformity he had operated by dividing the humerus below the insertion of the deltoid and rotating it out about 30°. The hand and arm which had been quite useless could now be used fairly freely and the patient could rotate his arm with more or less ease.—Mr. Noble Smith read notes of a case of Separation of the Epiphyseal Head of the Femur in a girl, aged 17 years, who consulted him in 1885, the case being one of the earliest recorded of this particular injury.—Mr. John Poland opened a discussion on the Results of Injuries and Diseases of the Epiphyses and their Treatment.—Mr. Jackson Clarke, Mr. Muirhead Little, Mr. Ewens, and Mr. Chisholm Williams took part in the discussion.

MANCHESTER THERAPEUTICAL SOCIETY.—At a meeting of this society held on Feb. 27th Dr. J. Dreschfeld, the President, opened a discussion on the Use of Urotropine in Urinary Affections. He had obtained the most satisfactory results from the use of this drug in the pyuria of cystitis. It answered well in cystitis due to hypertrophy of the prostate, gonorrhœa, gout, after typhoid fever, and in arsenical poisoning. It was also useful in pyelitis, four of six of such cases doing well with urotropine. One of these cases was undoubtedly tuberculous and two were calculous in origin. The two unfavourable results were in tuberculous cases. As a solvent for uric acid its value was doubtful, though good resulted in two cases after its use which had resisted other treatment. In one case of gouty sciatica the drug seemed to give much relief. The mode of administration was to give the drug in from 10- to 15-grain doses three times a day in powder form placed on the tongue and followed by a drink of water. This dose had been continued for weeks in some cases. Large doses sometimes caused tenesmus and pain in the bladder, and some patients felt sick and depressed when taking it. Bismuth with the powder tended to prevent the nausea.—Dr. Dixon Mann had used the drug with beneficial results in anomalous cases of cystitis with no definite cause. He found it quite useless in a case of idiopathic bacteriuria — Mr. W. P. Montgomery confirmed some of the above results and thought the drug most useful in cystitis due to enlargement of the prostate, especially when the urine was alkaline.—Dr. R. T. Williamson and Dr. R. B. Wild also spoke favourably of the drug, the former having had good results with it in a case of compression myelitis with paralysis of the bladder.—Dr. Wild read a paper summarising the Effects Produced by Injections of "Coley's Fluid" in eight cases of Malignant Disease, in no one of which was any permanent benefit produced.

MIDLAND MEDICAL SOCIETY.—The sixth ordinary meeting of this society was held on Feb. 27th at the Birmingham Medical Institute, Mr. Jordan Lloyd, the President, being in the chair.—Mr. L. P. Gamgee showed a man, aged 32 years, who, in October, 1900, suffered from Acute Pneumonia. During his illness the right leg and afterwards the left leg became greatly swollen and œdematous. He now had œdema of both legs with very marked dilatation of the superficial epigastric and circumflex iliac veins on the right side, and of the superficial circumflex iliac veins on the left side, the left superficial epigastric vein being thrombosed. The condition was apparently due to double femoral thrombosis.—Dr. J. W. Russell showed a man, aged 26 years, who had suffered from "Blood-poisoning" in June, 1900. No definite information could be obtained respecting this attack except that it was accompanied by pain and tenderness over the right femoral vein. Four weeks later similar symptoms appeared on the opposite side. There were now a solid œdema of both legs and dilatation of the superficial epigastric veins on both sides, most marked on the right. The right superficial circumflex iliac vein was also dilated.—Mr. John W. Taylor showed a specimen of Calcified Fibroma of the Ovary removed from a young married woman, aged 26 years. Mr. Taylor commented on the rarity of fibroid tumour of the ovary and on the extreme rarity of one which had undergone such calcareous or (possibly) bony transformation. The specimen was as hard as stone and undoubtedly caused occasional contusions of bowel on unguarded movements of the patient.—Dr. A. Douglas Heath read a paper on Dermatitis from Common Irritants, and Dr. T. Sydney Short read notes on three cases of Gastralgia.

HUNTERIAN SOCIETY.—The second annual Hunterian Society's lecture was delivered by Sir William Mitchell Banks on Feb. 27th upon the Neglect of the Actual Cautery, Dr. Dundas Grant, the President, being in the chair. The lecturer said it was difficult to explain how so valuable a remedy as the actual cautery should have fallen almost entirely out of use; he could only ascribe the fact to "fashion." The operation was painless, being done under chloroform, and the after-pain was easily controlled. Failures in the use of this remedy were often due to a want of thoroughness in applying it. The iron, which should be at white heat, required a longer application than was usually believed to produce a good result. The skin should be almost completely destroyed. The cases most suitable for this treatment were those which were accompanied by deep-seated pain, such as periostitis and ulcerative arthritis; pruritus ani also in its most obstinate form yielded to this remedy. Cases were described in which immediate relief had been effected after long and continuous suffering. The cases of pruritis ani had presented patches of skin resembling damp wash-leather—a characteristic appearance of the chronic form of this disease.

ÆSCULAPIAN SOCIETY OF LONDON.—A meeting of this society was held on March 8th, Mr. W. C Worley, the President, being in the chair.—Dr. A. Haig read a paper on the Causation, Prevention, and Treatment of Anæmia. He defined anæmia as defective metabolism due to a defective circulation, which in turn was an outcome of uric acid excess in the circulation. He pointed out the slow "capillary reflux" in such defective circulations in a diabetic man and connected this state with Raynaud's disease—a more aggravated condition of the same circulatory defect. He also pointed out that the alternating chlorosis and rheumatism of girls was readily explicable on the theory of the alternate taking up and throwing out from the circulation into the joints of uric acid—the blood breaking up as a consequence of the uric acid in the circulation, producing chlorotic anæmia. He said that he more often treated anæmia by mercury than iron and always by advising the discontinuance of a uric acid diet, in which the avoidance of tea, coffee, and cocoa was as essential as meat and beef-tea. He showed his card for the ready estimation of the blood decimal and asserted that only with a diet free from uric acid was the best blood obtainable.

ROCHDALE AND DISTRICT MEDICAL SOCIETY.—A meeting of this society was held on March 7th.—Mr. W. Stanwell read a paper on Diabetes. In discussing the etiology of the disease he gave an account of the physiological researches on carbohydrate metabolism. An interesting point was that in one case careful observations had shown that on a diet with potatoes the patient had less sugar in the urine than on the same diet without potatoes. A demonstration was given of various useful tests for sugar in urine, including, besides Fehling's and other well-known reactions, those with

methyl blue and safranin. The precipitation of glucose in urine by benzoyl chloride was shown and the fact of all the sugar being contained in the precipitate and none in the filtrate was demonstrated. The phenyl-hydrazin test was performed and the crystals were shown microscopically. The nitro-prusside of sodium test for acetone was also shown. For quantitative determination in ordinary practice the fermentation method was recommended.—Dr. W. J. Kerr, Dr. J. A. Ashcroft, Mr. J. Chadwick, and Dr. J. Melvin discussed the paper.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held at the Royal Kent Dispensary, Greenwich-road, on March 1st, Dr. Septimus Sunderland, the President, being in the chair.—Mr. Chisholm Williams and Dr. Walls showed a case of Ventral Hernia.—Dr. James Donelan read notes of a fatal case of Exophthalmic Goitre and showed a specimen.—Dr. F. S. Toogood showed cases of Congenital Heart Disease and Infantile Scurvy.—Dr. Dockrell exhibited some "Paratuberculides" with their microscopic conditions.—Mr. Chisholm Williams read notes on, and showed specimens of, Periosteal Sarcoma of the Tibia and Melanotic Sarcoma of the Little Toe.—Dr. Henry showed a case of Retinitis Pigmentosa with Nystagmus.—The cases were discussed by Dr. Dockrell, Dr. Scholefield, Mr. R. V. Donnellan, Dr. Toogood, Mr. J. P. Purvis, Mr. C. C. Weeks, the President, Mr. A. E. Joscelyne, and others.

Reviews and Notices of Books.

A Text-book of the Practice of Medicine. By JAMES M. ANDERS, M.D., Ph.D., LL.D., Professor of the Practice of Medicine in the Medico-Chirurgical College, Philadelphia. Illustrated. Fourth edition. London and Philadelphia: W. B. Saunders and Co. Pp. 1292. Price 24*s*.

THE third edition of this work appeared in September, 1899, and that another edition should be so quickly called for is ample evidence of the favour with which the work has been received by practitioners and students. The book is probably better known in America than in England, and we may therefore say that it is intended to introduce the student to the present state of our knowledge of the practice of medicine in general and of the diagnosis, differential diagnosis, and treatment of disease in particular.

The differential diagnosis has in many instances been tabulated. This is a most convenient plan for reference. The busy practitioner has no time to turn over several volumes to find the main diagnostic points in diseases closely simulating one another, but by means of such tables as are here given the symptoms, physical signs, &c., that are to be mainly relied upon in coming to a conclusion can quickly be comprehended. These tables are accurately drawn out and form a valuable and distinctive feature of the work.

The present edition has been fully brought up to date and the text has been carefully revised throughout, and considerable new matter has been added with a view to enhance the general usefulness of the work. The section on Diseases of the Digestive System in particular has received numerous additions. Not only have several of the sections been re-written, but new ones on some of the rarer or more fully recognised conditions have been added, such as those on Sprue, Ileo-colitis in Children, and Acute Cholecystitis. The remarks on Sprue are very brief, and we scarcely think that any practitioner would be able to recognise a case from the description here given. The section on Acute Infectious Cholecystitis is more full. Dr. Anders recognises three pathological varieties—catarrhal, suppurative, and phlegmonous; the bacteriology is dismissed in two lines, but the symptoms, and more particularly the differential diagnosis, are well described.

The part of the work devoted to a consideration of Diseases of the Blood in the Ductless Glands is complete and contains a summary of the many advances recently made in our knowledge of this subject. Dr. Anders divides the subject of anæmia into Primary or Essential Anæmia and the Secondary Anæmias, including under the latter "leukocytosis," "leukocythæmia," "pseudo-leukæmia," "splenic anæmia," and "anæmia infantum pseudo-leukæmia," designating by the last-named a form of anæmia first described by von Jaksch which occurs in childhood and which has certain similarities to leukæmia but is without the tendency to a fatal end.

The book as a whole may be described as very practical; theoretical questions are but little touched upon. We believe, therefore, that it will be found more useful to practitioners than to students who are preparing for their examinations.

A Manual of the Diagnosis and Treatment of the Diseases of the Eye By EDWARD JACKSON, A.M., M.D., Emeritus Professor of Diseases of the Eye in the Philadelphia Polyclinic. With 178 Illustrations and Two Coloured Plates. London and Philadelphia: W. B. Saunders and Co. 1901. Pp. 604.

PROFESSOR JACKSON, the author of this work, is well known both in the United States and in this country as an ophthalmologist of repute who has studied with care, and written well upon, the dioptrics of the eye, and as he has his own clinic in Philadelphia and his own class to instruct it is not surprising that he should find it necessary to publish a treatise which constitutes an authoritative exposition of the views and opinions that he has been led to form and of the methods of treatment, operative or otherwise, on which he is disposed to rely. The general arrangement of the work offers no novelty and differs but little from the ordinary manuals. The examination of the patient both by direct and oblique illumination, by means of the ophthalmoscope, and by means of lenses determining his refraction; disorders of the ocular movements; diseases of the several tunics and humours; glaucoma; diseases of the lids, lacrymal apparatus, and orbit; injuries of the eye; topical remedies; operations and the ocular symptoms connected with general disease—are the titles of the several chapters, and embrace all the forms of eye disease that are likely to fall under the observation of the general practitioner. Professor Jackson is catholic in his pathology and treatment of ophthalmic disease. He gives mercury in iritis; admits two forms of sympathetic disease—sympathetic inflammation and sympathetic irritation; and acknowledges that up to the present time the etiology of the sympathising eye, or the channel through which the exciting eye acts upon the uninjured one, is unknown. The different theories that have been advanced to explain this affection are briefly but clearly given. He practises iridectomy for cases of increased tension in preference to sclerotomy or Hancock's operation. He uses a knife of his own device for the section of the cornea in the extraction of cataract. It is a narrow Beers knife, with the basal angle much rounded, and no doubt acts well. In this operation it is not so much the form of the knife as the skill with which the operator manipulates it that is of importance, and those who have lived long have seen excellent results with many different forms of instrument. Professor Jackson's incision is made well within the periphery of the cornea and he omits the iridectomy.

The principles of the direct method of examination with the ophthalmoscope for the measurement of refraction are clearly given. The author justly observes that this method cannot be relied upon for the accurate prescription of glasses. The subject of skiascopy is treated of in several parts of the book. There is a short section devoted to it, but it is also considered under the head of astigmatism; he concludes his remarks on this point by recommending to the student the stenopæic slit or the parallel lines with spherical lenses if he

cannot use skiascopy or has no ophthalmometer, the usual condition, we imagine, of the student. Some examples of the combinations of glasses required for the correction of varying degrees of astigmatism might with advantage have been given. Professor Jackson commends the use of glasses at as early an age as three in cases where a tendency to squint is observed. In speaking of myopia he attributes that affection to two circumstances, first to softening of the scleral coat by congestion and secondly to pressure of the muscles around the eyes in fixing near objects. Surely other potent causes are insufficient light and close work on near objects. He speaks with approval of the removal of the lens in cases of high myopia. We doubt whether it will come into very general use. A useful bibliography terminates each chapter. The coloured illustrations are poor and rough, contrasting badly with the beautiful plates issued by the Germans, and showing that the Americans, like ourselves, are far behind that ingenious nation in chromolithography. The work has been written with care, has but few typographical errors, and may be considered to represent fairly in moderate compass the present state of ophthalmology.

Progressive Medicine: A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D., assisted by CHARLES ADAMS HOLDER, M.D. Vol. III. September, 1900. London: Henry Kimpton. 1900. Pp. 408. Price 12*s.* 6*d.*

THE general scope of this work is too well known to need any introductory remarks from us. The present volume is concerned with diseases of the thorax and its viscera, including the heart, lungs, and blood-vessels, diseases of the skin, diseases of the nervous system, and obstetrics. The first section—that on Diseases of the Thorax and its Viscera—is by Dr. William Ewart who gives an excellent and valuable *résumé* of the more recent work which has been published concerning these diseases. He refers to the "serum treatment" of pneumonia, which, although the rational remedy, has hitherto fallen far short of our requirements, but of which some observers, more particularly Dr. Washbourn, speak hopefully but with considerable reservation. The contributions on Pulmonary Tuberculosis to which Dr. Ewart refers are very numerous. Amongst other observations he refers to those of Huguenin, who maintains that the clinical distance between the cases of virulent type and that (fortunately more frequent) of short, local, non-infective, often latent and generally curable affections is to be attributed to the presence or absence of life in the infecting bacilli. In infections with dead bacilli a spread of the disease is impossible, as dead bacilli do not multiply, and no infections of glands and secondary infection with cocci are observed. Bacilli may be found in the sputum for weeks, but inoculation proves them to be dead. These observations are interesting, and if the facts are corroborated by other observers should prove of considerable value from a point of view of prognosis. The surgical treatment of pulmonary tuberculosis is also referred to, although but little, if any, advance has been made in this direction.

In considering the treatment of aneurysm Dr. Ewart comments on the hypodermic injection of gelatin. The various published reports are altogether favourable, although it must be constantly borne in mind that this treatment is attended by risk and that the fatal accidents reported may occur again in spite of all precautions. The internal administration of gelatin has also been tried with encouraging results. No harm could arise from adding gelatin to the scanty diet of patients undergoing the simple rest cure, though, as Dr. Ewart remarks, we should not expect much result if the patient was taking at the same time iodide of potassium which rather tends to keep the blood fluid.

Much work has recently been done in the examination of the blood. The value of the observation of leucocytosis as an indication of the formation of inflammatory affections, such as appendicitis, is gradually being recognised and receives due notice in this volume.

We would also draw attention to the paragraphs on the use and abuse of digitalis, a subject upon which some confusion still exists. Dr. Ewart here states the indications for the administration of the drug or the reverse very minutely, and his remarks are well worthy of perusal.

That part of the volume devoted to "Diseases of the Skin" has been edited by Dr. Henry W. Stelwagon. His observations on X-ray Dermatitis and Eczema are particularly noteworthy.

Dr. William G. Spiller is responsible for the section on Diseases of the Nervous System. He has paid especial attention to clinical neurology, and papers of interest only to the anatomist or pathologist have received but slight recognition. We commend this course, for in a publication of this nature those matters which are of service to the practitioner should be especially selected. The paragraphs devoted to Tumours of the Brain are very interesting and we endorse Dr. Spiller's opinion when he says: "If men would sacrifice their vanity to the extent of publishing their mistaken diagnoses in important cases we should probably learn more than we do from cases in which a very careful diagnosis is made *after* the necropsy has been performed, because the mistaken diagnoses are often the instructive ones." We all of us learn by our errors but are chary of imparting that means of our knowledge to others.

The subject of Aphasia is a difficult one and Dr. Spiller has carefully recorded the principal advances which have been made in the investigation of this symptom.

"Babinski's reflex" would appear to be a valuable sign in distinguishing between certain organic and functional disorders, and it is to be hoped that the value of this sign will be proved by further observation. In organic lesions of the cord Babinski found that the normal flexion of the toes in the plantar reflex is replaced by extension, and the phenomenon has been observed in other conditions, but never in "hysterical" affections.

The work which has been done in Obstetrics is commented on by Dr. R. C. Norris and the abstracts have been selected with the same care as in the preceding sections. We note some valuable remarks on the Heart in Pregnancy, a matter which frequently gives rise to much anxiety on the part of practitioners and the patients' friends. The danger of heart disease in pregnancy has probably been usually over-rated, but at the same time the question as to whether a woman suffering from valvular disease should be advised to marry or not is an extremely difficult one and each case must be decided individually.

We consider this publication a most useful one and to those practitioners who desire information on the subjects treated therein we can certainly recommend it.

Studies from the Department of Pathology of the College of Physicians and Surgeons, Columbia University, N.Y. Vol. VII., for the Collegiate Year 1899–1900. Reprints.

THE Department of Pathology, the director, Dr. Mitchell Prudden, and the authors of the papers collected in this volume, are alike to be congratulated on the amount, variety, and value of the work published. The book contains a series of 14 papers dealing for the most part with experimental pathology and all marked by great care and completeness. The papers are reprints from the current medical journals in which they originally appeared. This method of publication is adopted because, in the opinion of the director, "the aims of such varied studies are more certainly accomplished" thus than by departmental or university

publication. This plan leads to a certain loss of typographic homogeneity, and if any adverse criticism of the work may be made it is that there appears to be a similar lack of homogeneity in the subject matter of the papers, there being no appearance of any leading idea round which the work of the department is grouped.

Dr. E. Hodenpyl treats in the first paper of Miliary Tuberculosis of the Pleura without other tuberculous lesions of the lung, and calls attention to the fact noted by Professor Delépine and others that infection may take place in a direction opposed to the lymph and blood streams. Practical hygiene is represented by a paper by E. W. Firth on the Relation between the Micro-organisms of the Air and Various Methods of Cleaning adopted in Public and Other Buildings. The observations were made by means of a simple Petri sand filter attached to a small portable apparatus devised by Dr. Prudden and showed that dry-dusting doubles the number of organisms present in the air and that these do not settle again for some long time, dependent on ventilation and other factors. There is a short, able, practical experimental study of secondary cataract by Dr. W. H. Bates, designed to discover the cause and to avoid the occurrence of this complication. He concludes that secondary cataract is not caused by a thickening of the posterior capsule but by the development of connective tissue replacing fibrin formed in the anterior chamber by the coagulation of fluid exuded at the time of operation. A long paper by Dr. G. Langmann treats of Snakes and Snake Poison, in which he concludes that, in spite of some weighty opposition, antivenene (Calmette) must be considered the only reliable antidote. An elaborate, detailed, and accurate account of the pathology and treatment of tetanus, together with a complete bibliography, is contributed by Dr. A. V. Moschcowitz. The paper includes an analysis of no less than 290 recorded cases treated by subcutaneous injection of antitetanic serum and 48 cases treated subdurally. The mortality in tetanus appears to be more dependent on the severity, as estimated by the length of the incubation period, than on the treatment. There is a greatly diminished mortality when the incubation period exceeds ten days.

Traumatic Hæmorrhages into the Spinal Cord are treated by Dr. P. Bailey and pharmacology is represented by Dr. S. J. Meltzer's paper on the Toxicology of Potassium Chlorate, while a very valuable paper on Serum Globulin and Diphtheria Antitoxin is contributed by Dr. P. H. Hiss and Dr. J. P. Atkinson. In this they produce evidence that the magnesium sulphate precipitate from blood serum contains all the antitoxin.

There are other valuable papers, including one on a Streptothrix Infection of the Lungs by Dr. C. Norris and Dr. J. H. Larkin, in which a new method of culture on fresh tissue is described.

The articles are sufficiently and in some cases admirably illustrated. We should be glad to see a collection of articles of equal merit to these issued by the pathological departments of our own universities. In future issues, for the instruction of possible English readers, it would be well if the editor of these studies would indicate the price of the volume and where it may be obtained.

Kursus der Pathologischen Histologie mit einem Microskopischen Atlas enthaltend 35 Tafeln. (*Course of Pathological Histology, with Atlas.*) Von Dr. L. ASCHOFF, Privat-Docenten und 1. Assistenten am Pathologischen Institut zu Göttingen; und Dr. H. GAYLORD, Professor der Chirurgischen Pathologie und Direktor des Staatlichen Instituts für Krebsforschung der Universität Buffalo. Wiesbaden: J. F. Bergmann. 1900. Pp. 340. 35 Plates. Price 18*s*.

THIS work consists of a systematic description of the pathology of the various organs in conjunction with a series of excellent photo-micrographs designed to illustrate the pathological histology of the lesions. The atlas consists of 35 plates, each containing some six or eight photographs reproduced by a collotype process which has the great advantage that it permits the use of a lens and thus enables many details to be observed which are not visible to the naked eye. Speaking of the photographs as a whole they are excellent in their definition, equality of lighting, and other technical qualities. The reproductions are worthy of the photographs. Such illustrations are, as a rule, so expensive as to be prohibitive, and the beautiful atlas of Karg and Schmorl is for this reason out of the reach of the student. The price of the present work is so small that it is difficult to understand how it can have been produced profitably. There are in addition to the photographs a few plates of coloured drawings and the last three plates of the atlas form a new departure in pathological illustration, being reproduced by a photographic three colour-printing process which certainly seems, especially in the case of the last plate, to give very good results. The photographs appear on the whole to be good illustrations of the pathological processes, but there is undoubtedly a limit to the value of a photograph for this purpose, and it is doubtful whether a student would learn much from the representations given of round-celled and spindle-celled sarcomata. Most of the illustrations are taken with low powers and this diminishes the photographic difficulty greatly but renders some of the illustrations of micro-organisms of slight value, though there are some good representations of anthrax bacilli in tissues. There appears to be no indication of the magnifications employed, and in many cases the methods used in the preparation of the specimens are not given. This is a fault of some importance, as it becomes difficult to interpret such illustrations, for instance, as those which represent lesions of the spinal cord, and there seems to be no illustration of Marchi's method (given in the text), which alone enables the degeneration of individual fibres to be traced. There is an excellent photograph of the rare condition, argyria of the kidney. The systematic description is preceded by a section on histological methods which is good and up to date. The processes are described in a thoroughly practical manner. The fixing and hardening methods are clearly given and there is an excellently succinct but sufficient description of the short and rapid methods of use to the practising physician. Special methods are conveniently arranged under headings indicating the objects for which they are employed. Macallum's method for the demonstration of iron appears to be omitted. The importance of the hardening methods used in relation to the stains to be subsequently employed is clearly pointed out.

The last section of the book deals with Photo-micrography. There is a good index. The book is a valuable addition to existing works on pathological histology.

LIBRARY TABLE.

A Manual of Syphilis and the Venereal Diseases. By JAMES NEVINS HYDE, A.M., M.D., Professor of Skin, Genito-urinary, and Venereal Diseases, Rush Medical College, Chicago, &c.; and FRANK HUGH MONTGOMERY, M.D. Associate Professor of Skin, Genito-urinary, and Venereal Diseases, Rush Medical College, Chicago, &c. Second Edition, Revised and Enlarged, with 58 Illustrations in the Text and 19 Full-page Lithographic Plates. 1900. London and Philadelphia: W. B. Saunders and Co. Pp. 594. Price 17*s*.—This second edition is in many ways a distinct advance on the first, and especially worthy of notice is the addition of a series of lithographic plates taken from Mracek's "Atlas of Syphilis and the Venereal Diseases," which we reviewed in 1899. In this volume they are on a rather larger scale than in Mracek's works and the general effect is certainly

better. The account of gonorrhœa has been almost rewritten, and many minor alterations have been made. The description of syphilis is excellent, and the only criticism which we would offer is that the authors' objections to the employment of "primary," "secondary," and "tertiary stages" in the account of the disease are somewhat fanciful. No one at the present time imagines that in any particular case the disease must pass through all these stages *seriatim*, and the fact that these terms were misused and misunderstood at one time is not a sufficient reason for their disuse in view of the convenience of their employment. A valuable chapter is that on syphilophobia and venereal hypochondriasis. The descriptions of the forms of gonorrhœal rheumatism are hardly as clear as might be desired. There are three distinct varieties of joint affection in gonorrhœa; in the first form no bacterial infection of the synovial cavity can be discovered, and we are justified in looking on the synovitis as the result of the action of the toxins which have been absorbed; in the second form the gonococcus is found in the exudation into the joint; and in the third form, in which the symptoms are most severe, the synovial cavity is infected by the gonococcus and by some other pyogenic micro-organism as well. The results of the several forms serve usually to differentiate them. The book is a trustworthy guide to an important subject.

On Sanitary and Other Matters. By GEORGE S. KEITH, M.D. Edin., LL.D. Aberd, F.R.C.P. Edin. London: Adam and Charles Black. 1900. Pp. 124. Price 2*s* 6*d*.—If obvious sincerity could carry conviction this little volume of essays would effect reforms in our national hygiene of a very drastic order. For instance, Dr. Keith bewails the reckless waste of water manifest in the methods we adopt for urban sanitation, suggests the substitution of "earth and pail" for water and pipe, and of a wet sheet for the morning tub. Although strong arguments are brought to bear on the reforms suggested they are hardly likely to shake our faith in such thoroughly British institutions as the water-closet and the cold bath. In other departments of personal hygiene Dr. Keith's views are more likely to gain adherents. Of the rapid and progressive deterioration of the young in this country the author supplies sufficient proof, and if his reforms could be generally accepted doubtless there would be a great conservation of national vigour. Chapter V. is devoted to the Story of an Eye, a most instructive example of the efficacy of Dr. Keith's methods. The invaluable experiences of a long life's work in general practice by a man of keen observation and Scotch shrewdness are well worthy of respectful attention. Few practitioners at the end of a busy career have the energy to record for the benefit of younger men the experiences which their age and observation can provide. Many of the text-books which young practitioners and students read for their instruction are written by authors who can claim neither of these essentials. Dr. Keith's experiences should not be overlooked by practitioners who take an intelligent interest in natural methods of healing.

FOREIGN UNIVERSITY INTELLIGENCE.—*Basle:* Dr. Fritz Egger has been promoted to an Extraordinary Professorship of Medicine, and Dr. Carl Hägler to an Extraordinary Professorship of Surgery.—*Berne:* Dr. Otto von Herff of Halle has been appointed to the chair of Midwifery and Gynæcology vacated by the migration of Professor Bumm to Halle.—*Cracow:* Dr. Stanislaus Maziarski has been recognised as *privat-docent* of Histology.—*Tübingen:* Dr. C. Bürker has been recognised as *privat-docent* of Physiology.—*Vienna:* Dr. Anton Freiherr von Eiselsberg of Königsberg has been appointed to the chair of Surgery held by the late Professor Eduard Albert.—*Zürich:* Dr. M. Freudweiler has been recognised as *privat-docent* of Hydrotherapy and Dr. Otto Veraguth as *privat-docent* of Neurology.

Analytical Records
FROM
THE LANCET LABORATORY.

TABLOIDS: (1) QUININE BISULPHATE AND CITRATE (EFFERVESCENT); AND (2) PILOCARPINE NITRATE.
(BURROUGHS, WELLCOME, AND CO., SNOW-HILL-BUILDINGS, LONDON, E.C.)

THE combination of a saline febrifuge such as potassium citrate with quinine is valuable. In this tabloid one grain of quinine bisulphate occurs with 15 grains of potassium citrate. The tabloid is first powdered before the addition of water when an agreeably effervescing draught is obtained. The draught offers also the advantage of being sedative in its effect upon the gastric coats owing to the carbonic acid gas. Tabloids of pilocarpine nitrate contain one quarter and one-tenth grain respectively of the alkaloidal salt. It appears that there is considerable variation in the physiological effects of the galenical preparations of jaborandi, but that the use of pilocarpine is reliable for full physiological action. The best salt for the purpose is said to be the nitrate, which has been used with promising results in uræmia. The salt also has been tried in all stages of croupous pneumonia and in diphtheria. The pilocarpine nitrate tabloid is quickly soluble in water.

(1) DIGIT TOILET SOAP; AND (2) LAUNDRY WASH.
(THE WAGEL SYNDICATE, LIMITED, 254A, HIGH HOLBORN, LONDON, W.C.)

The sample of toilet soap submitted to us gave satisfactory results on examination. It contained a minimum of water, is economical in use therefore, and, more important still, the ingredients are correctly adjusted so that there is no alkali in excess. The soap further is free from irritants. The laundry wash is a soap specially prepared for the cleansing of linen and similar fabrics. It is of jelly-like consistence and contains a proportion of free alkali. It is very cleansing and contains no injurious chemicals.

CYPRIDOL.
(WILLCOX AND CO., 49, HAYMARKET, LONDON, S.W.)

"Cypridol" is the name given to a so-called "bin-iodised" oil. For administration the oil is contained in capsules. It is a clear yellowish oil with a creasote-like smell. According to our analysis it contains both mercury and iodine. It is regarded as containing a "nascent bin-iodide" dissolved in a strictly neutral antiseptic oil. It is given by the mouth or by hypodermic intra-muscular injection in venereal diseases. There is considerable testimony in favour of administering mercury in this form and by these methods.

"MÜNCHENER LÖWENBRAU" LAGER BEER.
(THE MUNICH LION-BREW CO., 62, HOLBORN-VIADUCT, LONDON, E.C.)

This beer is brewed in Munich and sent to this country in special ice wagons and subsequently bottled at the depôt in London and Pasteurised. On analysis it presents the characteristic features of the well-known brown Bavarian beer. The results were as follows: malt extractives, 6·09 per cent.; mineral matter 0·17 per cent.; alcohol, by weight 4·62 per cent., by volume 5·78 per cent., equal to proof spirit 10·13 per cent. We have carefully tested the beer for impurities but with negative results. It is quite free from metallic contamination and there is not the slightest evidence of even the minutest quantity of arsenic which analysis is able to detect. The commendable point about Munich beer is that, while highly nutritious, exceeding in most instances the value in this respect of English beers, it contains a minimum of alcohol. Its flavour is pleasantly malty and the beer is undoubtedly wholesome and refreshing, this last quality being contributed

in no small measure by the presence of an important quantity of the soluble phosphate of potassium derived, of course, from the malt.

LOZONE.

(LOZONE WORKS, MARTIN'S-BUILDINGS, VINE-STREET, LAMBETH, LONDON, S.E.)

"Lozone" is a special preparation of peroxide of hydrogen which by reason of its purity is well suited for medicinal use. Peroxide of hydrogen has been used internally in both gastric and intestinal troubles. The special feature of "lozone" is that, unlike most preparations of peroxide of hydrogen, it is quite stable. We gained proof of this by the fact that analysis showed on two occasions precisely the same result in regard to its oxygenating value. We found that on one occasion the liquid contained 2·26 volumes of available oxygen. Three weeks later this value proved to be exactly the same, so that no loss of strength had taken place, despite the fact that no special precautions had been taken against external influences, such as light or exposure to the air. The preparation may obviously be relied upon.

GLYCEROLES (GLYCERINE TINCTURES).

(MACKEY, MACKEY, AND CO., 175, GRANGE-ROAD, BERMONDSEY, LONDON, S.E.)

The powerful solvent action of glycerine on the active principles of drugs is well known, and doubtless, from the pharmacological point of view, glycerine as an extractor is, in reality, an advance on alcohol. We have received specimens of the glycerine extracts or tinctures of nux vomica, opium, hyoscyamus, digitalis, cardamoms, and compound camphor. They are perfectly clear and staple preparations, and very convenient for administration or dispensing. The glyceroles are growing in favour. They are certainly elegant preparations.

KOLAX.

(FLETCHER, FLETCHER, AND CO., HOLLOWAY, LONDON, N.)

Kolax (or laxative cocoa) has been prepared in response to a want frequently expressed by practitioners for a simple, trustworthy, and palatable laxative. Kolax contains a well-known laxative extract and malted cocoa proves an excellent vehicle for its administration. The cocoa used is of excellent quality, as, according to our analysis, we found no extraneous fat or any evidence of alkali being used to make the cocoa "soluble." The combination affords a laxative in an agreeable guise.

KOLA WINE.

(L. M. DURLACHER, AGENT, 12, SAVAGE-GARDENS, TRINITY-SQUARE, LONDON, E.C.)

The genuineness of this wine is attested to by the fact that by operating on a large quantity we easily separated crystals of caffeine from it. It is said to be prepared with the best Jamaica kola nuts. The vehicle is a good port wine. On analysis the following results were obtained: extractives with sugar, 12·13 per cent.; alcohol, by weight 15·67 per cent., by volume 19·28 per cent., equal to proof spirit 33·79 per cent.

THE ARMY ESTIMATES.

MR. BRODRICK, who has admittedly proved himself to be a man of courage and ability, made a long and comprehensive statement in introducing the army estimates last week and clearly outlined the main points in the Government's new scheme of military re-organisation. In the first place, it may be stated that the army estimates amount to close upon £88,000,000, and it is proposed that the total strength of the British army should be brought up to nearly 700,000 men. Among the more important points raised by the War Minister were the necessity of having three army corps always ready, the increase of the artillery and mounted branches of the service, and the urgent need of reform in our medical and transport arrangements. Apart from war we have to maintain 115,000 men in India and the colonies and are dependent on voluntary recruiting. The existing system is to continue but is to be vastly developed; recourse is not to be had to compulsory service, but an efficient defence must nevertheless be had somehow, and there is to be no separate Indian army. It would be impossible, as well as altogether beyond our province, to accompany Mr. Brodrick through a speech extending over two and a half hours in delivery, but we may say that it is probably the most important and sweeping declaration of military policy and reform that has been made in our time—certainly since the abolition of purchase and the introduction of short service in the army

The new necessities of the empire have been accentuated and brought home to us by the experience and lessons which have been obtained and learned in South Africa, as well as by recent debates on the subject of army administration in the House of Lords. The consequence of all this has naturally been to focus public attention on the subject and to call forth an earnest attempt to frame a large, bold, and comprehensive measure of some sort dealing with every branch and department of the service. This attempt Mr. Brodrick has now made, and he has very plainly indicated the standard at which he is aiming and the principles by which he has been guided. There were many people who thought that the report of the Royal Commission on the South African Hospitals would share the fate of many of its predecessors in the way of Royal Commissions, which after giving rise to a hot fit of excited discussion are practically laid aside. But the consideration of the subject had not advanced very far before all speculation in this respect was brought to an end by the strong declaration of Mr. Brodrick in the House of Commons of his intended action in regard to the reform of the army medical service and of his determination to make any changes, however drastic, that were needed; nor did he omit to indicate rather significantly some of his own impressions on the subject which were not altogether favourable as to the effect of some of the changes which had been introduced into that service of late years.

We do not think, by the way, that candidates for the Royal Army Medical Corps are likely to be attracted by all the discussions that have taken place.

The first thing which strikes us in this new army scheme, which is undoubtedly, as we have said, a bold and comprehensive one, is, Where is the requisite number of soldiers to come from? We do not see that Mr. Brodrick has made this at all plain. He does not offer any additional inducement to enlist by any increase of pay, although he does promise the introduction of some changes which will probably tend to popularise the army. But the whole military system appears to stand in need of re-consideration. It should be seen whether changes could not be made which, without gravely affecting the discipline and efficiency of soldiers and corps, would better adjust army life to the tastes, habits, and social customs that obtain outside it. We readily admit that in all which concerns the health and comfort and convenience of the soldier there has been enormous improvement and that this improvement is still going on. Still, young fellows who will gladly submit to courses of drill and instruction in shooting are nevertheless not prepared to adopt a barrack-room life and to exchange their personal liberty for much that they find irksome, monotonous, and distasteful to them. In times of war it is different. Any latent patriotism or military ardour which may be present is sure to manifest itself then, and recruits are always forthcoming because of the love of adventure, excitement, and the contagious influence of their fellows. We want some plan by which the services of men of this stamp can be obtained and utilised to a far greater extent than is done at present, and we think that it might be accomplished if some plan could be devised by which men could be allowed to live out of barracks and to attend at stated times for drill, shooting, and field manœuvres. A number of such men would no doubt subsequently offer themselves for enlistment in the regular army. Many medical officers think that we require a different system of recruiting. The recruiting officers in a large city or town should occupy a position in a prominent street or thoroughfare instead of being hidden away in a back street or at some obscurely placed barracks. The station should fly a flag and have a good and rather attractive exterior and a clean, inviting, and well-appointed interior where all information could be obtained and the examination of recruits be carried out.

THE LANCET.

LONDON: SATURDAY, MARCH 16, 1901.

The Duties of House Surgeons at the East Suffolk and Ipswich Hospital.

A LETTER which we print on p. 815 gives the particulars of a dispute which has arisen between the Board of Management of the East Suffolk and Ipswich Hospital and the house surgeons of that institution, one result of which has been the dismissal of the two house surgeons from the posts to which they had recently been appointed. It appears to have been a custom at the hospital that the house surgeons should furnish upon a printed form particulars, for use in the local press, of the accidents the victims of which are from time to time brought to the hospital. With this custom Dr. KAY and Mr. WORTS, the present house surgeons, refused to comply on the ground that the medical man has no right to make public information with regard to patients under his care without the consent of the patients or at least without that of their near relatives. The matter was brought before the Board of Management of the hospital at one of their weekly meetings, and a resolution was subsequently passed by the board embodying the custom and making it an instruction from the board to the house surgeons. Whether this resolution was strictly in accordance with the powers of a weekly meeting of the board not specially summoned is not of immediate importance, but we will assume that as far as the formalities to be observed it was properly passed under the seventy-seventh rule of the hospital which lies before us. This rule states that "the board of management with the consulting and honorary members of the medical staff shall have power at any meeting specially summoned for that purpose to make and issue, and from time to time to alter and amend, regulations for the guidance of all or any of the paid officers and servants of the hospital, and such officers and servants shall observe and abide by such regulations. Copies of the regulations shall be hung up in such parts of the hospital as the board shall from time to time direct."

Assuming that the prescribed formalities have been complied with we are still compelled to doubt whether the regulation is one the infraction of which would entitle the board of a hospital to dismiss house surgeons who accepted office before it was made and who declined to be bound by it; while we also emphatically question the wisdom of such a regulation. It must be taken to have been the intention of those who framed the seventy-seventh rule (which we have quoted) that the regulations made under it by the Board of Management should be reasonable regulations, fit and proper "the paid officers and servants of the hospital" in their several capacities to obey. In our view, for instance, a new regulation that the house surgeon should scrub the wards or write a weekly article in a local newspaper would clearly be beyond the powers of any Board of Management to make and to enforce. And we think that it is unreasonable for the board to expect their house surgeons to transgress what they feel to be the spirit of medical ethics—a feeling in which they have our unqualified support. The new regulation that the board have made is carefully worded with discreet vagueness, but as it intimates that information to the press shall be given "according to precedent" it would seem that they require the filling up of the form published in Dr. KAY'S letter to us. Now furnishing information to the press cannot by any stretch of imagination be brought within the reasonable duties of any house surgeon, in addition to which medical ethics forbid, as our correspondent rightly contends, the furnishing by a medical man of information concerning his patients to anyone, unless the patient or his family has consented to its being imparted. It will be seen, moreover, that the form supplied to the house surgeons at Ipswich indicates particulars of which a house surgeon can have no personal knowledge and for which he is asked to take responsibility by appending his signature. We may assume that he is intended to state the nature of the injuries received by his patients, although this—the only matter really within his cognisance—is not definitely asked for; while he is in terms desired to give the patient's name and address, the place and time of his injury, and the nature of the accident. Whether these are fit and proper points whereon the reporter should exercise his ingenuity and zeal we will not discuss; our contention is that they do not come within the province of the house surgeon, while the publication of them by him would involve him in serious responsibility. Many accidents that come into a hospital form at some time or other the subject of legal inquiry. The criminal courts deal with injuries wilfully inflicted, in the civil courts insurance companies dispute their liabilities, those injured by the negligence of others seek compensation, and employers are sued by their workmen for injuries sustained in their employ; while a recent Act of Parliament has now extended the Workmen's Compensation Act so that on and after July 1st next it will embrace agricultural labourers. In such cases the house surgeon is an all-important witness where the injured person has been treated in a hospital, and it is grossly unfair to such a witness that he should be compelled to make public his first impressions of the extent of injuries and the cause of them with regard to which he will, perhaps, at some future date be examined and cross-examined in a court of law. A premature statement thus publicly made may, whoever has made it, prejudice most unfairly the case of a complainant or of a defendant, even though it be substantially accurate. Still more may it do so if some, perhaps unavoidable, mistake has occurred in it. In such a case the hospital which concurred in the mistake being made, and the house surgeon or other person who consented to make it, would be likely to undergo hostile and damaging criticism, if no worse resulted.

Let us take such an announcement as this for example. "JOHN SMITH is lying in the East Suffolk and Ipswich

Hospital suffering from concussion of the brain and other injuries received when driving a team on the farm of Mr. HENRY JONES of such-and-such a parish." This we conceive is the kind of information which the house surgeon is expected to furnish in more precise terms, affixing his signature to names, dates, and times which he can only have learned by hearsay. The paragraph may be perfectly accurate but the statement may damage "JOHN SMITH" in the eyes of some one from whom he seeks employment and who may have a prejudice against a workman who, as he has read, has not been skilful enough to avoid an accident and who has, moreover, suffered from concussion of the brain; while under the new law referred to such a statement will also imply liability on the part of "HENRY JONES" to pay compensation to an injured labourer. This again may, in the case of a man known not to be well off, gravely affect the credit of "HENRY JONES." Therefore, if the statement be perfectly true it may seriously displease and inconvenience both SMITH and JONES, while if by any error wrong names and places have been given, or some exaggeration has taken place, either of them may have substantial cause of complaint. We have accordingly, for such reasons as we have given and for such as are contained in Dr. KAY'S reasonable letter, come to the conclusion that the new regulation of the Board of Management of the East Suffolk and Ipswich Hospital is one which the board should neither have made nor insisted upon, while the custom upon which it was founded was undesirable in the interests of the hospital as well as those of its officers. We hope that the editor of the newspaper, to whom allusion has been made by name, will reconsider the matter if his views have been correctly indicated. As a member of the Board of Management of the hospital he will no doubt feel it incumbent upon him to adopt that course only which he is satisfied is best for the interests of the institution, of which interests he is a trustee. As journalists we are in full accord with him when he says that "a paper must be run"; but we are sure that he would imply when using such words that it must be "run" properly. Now it is not proper for the house surgeons of the East Suffolk and Ipswich Hospital to make the statement about their patients in the daily press that is required of them. To do so is ethically wrong. It is unfair to the patients; it may involve the hospital in discredit; moreover, the house surgeons cannot know, save by hearsay, the things which they are required to vouch for with their signatures.

"The Status of the Country Doctor."

WE publish to-day an address on "The Status of the 'Country Doctor,'" by Mr. HARRY ROBERTS, B.Sc. Lond., L.S.A. Mr. ROBERTS speaks with the authority of one who lives in a country town of some 1100 or 1200 people, which is well supplied with the class upon whose influence, past and prospective, he descants with much originality and independence. "The country doctor" is a favourite subject of novelists and other writers. Mr. ROBERTS does not mean by this description only those who live in small villages, but virtually all general practitioners as distinguished from the "separate class of physicians" who, in past days, "although frequently ignorant of medicine, were almost invariably men of culture and wide knowledge, as these were then accounted." The general drift of his address is to magnify the change in the conception of culture which has taken place since the study of science began to compete seriously with the study of classics. Familiarity with Latin and Greek writers is, in his opinion, mere pedantry, knowledge bounded by words, and so of little value. Culture implies acquaintance with the points of view of the great writers and dreamers of the world—modern as well as ancient; it requires us to have lived freely among people of many conditions, and to "have spent much time among the higher regions of existence." Culture must result in greater tolerance, greater sympathy because fuller understanding, and withal, less pomposity. It is the belief of Mr. ROBERTS that the medical practitioner, in virtue of his better education, as compared with that of his predecessors and with that of the clergyman, is in the way of acquiring this higher culture, and with it a predominant influence even over "the parson" who until lately was the only educated man in the country parish. Mr. ROBERTS is anxious for the development of this true culture in medical men in order that they may still further improve their status, their influence, and, to quote his words, their "power of materially modifying the structure of provincial life."

In the main we agree with Mr. ROBERTS. We have often pointed out the steady growth of the influence of medical men in society; and in our opinion the growth of this influence must be progressive if they are true to their opportunities and their duties. This will be the case all the more if we do not too pointedly arrogate to ourselves the first influence in communities. We have enormous advantages. Our profession as a scientific one is practically undivided. We are not broken up into schools that strive for mastery and disparage their rivals. As the scientific basis of our position and practice is developed our influence must be more and more unassailable—unless some judicial blindness should overtake civilised communities, as almost seems to be the case in respect of certain of the best-established facts in medical science. It is probable that the scepticism to which we refer is a mere temporary phase of civilised ignorance which experience—perhaps very rough experience—will correct. The ordeal of suffering, if nothing else avails, will bring men back to sanity and to obedience to the laws of health and of disease which it is our high function to study. And unless our study be very superficial and perfunctory it must give us such an advantage as to compel the growing respect of men and of communities. It is a large ambition to modify materially the structure of provincial life. But even this should be possible to men following the calling of FOTHERGILL and JENNER, of ALISON, of FARR and CHADWICK, of LISTER and SIMON, who have influenced legislatures at home and abroad. The members of our profession in small districts should have in some sense an easy triumph. They have, it is true, more ignorance and prejudice to overcome. But they are in closer contact with the victims of these defects. They are the chief representatives of science in their districts. They count for more than men who are lost in large communities, and the development of municipalism

gives them local chances which are not always obtainable in great cities.

Mr. ROBERTS is too severe in his criticism of the faults that hinder the influence of the country practitioner. Prominent among these he considers a certain pomposity or bumptiousness which has been the favourite theme of satirists from JOHN OF SALISBURY downwards, due mainly, he thinks, to two causes—firstly, a lack of knowledge of the great book of wisdom outside our own handicraft, and, secondly, our lack of humour as a profession. There is some truth in this view, but a very diminishing quantity. We admit the defect of humour, and it is a great defect, and we heartily endorse Mr. ROBERTS'S advice in favour of a little more study of the humorists and their reflections on our profession. On the other hand, it strikes us that Mr. ROBERTS takes the humorists a little too seriously and applies their satires a little too literally to the profession of the present day. We claim to have some knowledge of the country practitioners of the last and the present generations, and we venture to think that very few of them would be found to answer to the description of JOHN OF SALISBURY or even to that of CHARLES DICKENS, either as respects pomposity or the zeal with which they have haggled for fees—which is another of the faults by which, according to Mr. ROBERTS, we defeat our purpose and lower our status in the community. But while we differ from Mr. ROBERTS as to the degree to which the profession is now open to the satires which have been heaped upon it in the past we agree in his main contention that the influence of our profession is increasing and must increase, and that this increase can only be hindered by our own failings in the pursuit of truth and our own bearing towards those who are less fortunate and less instructed than ourselves. Unfaithfulness in our own work and the assumption of airs of superiority will delay indefinitely that influence which society shows an increasing disposition to accord to those who really study medicine and who apply its discoveries in an earnest and reverent spirit to ameliorate the conditions of modern life.

The Medical Staff and the Management of the National Hospital for the Paralysed and Epileptic.

OUR readers will be interested to know that the controversy between the medical staff and the Board of Management of this hospital has entered upon a fresh, and it is to be hoped a final, phase. It is desirable to recapitulate the various steps in the campaign, and it may be stated at the onset that, however absurd it may seem, the whole trouble has arisen through the refusal of the board to entertain the request of the staff that two of its members should be annually elected to the Board of Management. About 10 years ago the staff first made this request, but the board declined it, substituting instead occasional meetings between the house committee and the staff. This arrangement was summarily, and without any reason apparently, discontinued by the board at whose suggestion it had been instituted. The method then proposed by the board for communication between that body and the staff was by means of two delegates of the latter, who might ask to meet the board or be invited to meet them, in order to discuss matters of medical interest or importance in the administration. The staff accepted this arrangement on the distinct understanding that the delegates were to be present at all the discussions on the subjects concerning which their views and opinions were asked. In connexion with the establishment of a system of payments by out-patients this arrangement was violated by the board and the subject on which their advice was asked was discussed while the delegates were absent. The staff naturally declined to have anything more to do with a system which the board could so manipulate as to make it quite useless for the purposes for which it was instituted. This led to a fresh demand from the staff for representation by means of the annual election of two of its members to the Board of Management. This demand was made at a special meeting of the board and staff at which several members of the staff as spokesmen for their colleagues presented a case which we think should have carried conviction. The board absolutely declined to entertain the proposal, not condescending to state any reasons for their action. The staff, now apparently for the first time, recognised that they were dealing with a deeply prejudiced board. Their next step was to address the governors. But meantime various details of maladministration, of faulty domestic and nursing arrangements, had come under their notice and they strengthened their appeal by a statement of these in their letter to the governors. Any ordinary person would now have thought that the board would take steps to inquire thoroughly and impartially into the charges. What they did was to appoint a sub-committee of themselves to inquire into their own defective administration—a sub-committee which naturally proceeded to find that everything was as nearly perfect as it well could be. Of course, the medical staff declined to submit their evidence to any such hole-and-corner inquiry. The board apparently remained uneasy in their own minds and the next step was to summon a meeting of governors.

A meeting of governors of the National Hospital for the Paralysed and Epileptic can be summoned by means of a single advertisement in any newspaper in the United Kingdom. An advertisement, which, we believe, appeared in the *Times* early in August, was all the notice which the governors who were known or suspected to be favourable to the staff received of the forthcoming meeting. Others, however, presumably those on whom the board thought they might depend, received a special notice and also a copy of a proxy in favour of the board which they were requested to sign and to return. According to the rules of the hospital proxies are only available after a ballot has been demanded upon any question submitted to a meeting of governors, so that the board, in asking for these proxies before the meeting, were acting illegally, and if they had even an elementary acquaintance with the rules governing the charity they must have known that they were acting illegally. The meeting was held on August 11th last and was attended by 16 governors. By a majority of 14 to 2—

and of the 14 six were members of the board or relatives of members—the meeting decided that representation upon the Board of Management should be refused to the staff and that no further inquiry into the affairs of the hospital was needed. A verbatim report of the speeches made at this meeting will be found in THE LANCET of August 18th, 1900, p. 551. It may be incidentally mentioned that in a letter to the *Times* of March 11th, 1901, from the secretary-director of the hospital (to which we shall have to make further reference) Mr. BURFORD RAWLINGS asks for "the continued approval of the many governors, including nearly all the chief contributors, who decided against the demand of the staff in August last." There was only one meeting in August and it was attended by 16 governors.

Of course, it was obvious that the staff could not consider such a pronouncement as final, and indeed they had protested against the manner in which the meeting was hurried through and had declined to take any part in it for that reason. The correspondence which now ensued in the daily press showed clearly that something more would have to be done, and in December last the board announced that the Lord Chancellor, a member of the Board of Management, had nominated Sir FORD NORTH to hold an inquiry into "the allegations of the medical staff concerning the care, comfort, and treatment of patients." The staff were informed of the intention to hold this inquiry three days, and only three days, before it was to take place, and were told that the board would be represented by counsel and that it was permitted to the staff to be similarly represented. It was scarcely to be expected that the staff would be satisfied with such a partial inquiry or with a tribunal which had no medical element in it. The staff, in short, declined to have anything to do with the inquiry, and as a consequence it was adjourned *sine die*, although it is significant of the unreasonable attitude assumed by the board that even their own counsel advised them to enlarge the scope of the inquiry and to have the assistance, if thought expedient, of two assessors, one nominated by the board and the other by the medical staff.

It will be remembered that in July last the Metropolitan Hospital Sunday Fund decided to withhold the usual grant to the hospital pending a settlement of the differences between the board and the staff. In December last the Prince of Wales's Hospital Fund took a similar step, intimating that unless matters were settled before May 1st the grant would not be made at all. Certain attempts were now made by friends of the board and of the staff to arrange some ground of agreement. These negotiations were more or less of a private nature, but as a consequence of them resolutions were passed by the board and by the staff with reference to the composition of a committee of inquiry and the matters with which it was to deal. So far as can be gathered the board wished this tribunal to decide upon the matters in dispute; the staff, on the other hand, held that the inquiry was only for the information of the governors with whom the final decision must rest. The board broke off negotiations in an abrupt manner which, if they were sincere in their desire to effect some basis of settlement, is inexplicable. It is hoped that the governors at the ensuing meeting—in view of what we have stated as to the grants from the Metropolitan Hospital Sunday Fund and the Prince of Wales's Hospital Fund—will insist on some explanation of the delay for which the board were responsible in replying to the proposals of the staff.

We now come to the latest phase of the controversy—the publication in the *Times* of March 11th of a letter signed by the secretary-director of the hospital giving his account of the controversy and intimating that there would be a meeting of governors on March 23rd. Mr. BURFORD RAWLINGS'S letters have been many and remarkable and his last letter is not the least remarkable among them. The statement that "the attitude of the staff towards the proposed inquiry and certain statements put forward by, or on behalf of them, appear to show that the staff would be quite ready to abandon the charges if only they were granted the demand for representation, which the charges were intended to enforce," must, to anyone who has followed the controversy, carry its own contradiction on the face of it. It is to be hoped that the staff will insist on the production of proof of these alleged statements. Mr. RAWLINGS attributes the present financial embarrassment of the hospital to the action of the medical staff. A consideration of the position which the Metropolitan Hospital Sunday Fund and the Prince of Wales's Hospital Fund have assumed in regard to the controversy, and of the delays which the board have interposed, will clearly show who is responsible for the crippled finances of the hospital and the impending restriction of its usefulness. Not only on behalf of the staff of a particular hospital, but in the name of the medical profession as a whole, we indignantly repudiate the insinuation, also contained in this letter, that medical influence in hospital administration can possibly impair the usefulness of the charity or detract from its character of benevolence. A hospital exists primarily for the cure of disease and the relief of suffering. Those in whose hands these high functions rest are not the Board of Management alone or the medical staff alone. The two bodies share the duties and responsibilities. The medical staff can have only one object in desiring proper representation upon the board—viz., to strengthen the administration in order that its power of dealing with disease and suffering may be increased and extended. And we would point out how misleading is the suggestion made in this letter that the administration of the National Hospital for the Paralysed and Epileptic is similar to that which obtains in other institutions. The National Hospital for the Paralysed and Epileptic is neither a large nor an ancient charity. It cannot be compared, for instance, with St. Bartholomew's Hospital. It is a special hospital and should be compared, therefore, in its administration with other special hospitals—e.g., the Brompton Consumption Hospital, the Children's Hospital, Great Ormond-street, or the Royal London Ophthalmic Hospital. In all of these there is an ample representation of the staff on the Board of Management. Indeed at Brompton every member of the staff is *ex officio* a member of the board. Medical influence in its councils could not be stronger, and yet it has never been suggested that it is pernicious. The statement in the letter of the secretary-director of the National Hospital that the influence of a medical staff becomes dangerous in precise proportion to the eminence of the

medical staff is too preposterous even to be considered. We trust that the governors will sweep away all quibbles and side issues, will insist on a full and impartial inquiry, and will finally intrust the medical staff with that voice in the administration of the hospital to which their eminent services more than entitle them and which the good of the hospital demands.

Annotations.

"Ne quid nimis."

REGULATIONS FOR MILK AND CREAM.

THE Departmental Committee appointed by the Board of Agriculture to inquire into, and to report upon, the desirability of making regulations with regard to the sale of milk and cream have just published a very interesting document containing their recommendations. Despite the opinion expressed by many that the problem of controlling the milk trade was one which well-nigh defied perfect solution, yet the overwhelming body of evidence is in favour of the view that the setting up of some statutory limits for milk is necessary. Unless it be held that the Food and Drugs Acts are as regards the sale of milk unnecessary—a view actually taken by not a few—it is difficult to escape from the conclusion that some limits should be fixed in order to make analysis a criterion as to the quality of the milk. It has been proposed that seasonal limits might be adopted in order that no injustice should be done, for it is true that the quality of normal milk varies at different seasons of the year. The adoption, however, of a set of minimal limits which should be applicable at all times and under all conditions to milk produced for consumption, is the course which has commended itself to the committee. Ultimately, after a careful survey of the evidence, the committee are disposed to conclude that the milk produced for sale in this country contains on an average from 12·5 to 12·8 per cent. of solids, comprising from 3·7 to 4 per cent. of fat. Any milk, therefore, the committee consider, in which the total solids are less than 12 per cent. should be further inquired into, and if it should be then found that the amount of butter-fat is less than 3·25 per cent. a presumption would be raised that it had been mixed with separated milk or water, or that some of its original fat had been abstracted; if the solids, not fat, are found to be lower than 8·5 per cent. a presumption that it had been mixed with water would arise. In regard to cream the committee are of opinion that the weight of evidence was not favourable to the establishment of official limits of fat; nor does it appear that any substantial difficulty arises in selling cream in different qualities, at corresponding prices, to meet the requirements of the public. It is very properly considered, however, that steps should be taken to prevent the artificial thickening of cream by the addition of gelatin or other substances. The recommendations of the committee also relate to the composition of separated milk and condensed milk, in regard to the quality of which similar recommendations as to limits are laid down. The report is signed by all the members of the committee except one who, being unable to give his assent to the principal recommendations, embodies his own conclusions in a separate report. Mr. Barham in this report is in favour of the adoption of a seasonal standard. He takes 3 per cent. of fat as fairly representing, with 11·75 per cent. total solids, the milk during the months from July to February inclusive and the same amount of total solids with 2·75 per cent. of fat for the months from March to June inclusive. In any case he regards the milk as deficient in its normal constituents when the total solids are less than 11·75 per cent. and the non-fatty solids than 8·5 per cent. Mr. Farmer signs the report subject to a reservation. He also agrees to seasonal limits and objects to the suggested limit of 3·25 per cent. of fat for the whole year. We feel sure that it will be ultimately shown that legislation can only be satisfactorily applied towards upholding the supply of milk of good quality by the adoption of one limit for all seasons of the year. Moreover, since it was announced some months ago that the limit adopted at the Government laboratory was 3 per cent. of fat the quality of the London milk-supply has very materially improved, as shown by the latest analytical returns.

THE UNIVERSITY OF LONDON.

AT a meeting of the Faculty of Medicine at the University of London on Friday, March 8th, the following reference from the Senate was discussed and passed:—

That it be referred to the Faculty of Medicine to consider and report to the Senate as to the manner in which it may best carry out the duty stated in the following paragraph of Section 80 of the statutes of the University—viz.: the Senate shall use its best endeavours, whenever practicable, to secure common courses of instruction for internal medical students in the preliminary and intermediate portion of their studies under appointed or recognised teachers at one or more centres.

A committee was appointed to report, consisting of the members of the Senate elected by the Faculty of Medicine, the professors of anatomy and physiology who are members of the faculty, and two teachers from each of the medical schools, who are also members of the faculty. Only one-fourth of the members of the faculty were present at this important meeting. So far as the intermediate portion of the medical studies is concerned, we think that, although the study of physiology may be centralised or concentrated, it will be obviously impossible to carry out this in the case of anatomy. The Commissioners who drew up the statutes cannot have any knowledge of the teaching and restrictions of practical anatomy. In preliminary science concentration is very advisable, but even here the University must not lose sight of the fact that the large majority of medical students merely study for the first examination of the conjoint board, and the schools will scarcely hand these scholars over to a centralising board as suggested by the Commissioners who have drawn up the statutes. The whole plan of centralisation is unadvisable, as then there will be no competition among the teachers, and they will have no touch whatever with the necessities of medical teaching, but will become a pure scientific bureaucracy. Moreover, there are many excellent laboratories in the London medical schools which are admirably fitted for scientific instruction and are supervised by as good teachers as are likely to be found in any single institution.

LORD ROSEBERY AND COLONEL LOCKWOOD ON THE LONDON WATER-SUPPLY.

COLONEL LOCKWOOD, M.P., when he was giving evidence before Lord Llandaff's Commission described himself as being "quite a chicken" amongst water company directors. If we may be permitted to carry on the pleasing metaphor of the honourable and gallant gentleman we will congratulate him on being now a fully fledged fighting-cock amongst directors, for he has challenged Lord Rosebery to inspect the excellent water-fittings which the companies so kindly wished their customers to put in at their own expense. It does not appear from the correspondence which was published in the *Times* that Lord Rosebery expressed any desire to see the water-fittings, but his letter seems to show that he is not very thoroughly acquainted with the details of the

metropolitan water-supply or of the absurdity of the plan proposed by the London County Council to purchase the companies' undertakings and to resell parts of them to the extra-metropolitan authorities. Nor can the London County Council be properly looked upon as the metropolitan authority for London, as Lord Rosebery implies. The metropolitan authorities are the Cities and Boroughs and the County of London itself forms but a small part of "Water London."

THE BEER-POISONING EPIDEMIC.

AFTER the hearing of considerable evidence at the inquest held at Liverpool on the body of a woman who died in December last, presumably from the effects of poisoning by beer, the jury have arrived at the following verdict: "That the cause of death was arsenical poisoning through drinking beer; that Bostock's directors were not culpably negligent, but were to blame for not notifying to the makers of the acid that it was required for food purposes; that Nicholson's were not culpably liable, but displayed extreme indifference; that Mr. Cook, the works chemist, was neglectful but not culpably so; and that Dr. Morris, the consulting chemist, displayed great carelessness in his supervision of Cook's discharge of his duties." This verdict is accompanied by the following rider: "We are of opinion that better supervision should be exercised over the quality of the liquors supplied in licensed houses." The inquiry lasted 11 days and the evidence was striking in showing how urgently further legislation is needed in regard to the supervision and control of the processes of manufacture of articles used in and for the preparation of human food and drink.

THE RECENT EPIDEMIC OF PLAGUE IN SYDNEY.

THE report on the outbreak of plague at Sydney during 1900 made to the Government of New South Wales by the chief medical officer of the Government and President of the Board of Health (Dr. J. Ashburton Thompson) has just been issued. The report commences with what may be called a despatch stating the names and services of the permanent and temporary members of the Department of Public Health, who both worked zealously during the epidemic and furnished the various details upon which the report is founded. Between Jan. 19th and August 9th there were 303 cases, but of these only 262 are referred to in the clinical descriptions embodied in the report, for 39 patients died before notification or so soon after that no clinical observations were possible; while two others lay ill at a distance from Sydney. Prodromal symptoms were hardly ever observed, but, as a rule within a period of from one to 12 hours, the patient passed from a state of apparent health to one of severe illness. Rigors, headache, vomiting, flushing of the face, and suffusion of the eyes were almost constant symptoms, while the temperature ranged from 100° to 102° F. In general the bowels were constipated, but diarrhœa sometimes occurred and was a bad symptom. In some cases even at this early stage the glands were painful. During part of the first and the whole of the second day the symptoms deepened in gravity, coma, delirium, and sleeplessness supervening, while the temperature rose to between 101° and 105°. This condition was maintained more or less up to the fifth or even the sixth day. Diarrhœa and external hæmorrhages occurred in some cases and were of grave import. The bubo increased rapidly. During the sixth, seventh, and eighth days the disease began to decline and improvement in favourable cases was rapid. On the tenth day convalescence began and was accompanied by suppuration of the bubo. The above represents the ordinary course of the disease, but in some cases patients simply complained of feeling ill and died quite unexpectedly with no definite symptoms. The post-mortem appearances were those of a profound blood change. The bacillus pestis was easily obtained from buboes or viscera and as easily cultivated. The form which the disease took was almost exclusively bubonic, but 17 cases were septicæmic and one was apparently pneumonic. As regards sex incidence nearly four times as many males as females were attacked; as to age incidence more than half the cases occurred in persons between 15 and 35 years of age. The gross fatality was 34 per cent. Only 10 of the patients were Chinese, a race in which plague fatality is very high (as a rule 80 per cent.), and of these 10 Chinese eight died. If these be deducted the fatality is reduced among whites to 32·4 per cent. For protective inoculation Haffkine's serum was employed and in all 10,700 persons were inoculated, including the members of the various staffs. No illness occurred among the latter except in one case—that of a temporary scavenger who escaped inoculation. His case was slight and he presumably infected himself from dressings. Among the inoculated public 13 cases occurred, all of which were very slight. One fatal case was that of a boy whose relatives declared that he had been inoculated two months before his attack, but proof of inoculation was not forthcoming. For treatment Yersin-Roux serum was used in 71 cases, and the report, while not coming to any definite conclusion, states that the serum has antitoxic powers but can hardly be relied upon as a very active curative agent at present. Rigid administrative measures were taken, cleansing of dirty wharves, houses, and areas was carried out, patients and "contacts" were strictly isolated both from the general public and from one another, and a rat-destroying campaign was entered on. Section VI. of the report is most interesting and deals with the origin and mode of spread. Shortly, the disease is shown to have not been "catching." It was not communicated in any important degree by clothing, merchandise, or excreta. The epidemic was caused by communication of the infection from rats to man, and the medium of infection is presumed to have been fleas. Section VII., which deals with prevention, is summed up in the following paragraph: "Thus the best and the only attainable defence against epidemic plague lies in the removal of dangerous conditions which for the most part could not occur under good municipal management, even of the elementary processes of inspection, record, and scavenging." The appendices contain, amongst other subjects, a full bacteriological report, together with experimental observations on the modes of infection, and a clinical and pathological report. There are also spot maps showing the probable places of infection and the distribution of the disease. The report, of which we have given but the outline, is exceedingly interesting and deserves careful study.

THE WORK AND THE EXPENDITURE OF THE METROPOLITAN ASYLUMS BOARD.

AT a recent meeting of the Islington Guardians Mr. Sanders, one of the representatives of Islington at the Metropolitan Asylums Board, reported that they had only 3192 patients in their hospitals. This number is 555 less than in 1900 and 1107 less than in 1899. He was reminded by his fellow guardians that, nevertheless, the expenses increase. It is in the nature of the case that the patients of these hospitals should fluctuate much in numbers, but the steady increase of the expenditure is remarkable. The fact was brought out by the chairman of the Financial Committee of the Metropolitan Asylums Board at their meeting on Saturday, March 9th, who remarked that every class of institution except the training-ship, and every group of expenditure except maintenance charges, showed an increase. The net increase in the current expenditure for 1899 was £47,000 and for the year 1900 it was £63,000.

Decrease in the number of hospital patients was in no way followed by decrease in expenditure; the daily average number of infectious patients was 6 per cent. less, and the total current expenditure was 10·5 per cent. more, than in the previous year. The ambulance service spent £2487 more, yet removed 8328 fewer patients. The number of patients decreased 11·53 per cent.; the number of the staff increased 0·68 per cent. Such a state of affairs is difficult to understand and is likely to go on until the whole administration of the Board is subjected to that criticism which alone checks the automatic increase of expenditure in bodies who have to make precepts of payment to other bodies and who are not directly amenable to public opinion. One curious and questionable step the Board have taken to reduce their expenditure, and that is to terminate the insurance policies on their buildings on the ground that they have paid £13,878 5*s.* 2*d.* and only received back £6110 13*s.* 7*d.* A much wiser thing in the way of curtailing expenditure to be credited to the Board is the defeat of a motion for the provision of hospitals for measles. Such a provision would add enormously to the expenditure of the Board, while it would be very unlikely to curtail the number of epidemics of measles and would possibly add to the intensity of the disease.

THE LIMIT OF ALCOHOLIC STRENGTH OF NATURAL WINES.

AN important point in regard to the amount of alcohol which may be normally developed in a natural wine is raised in a letter which appears in our correspondence columns this week. The discussion of the question, as will be seen, had its origin in the results obtained in THE LANCET Laboratory in regard to the strength of certain South Australian wines under examination. The view of our correspondent would appear to be borne out by the report of a Commission appointed to inquire into the alcoholic strength of South Australian wines by the Colonial Government. According to this report a great number of natural wines produced in South Australia showed an alcoholic strength of as much as 38·5 per cent. of proof spirit, which is equal to 15·5 absolute alcohol by weight or 19·18 per cent. by volume. Further instances, according to this report, show strengths of 38·7 per cent. and 42·57 per cent. proof spirit, which are equal to 18 per cent. and 19·83 per cent. by weight of absolute alcohol respectively. The assumption is that the climate of South Australia possesses such ripening qualities as to produce a grape juice exceedingly rich in sugar. As a matter of fact, the grape juice shows a specific gravity far exceeding that of grape juices produced in other wine-producing countries and especially those of Europe. Of course, it does not follow that because grape juice is exceptionally rich in sugar it will necessarily produce a corresponding amount of spirit, for whatever the limit may be there is undoubtedly a point at which natural fermentation will cease when the alcoholic strength is such as to prevent the further growth of the yeast organisms and therefore the further development of spirit. It will be found that biologists, chemists, and others have generally laid down that the amount of alcohol produced in a normal fermentation does not usually exceed 12 per cent. by weight, which is equivalent to about 26 per cent. of proof spirit. Accordingly, when a wine is found to contain alcohol in excess of this amount a suspicion is entertained that it has been fortified or brandied. Thus, in dealing with certain specimens of colonial wine Dr. A. Dupré and Dr. J. L. W. Thudichum, in their work on "The Origin, Nature, and Use of Wine," report the strengths respectively of 29·4 per cent. and 27·2 per cent. of proof spirit. They conclude in the former case that the wine "consequently was brandied" and in the latter that it "was therefore alcoholised." Dr. Percy Frankland, in Thorpe's "Dictionary of Applied Chemistry," page 117, writes also: "When the proportion of alcohol produced amounts to 12 per cent. the further growth of the yeast is prevented, and with 14 per cent. (30·26 per cent. proof spirit) fermentation ceases altogether." Mr. Wynter Blyth, in his work on "Foods," page 480, also writes: "Natural wines contain as a minimum 6 per cent. (13·11 proof spirit) and as a maximum a little over 12 per cent. of absolute alcohol by weight (26 per cent. proof spirit). Even under favourable conditions scarcely more than 15 per cent. of alcohol (32·38 per cent. proof spirit) can be obtained by fermentation." Again, Professor Fischer of the University of Leipsic writes in his recent book on "The Structure and Functions of Bacteria," on page 132, that "as soon as all the sugar in a fermenting fluid is used up the process ceases, as it does also in any case when the alcohol has reached 12 or 14 per cent." Again, von Richter, in his "Organic Chemistry," page 120, says: "The yeast germs cannot grow in liquids containing 14 per cent. of alcohol." Dr. Dupré and Dr. Thudichum also say in their work already alluded to: "But even a wine of 26·5 degrees of proof spirit is upon the limits of what is chemically possible, because fermentation even under the most favourable conditions is invariably arrested by the presence of about 15 per cent. of alcohol." Lastly, Dr. Hassall came to a similar conclusion when he stated in connexion with the work of THE LANCET Analytical Commission that "even if the must were rich enough to permit of the formation of a higher amount of alcohol, it could not do so since fermentation is stopped in any liquid containing 15 per cent. of absolute alcohol by volume, equal to 26 66 per cent. of proof spirit." There seems, therefore, to be a consensus of opinion amongst biologists, chemists, and others that the utmost limit of normal alcoholic strength in a natural wine is 26·66 per cent. of proof spirit. And upon this figure is founded the means of deciding whether a wine is fortified or not. Yet according to the returns published by a Commission in South Australia a natural wine produced in that country may contain as much as 42·57 per cent. of proof spirit, or, according to our correspondent, 44·52 per cent. Wherefore it would appear that the generally accepted method of adjudging the character of a wine as regards whether or not it contains added alcohol is untrustworthy and its adoption if persisted in is calculated to do an injustice.

PALUDISM AS A CAUSE OF GENERAL PARALYSIS.

IN the *Revue de Médecine* (November, 1900) Dr. E. Marandon de Montyel, medical superintendent of the Ville-Evrard Asylum, has called attention to the little known but important fact that paludism must be reckoned a cause of the peculiar cerebral degeneration which constitutes general paralysis of the insane. After referring to the classical case observed by Lemoine and Chaumier of a workman, aged 38 years, who was free from syphilitic or alcoholic taint, but who nevertheless developed general paralysis of the insane as the result of malarial infection contracted at the age of 23 years and of repeated attacks of ague since then, it is pointed out that the only thing lacking to complete the chain of proof was the absence of a necropsy after the patient had died with all the clinical signs and symptoms of general paralysis. It was also pointed out that in this case there was an absence of neuropathic or hereditary taint, and Lemoine and Chaumier concluded that the toxic action of the malarial poison was the cause of the disease. From the study of eight cases of paludism followed by symptoms of general paralysis or pseudo-general paralysis de Montyel concludes that the following may be accepted:—1. Some of the cases result

from chronic and the others from acute paludism; in the present article there are four cases of each kind. 2. In four cases of acute paludism three showed clearly that the malarial poison could produce, after a brief delay, a progressive general paralysis of cerebral functions ending in death, while in one case the symptoms were those of pseudo-general paralysis and were both non-progressive and curable. In all the above four cases it was probable from their histories that some form of neuropathic predisposition existed. 3. Chronic paludism was capable of producing a true progressive and fatal peri-encephalitis in predisposed subjects. Of four cases of chronic paludism three incontestably showed this. Two of these three showed a syphilitic taint and a predisposition to cerebral congestion. In the fourth case, however, there was no such taint and careful examination disclosed that chronic paludism was the sole discoverable cause. This case was very remarkable and was as follows. The patient, a man, 40 years of age, single, a shoemaker, was free from hereditary taint, whether neuropathic, congestive, or vesanic, and devoid of physical or mental stigmata of degeneracy. He was of good physique, well-developed and intelligent in mind, of temperate habits, and free from syphilis and from cranial injury. 16 years prior to admission as a patient at the Ville-Evrard Asylum he lived in a malarial district in Algiers and contracted intermittent fever of the quotidian type. In spite of all treatment this recurred every summer during the months of July and August, and he suffered also from neuralgias of the face and head. He remained single, and till the age of 39 was of normal mental condition. He then (at the beginning in 1892) began to suffer from weakening of his mental powers and a fear of becoming mad. He became gloomy and preoccupied, suffered with his head, and developed insomnia. He complained of loss of memory and of lack of power of the association of ideas. In the summer of 1892 he had a recurrence of malarial fever, the second attack of which was followed by an epileptiform cerebral seizure, from which he rallied only to pass into confirmed and progressive general paralysis. The clinical symptoms with regard to speech, the pupils, and the facial muscles were typical of general paralysis, and he developed both grandiose and hypochondriacal delusions. He died within 11 months, and the necropsy showed the usual lesions, both macroscopic and microscopic, found in the brains of general paralytics.

THE BRISTOL CRUELTY CASE.

MR. JUSTICE DAY has sentenced to 15 years' and five years' penal servitude respectively a man and woman cohabiting at Bristol and convicted before him of attempting to murder the child of the man, a boy aged eleven years. We need not go into the circumstances of revolting and callous cruelty in which they endeavoured to compass the death of their victim except to say that they richly deserved their sentences. We are more concerned to point out, as the public press of this country has pointed out again and again, that as long as parents of the more or less impecunious class are permitted to insure their children for sums that will reward them handsomely for their children's deaths, so long will child murder be profitable, while we need hardly add that child murder can be and is committed in many more cases than those which are investigated at coroners' inquests and at assizes. The Bristol convicts relied partly, at all events, upon starvation, so that when they were detected there was a half-starved child who could be produced, and his starvation proved to demonstration. In part also they relied on exposure to cold, causing him to live in a room with the window open and without a fire in winter. Exposure of a child, less hardy, perhaps, and younger than the boy at Bristol, to wet or damp, to cold and to draughts, will soon set up a condition of things which, duly developed, will become serious for the child. If the medical man be not summoned too soon the child may then die with all the protection afforded by medical attendance and the burial certificate, which is all that the law requires; for the medical man is not a detective, nor is he charged with any inquiry into all that happened before he was called in and as to what produced the symptoms that he found awaiting him. With regard to insurance, the boy at Bristol was insured with one company alone for £25 and there was mention of insurance effected or attempted with others, while both man and woman had boasted of what they would do with the money that would accrue when the poor little fellow was dead. It may be right that parents should be able to recoup themselves for the expense to which the death of a child may put them, and many will say that if the insurance companies were permitted to pay to parents such a sum as they were proved to have expended on medical attendance and funeral expenses for a deceased child no great harm would result from this arrangement. Perhaps it would not, for in such circumstances few or none of the parents who are capable of hastening the deaths of their offspring would trouble to insure them. They would still have a motive for destroying them—namely, the saving of the expense that small children necessarily cause to their fathers and mothers. We cannot prevent child murder from ever occurring, but we can put difficulties in the way of its being committed with impunity by improving our regulations for the certification and registration of deaths, and we can abolish some part of the profits which form the motive of its committal. The profits of the companies which make money by insuring children ought not to be considered in such a connexion; they are not of the class of vested rights which deserve protection.

TREATMENT OF THE COCAINE HABIT BY COMPLETE WITHDRAWAL OF THE DRUG.

DR. G. W. NORRIS has published in the *Philadelphia Medical Journal* of Feb. 9th last a case of the cocaine habit of 10 months' duration treated by complete and immediate withdrawal of the drug. The case was that of a dentist, aged 30 years, who 10 months prior to admission to the Pennsylvania Hospital had suffered severely from hæmorrhoids, for the relief of which he had used cocaine locally as a rectal injection. Relief of pain was obtained, but he nevertheless continued to take the drug in daily increasing doses and after some time by the hypodermic method, on account of its stimulating and exhilarating effect. At the time of admission to hospital his daily dose was 16 grains of cocaine hydrochlorate. One result of the cocaine habit was that time seemed to him to pass very rapidly, minutes seeming like seconds, and he experienced a continuous, voracious, insatiable appetite. His energy and his application to work, however, declined, and he developed a tendency to procrastination. Insomnia was constant unless he took cocaine, upon the injection of which in small doses he slept well for one or two hours, when its repetition was necessitated. Single large doses kept him awake. For several months he had been troubled with hallucinations of hearing and he avoided street-cars and public gatherings because in such places he heard voices accusing him of being a "cocaine fiend." At night he would wander from room to room in his efforts to escape the voices which he heard talking about him, calling out, "Look, he's going to take another!" and, while reasoning with himself on the subjective character of his troubles, yet he was impelled by their vividness to flee from them as from realities. During the week prior to admission he had had syncopal attacks whenever injections were omitted for more than two hours. The treatment adopted

after his admission to hospital consisted of the complete withdrawal of the drug and the administration of one-thirtieth of a grain of strychnine sulphate every fourth hour and of 20 grains of sulphonal every two hours. On the first night he slept fairly well; on the second night he required no hypnotic whatever and only the medication with strychnine was continued. He rapidly became well and in a few days volunteered the statement that he felt like his former self for the first time for many months and that time once more seemed real to him. He complained of no craving for the drug and was discharged from hospital a week after admission as cured, though advised to keep himself under medical surveillance for a longer time.

CHELSEA CLINICAL SOCIETY.

THE annual clinical debate of the Chelsea Clinical Society was commenced on March 12th, at the Jenner Institute of Preventive Medicine, under the presidency of Dr. William Ewart. The subject for debate was, "The Clinical and Pathological Relations of the Chronic Rheumatic and Rheumatoid Affections to Acute Infective Rheumatism," and it was introduced by Dr. Archibald Garrod, who read a paper which is published in full in the present issue of THE LANCET. Dr. Garrod was followed by Dr. F. J. Poynton, who contributed a joint communication from himself and Dr. Alexander Paine. An interesting evening was closed by contributions from Mr. N. C. Macnamara and Dr. C. O. Hawthorne. Our report of the discussion is deferred until next week.

THE TREATMENT OF TUBERCULOUS PERITONITIS.

DR. BURNEY YEO'S paper on this subject which we publish in another column is of unusual interest. Tuberculous peritonitis is a condition fairly frequently met with, but the treatment of the condition has always been unsatisfactory. Many authorities have taken most despondent views as to the possibility of cure. Many facts connected with this disease, however, suggest that peritoneal tubercle is not possessed of great activity or powers of resistance, and that its natural tendency to obsolescence is readily facilitated by what appear to be but very trifling disturbances of the conditions under which it is developing. Dr. Yeo refers to the results of the surgical treatment of tuberculous peritonitis by which very successful results have been achieved, especially in the early stage and when there is always more or less ascitic fluid in the peritoneal cavity. A practitioner would naturally prefer to dispense with operative procedure if possible, although if he considered it the only means of cure he would certainly recommend it. Dr. Yeo draws attention to a method of treatment which he has tried with success—namely, the application to the abdomen of a liniment containing iodoform or iodine, at the same time administering internally a pill containing iodoform and creasote. He believes that when iodoform is rubbed into the skin of the abdomen in a young person it probably rapidly enters the blood and is, if regularly applied, continuously eliminated in the secretions, including the secretions into the serous cavities, and as these do not pass out of the body as the secretion of the kidney does they must in course of time become richly charged with iodine compounds, at any rate sufficiently so to act as antitoxin to the tubercle toxin or as anti-bacterial to the bacilli. This suggestion is a plausible one and this method of treatment will doubtless receive further and more extended trial. It is a fatal mistake to extol any therapeutic measure that has not passed the ordeal of extended experience, but we shall await with interest the reports of Dr. Burney Yeo and other observers who may adopt the line of treatment suggested by the above theory. It might be found advantageous to use some of those preparations recently introduced in which iodine is combined with a hydrocarbon basis by means of which, it is stated, the drug can be easily applied and is very readily absorbed.

THE INTERNATIONAL CATALOGUE OF SCIENTIFIC LITERATURE.

IN THE LANCET of March 9th, p. 736, will be found a letter from Dr. W. D. Halliburton dealing with this important matter. It will be seen by his letter that indexing and cataloguing commenced with all papers published on and after Jan. 1st of the present year and that there will be two indices—i.e., an index of authors and a subject index. The participating nations are to be severally responsible for the indexing of papers published in their own country, and a British bureau has already been formed for Great Britain and Ireland. There is in addition a central bureau to collect, coördinate, and publish the labours of the various national bureaus. Dr. Halliburton draws special attention to certain of the more out-of-the-way subjects connected with medicine and asks workers in these fields to send copies of their papers to certain gentlemen responsible for the sections under which the subjects in question are included. We are glad to be able to congratulate the promoters of the scheme upon its active inception. The work will be arduous and never ending, but it has in it possibilities of the greatest value to science. The enormous growth during the past century of every department of science has necessitated a corresponding growth in scientific records, and to reduce this mass of matter to a form in which its details may be easily accessible will be no light task. But the benefits accruing to science from such work will be commensurate with the difficulties of the task, and we can only express our sincere wish for the success of the various committees.

SICKNESS AND MORTALITY IN THE NAVIES OF THE WORLD.

DR. J. A. PORTENGEN of the Netherlands navy has made a praiseworthy attempt to compare the published vital statistics of the navies of the world, but owing to the variant data upon which the returns are founded "the final results of the comparison," as Dr. Portengen himself observes, "are not very encouraging." In some instances—as, for example, in the Netherlands navy and also in our own—medical officers are required to include in their returns every case of illness or injury, no matter how slight or trivial; whereas in others, notably the navies of Italy and Japan, only serious diseases are reported. The term "invaliding," too, has different values in different countries, meaning permanent retirement of the individuals invalided in some, while in others it refers also to patients sent to their homes or elsewhere on account of temporary disability and liable to be recalled to duty on the expiration of their sick leave. The death-rate in our navy, as well as in that of Japan, comprises the mortality from all causes, but in the German navy the deaths occurring under medical treatment are alone included in it. During the decade referred to in the subjoined table the English mortality is swollen owing to the loss of the *Serpent* off the coast of Spain, of the *Victoria* in the Mediterranean, and of a boat's crew in China; but the German rate is exclusive of the losses in the *Adler*, the *Eber*, and the *Iltis*. In the vital returns of the Danish navy all pilots and dockyard artificers, together with their wives and families, are included in the totals, which are thus rendered useless for the purposes of comparison; while in the navies of Spain, Portugal, and Chili the statistical information that has been issued is too imperfect and fragmentary to be of service. Up to the present the naval authorities of France,

Sweden and Norway, Turkey, Greece, and Argentina have abstained from publishing any vital statistics whatever, but according to a notification recently issued by the French Marine Minister, M. de Lanessan, this reproach will shortly cease to be applicable with regard to the first-named country. It is much to be desired in the interests of sanitary science that the vital statistics of all naval Powers should be drawn up in a uniform manner, admitting of comparison and compilation.

Annual Sickness, Invaliding, and Mortality per 1000 of Strength in the Navies of the Undermentioned Countries during the Decade 1888–1897.

Countries.	Sickness.	Invaliding.	Mortality.
England, Home waters	793·6	22·9	5·86
,, Indian ,, ...	949·5	23·4	4·52
,, Chinese ,, ...	1232·6	24·9	7·63
,, Pacific Ocean	1012·9	21·7	4·89
,, Mediterranean	1067·6	39·9	9·76
,, Cape of Good Hope ...	1215·4	36·7	7·87
Average	1043·6	28·2	6·67
Germany, Home waters	764·6	201·5	4·4
,, Indian	1020·4	74·8	6·8
,, Chinese	1281·7	123·6	8·2
,, Pacific Ocean	1051·3	59·7	7·7
,, Mediterranean	870·6	100·9	4·8
,, Cape of Good Hope ...	1514·9	92·3	6·8
Average	1083·9	108·8	6·4
Netherlands, Home waters	988·6	426·7	4·3
,, Indian ,, ...	2088·6	401·3	6·2
,, Cape of Good Hope	1571·0	277·8	4·4
Average	1549·3	368·6	4·9
United States	830·7	71·5	5·40
Italy	412·3	9·8	5·19
Japan	386·7	8·9	8·74
Austria	698·7	22·1	6·85
Russia	1159·3	22·6	7·19

THE BIRMINGHAM CONSULTATIVE MEDICAL AND SURGICAL INSTITUTION.

DR. H. WARD IRVINE having announced his retirement from the post of consultant to the Birmingham Consultative Medical and Surgical Institution it remained for those interested in that body to consider what they should do next. An advance in this direction was made on March 7th, when the delegates of the Birmingham Hospital Saturday Fund met in the Council Chamber to receive and consider a report from their executive committee upon the situation. Mr. Alderman Cook was in the chair and was supported by Mr. Arthur Chamberlain and Mr. Councillor Nettlefold. The executive committee asked the delegates to agree that a successor to Dr. Irvine should be immediately secured. The chairman, in asking the meeting to approve the recommendation of the executive committee, pointed out that the institution during the nine months of its existence had been applied to by 400 persons. In the discussion which followed Mr. Morgan, a delegate, asked whether the successor to Dr. Irvine, if he felt that he could not rely upon his own judgment, could transfer the case to a consultant at a fixed charge of half a guinea. The chairman pointed out that they could not make such an arrangement. If the consultants offered to adopt this course it would be worthy of consideration, but they had never given any assent in that direction. Dr. E. D. Kirby pointed out that there had never been any necessity for the scheme, for any general practitioner could always get a consultation for his patient at any fee which he thought that the patient was able to pay. He moved that the report should be referred back. The amendment, however, was not seconded and the motion to accept the report was agreed to. Mr. Chamberlain then addressed the meeting. He said that they would not quarrel with the medical profession about fees. The medical officers would be offered either all that remained over of the fees after paying expenses or else a fixed salary. Instead of one medical man he suggested two, three, or even four, and he considered that the medical men might meet and see whether they could not agree upon some such scheme. So this is the latest idea of the Birmingham Consultative Medical and Surgical Institution—a medical aid society pure and simple, run by a lay committee. At present the institution is without a medical officer, so we will defer further comment until it obtains one.

CHILD LABOUR IN ITS HYGIENIC ASPECTS.

THE subject of child labour in its social and hygienic aspects has again recently come up for notice in an important statement which has been prepared by Mr. A. Spencer, chief officer of the Public Control Department of the London County Council. Reference was made in these columns two years ago to the report on the subject[1] laid before the London School Board and the observations made thereon by Dr. T. J. Macnamara. Shortly afterwards the subject was referred to in Parliament by Sir John Gorst, Vice-President of the Council of Education, in his speech on April 28th, 1899, when submitting the education estimates. In a powerful and sympathetic speech Sir John Gorst analysed the statistical returns and the records of the histories of board school boys and girls who among the poorer classes had often to toil for 50, 60, or 70 hours a week, before and after school hours, to earn a living; he described the hardships and sufferings of these overworked and underfed children in passages of genuine eloquence and pathos, and gave several illustrative cases with every detail of their squalid and wretched lives, "a picture which," as was observed by the newspaper press at the time, "would haunt the memory for many a day after." The School Board returns in their aggregate show that the total number of children entered as employed is 144,026. The occupations of these school children, mostly boys, include—hawking goods, 4235; agricultural work, 6115; boot and knife cleaning, &c., 10,636; selling newspapers, 15,182; working in shops and running errands, 76 173; needlework (girls), 4019; and domestic work (girls), 20 849. Of these schoolboys and schoolgirls 30,807 belong to the County of London, and work on an average from 40 to 70 hours a week, eight boys working between 71 and 80 hours, and two over 80 hours a week. The pay given to the children is generally very small. In 40,240 cases it was from 1*s.* to 2*s.* per week, in 47,273 cases it was between 6*d.* and 1*s.*, and in 17,084 cases it was under 6*d.* per week. In 104,600 cases out of a total of 144,000 the children were paid 2*s.* a week or less. The average wage of the total number was about 1*s.* a week, but in some cases meals, and occasionally clothes, were given. The report laid before the School Board in February, 1899, said: "Probably some (of the children) die as a direct result of the severity of the toil inflicted upon them in their early years, and certainly many more of them must become a permanent and heavy charge upon the public purse because of the physical incapacity resulting from the rigour of their early

[1] THE LANCET March 11th, 1899, p. 707.
[2] THE LANCET, May 13th, 1899, p. 1309.

experiences." The report adopted by the School Board two years ago considered that the restrictive powers were insufficient to prevent the over-employment of children. In our previous remarks[3] suggestions were made to the effect that county councils should frame by-laws "preventing the labour of, say, children under 12 years before 8 A.M. and after 8 P.M., and to limit the total number of hours per week to, say, not more than 20 hours." Mr. Spencer's report summarises a number of facts and points out that "the present system presses heavily on a large number of children, who, worked to exhaustion out of school hours, are rendered unfit to receive any real benefit from the educational system provided for them." This was one of the very points on which emphasis was laid in our previous comments, in which reference was also made to the signs of fatigue, restlessness, and incapacity which such overworked children were prone to exhibit in the schoolroom. Juvenile employment is regulated by law as regards some occupations—e.g., the stage and the circus. Liverpool and several other towns have done something to regulate juvenile employment, and it may be suggested that some alteration or addition might be made as regards municipal laws by the London County Council in order to deal with the problem in London. Such a reform would tend not only to the good of these unfortunate boys and girls, but would be fraught with benefit to the race in the next generation.

AMONG the new Knights of Grace of the Order of the Hospital of St. John of Jerusalem in England will be found Mr. Frederick Treves, Mr. A. D. Fripp, and Colonel G. S. Ryerson, M.D., their appointments being in recognition of their services to the troops in South Africa. Earl Roberts is also appointed to the Order, as are the Duke of Portland, Mr. Langman, Mr. Alfred Moseley, and Mr. Van Alen, all of whose work in connexion with the voluntary hospitals of the South African campaign is well known to our readers. Sir John Furley is promoted from Honorary Commander of the Order to Honorary Bailiff.

A TELEGRAM from W. F. Hely Hutchinson, Governor of the Cape of Good Hope, to Mr. Chamberlain, received at the Colonial Office on March 12th, 1901, states that the plague report for the week ending March 2nd was as follows:—Cases admitted, 24; deaths, 2; suspects, 4; contacts, 215. For the week ending March 9th the report was:—Cases admitted, 50; deaths, 18; suspects, 11; contacts, 299.

THE Council of the St. Andrews Graduates' Association are presenting an address expressive of condolence with the King on the death of her late Majesty Queen Victoria, and of loyalty and congratulation to His Majesty on his accession to the Throne. A similar loyal address has just been presented by the York Medical Society.

IT is proposed by his old friends, colleagues, and pupils at St. Bartholomew's Hospital to present Sir Thomas Smith with his portrait to commemorate his long connexion with the hospital. Subscriptions, which are limited to two guineas, are now being received by the treasurer of the fund, Mr. W. J. Walsham, 77, Harley-street.

THE Senatus of the University of Aberdeen are about to confer the honorary degree of LL.D. upon Professor Virchow of Berlin, Major Alfred W. Alcock, I.M.S., Superintendent of the Indian Museum, Calcutta, and Professor of Zoology in the Medical College of that city, and Dr. Angus Fraser of Aberdeen.

[3] THE LANCET, 1899, loc. cit.

HIS MAJESTY THE KING has graciously consented to continue to be patron of the Metropolitan Hospital, Kingsland-road, N.E. Mr. A. H. Allhusen, M.P., will preside at the festival dinner in aid of the funds of the hospital, to be held at the Whitehall Rooms on April 22nd next.

THE President, Vice-President, and Council of the Royal College of Surgeons in Ireland give notice that they will on Thursday, April 18th, elect a Professor of Surgery in the room of Sir William Stokes, deceased.

IT is announced that the King has been graciously pleased to appoint Sir Richard Douglas Powell, Bart., and Sir Thomas Barlow, Bart., to be Knight Commanders of the Royal Victorian Order.

DR. E. B. FORMAN, who sought re-election to represent North Hackney on the London County Council, but was unfortunately defeated, has, we are glad to see, been elected an alderman

SIR WILLIAM MAC CORMAC, Bart., K.C.V.O., P.R.C.S., is to receive the Honorary Freedom of the Barbers' Company on March 26th.

THE annual general meeting of the Medical Graduates' College and Polyclinic will be held on Tuesday, March 26th, at 5.30 P.M.

HIS MAJESTY THE KING has graciously consented to become the patron of King's College Hospital.

THE STATUS OF THE COUNTRY DOCTOR.[1]

BY HARRY ROBERTS.

THE commencement of a new century, though it is really but an artificially selected moment, is a convenient time for considering our position, for looking back, and for contemplating the future. All of us in this room have this much in common—that though we may not all live in little villages we may all be classed as "country doctors," and it is in this inclusive sense that I use the term. There can be no doubt that from one cause and another the power of country doctors has very much increased of late years. To a large extent the village doctor has nowadays often much of the influence formerly wielded by the parson, and this displacement is growing. This improved status is largely due to the fact that we are better educated than our predecessors, for culture generally, in the long run, means influence. Until lately the parson was usually the only educated man in his parish, and almost the only educated men in our ranks were the separate class of "physicians" who, although frequently ignorant of medicine, were almost invariably men of culture and wide knowledge as these were then accounted. It is from this fact that "physician" has conveyed to the popular mind a sense of learning and of status far beyond that given by the titles of "surgeon" and "medical practitioner."

But in spite of Solomon there are new things under the sun, and culture in the twentieth century means a different thing from culture in the eighteenth. An acquaintance with "smutty" Latin jokes is no longer sufficient to stamp a man as a gentleman and a man of learning. A familiarity with the works of Latin and Greek writers is now of little value as the stamp of the cultivated mind, knowledge bounded by words being at length recognised as pedantry instead of wisdom. To be acquainted with the thoughts and points of view of the great writers and dreamers of the world—modern as well as ancient—to have lived freely among

[1] A paper read before the West Penwith Medical Society on Feb. 13th, 1901.

people of many conditions, to have spent much time among the higher regions of existence,—these are some of the things which go to make up culture as we now understand the term.

Greater culture means greater tolerance, greater sympathy because fuller understanding, and as a result greater power and influence. No sane man would suggest that we should imitate the old physicians and replace our technical knowledge by ever-so-desirable a general wisdom; but if we are to be other than mere artisans and tradesmen it is essential that our knowledge should go somewhat beyond technique. A familiarity with the thoughts and philosophy of others, moreover, may help in suppressing that bumptious, pedantic assumption of wisdom which has ever been a characteristic of our profession. Even in the twelfth century we find the learned John of Salisbury saying of our professional ancestors of those days: "The professors of the theory of medicine are very communicative, they will tell you all they know, and, perhaps, out of their great kindness, a little more. From them you may learn the nature of all things, the causes of sickness and of health, how to banish the one and how to preserve the other; for they can do both at pleasure. They will describe to you minutely the origin, the beginning, the progress, and the cure of all diseases. In a word, when I hear them harangue, I am charmed. I think them not inferior to Mercury or Æsculapius, and almost persuade myself that they can raise the dead. There is only one thing that makes me hesitate. Their theories are as directly opposite to one another as light and darkness. When I reflect on this I am a little staggered. Two contradictory propositions cannot both be true."

The pomposity which has by nearly all lay critics from Molière to Sterne been associated with practitioners of medicine has been due to two main causes: firstly, our lack as a mass of any knowledge of the great book of wisdom outside our own chapter of medical and surgical handicraft; and secondly, our utter lack as a profession of any sense of humour. When a carpenter speaks to us of his work, or a gardener of his, we all feel able to follow his talk and to offer some criticism, but it so happens that the work of doctors is of such a nature that the lay public know nothing at all about it. Hence it has been that a surgeon or a physician, knowing his own trade and recognising that he stood head and shoulders above the public in that small subject, believed that he was indeed an Admirable Crichton. This belief was, of course, based on his ignorance of the fact that there are other sorts of wisdom, other branches of knowledge, than the one or two he had heard of. Our venerable priggishness, our owl-like expression, our grave shakings of head, our solemn hat and coat, to the gods and to anyone who knows on what shallow pretence these absurdities were based there was food for many hearty meals of laughter. Scarcely an English wit but has been stimulated by the study of one of our typical colleagues. We have in the past seemed to suggest a sort of glorified farcical cheesemonger as our ideal. Even now we are respectable or nothing. Strip us of our respectability and we cannot as a herd be told from a crowd of deacons of Little Bethel—the same smugness, the same lack of humour, the same worship of the sacred Mrs. Grundy, the same fear of overstepping the stupid little laws and customs which prevail among the ignorant middle classes of our country districts. For what does all this "caste" which forms the basis of country life amount to? Were it founded on differences of intellect or on differences in taste or temperament there might be supposed to be some weird reason for the snobby cliquism which is so familiar to all of us. But it is not so. A man or a woman may be possessed of the keenest intellect, the finest taste, and the most developed temperament, yet if he or his father happen to be engaged in a fatal occupation such as manual work or retail trade his position in an English village or provincial town is not one to covet. So fundamental is the British worship of respectability that a recent writer has suggested it as an explanation of the habit of our ancestors of painting their bodies with woad. This colouring was the badge of their gentility and it was their pride that even in battle, though their enemies might take away their clothes, they could never strip them of their respectability. Things are much the same to-day. The "lady" whose grandfather perhaps was the honest host of the village inn, but whose father washed out the stain of the bar-parlour by a life of idleness, would choose death rather than the soiling of her drawing-room carpet by the feet of one not blessed with so much blue-blood. The successful clerk who has worked or wheedled his way into a partnership would offer but a frigid reception to his colleagues of former years. Of such stuff is ordinary English middle-class society built up. Such are the "ladies" and "gentlemen" at whose shrine most of us bend the knee All this might be and should be altered. We, more than any other body of men, have power to do a very great deal to break down this childish and stupid game of "pretend we're real ladies and gentlemen," and so make country life less narrow and ignorant, more pleasant and cosmopolitan. We have this exceptional power on account of our intimate and peculiar relations with people of every class; and if we train our minds and hearts and regulate our lives with wisdom we may in time become the true directors of provincial social life. By proving that we at least are educated gentlemen, and that our lives are "*sans peur et sans reproche*," by showing further that we have no regard for the foolish little exclusiveness of provincial society, but that it merely excites our mirth, we may wield an enormous influence in the direction of overthrowing snobbery and bourgeoisdom. In a like manner we may do much to overthrow the equally ignorant and equally despicable form of pompousness—the pompousness of moral superiority which we commonly call "puritanism." At the bottom of the Anglo-Saxon heart is a firm conviction that all pleasure is sin, and this is a conviction which wants weeding out. In the Christian virtue of moral charity I think we compare favourably with the Christian church—but even in our ranks are plenty of moral prigs.

In a former paper which I read before this society I pointed out how essential to successful medical practice is deception. It is interesting to learn that this has always been more or less recognised. Thus about the year 1100 a very distinguished physician, Archimatthæus, wrote in his "The Instruction of the Physician": "Upon entering the house of his patient the physician should salute all with a grave and modest air, not exhibiting any eagerness, but seating himself to take breath he should praise the beauty of the situation, the good arrangement of the house, the generosity of the family; by this means he wins the good opinion of the household." On leaving he is to promise the patient a good recovery, but to tell the friends privately that there is much danger. "If he recover, your reputation is increased; if he succumb, people will not fail to remember that you foresaw the fatal termination of the disease." Even Bob Sawyer's trick of being called from church was very hackneyed in Dickens's time, for in the seventeenth century Gideon Harvey, one of the physicians to Charles II., wrote, that "the church door shall no sooner be opened but *ecce* Mr. Doctor, sitting in the most visible seat, Grave, Deaf, Dumb, and immoveable, as if an apoplexy of Devotion had seized him, out of which his Apothecary is to raise him by knocking at half-sermon at his pew-door to fetch him away post to a dying patient; by which means he draws the eyes of the whole congregation after him; but instead of going to a pretended House of Visitation they both drop into a cabaret, there to pass the fatigue of a forenoon Sunday. This knack of confederacy is to be repeated several Dominical days, until it hath made an impression on the people; that he is a man of importance, and of great Physick business." If we wish to convince, nowadays, we must be original and a little more subtle in our humbug.

There is one other feature in the popular picture of the doctor's character which should have a little consideration. When the humorists who have held our profession to ridicule have not been pointing to our pompousness they have usually had a shot at our zeal in pursuit of fees. As things are at present arranged, it is of course true that those who do useful work are right in seeking payment for the same. But there is a wise and a foolish course here. As far back as the twelfth century we find John of Salisbury writing of doctors that "they have only two maxims which they never violate; never mind the poor, never refuse money from the rich." As a matter of fact, no profession does such an amount of gratuitous work for the poor as does the medical profession, but for the most part we render our gratuitous services with such a bad grace that we get no personal satisfaction or public recognition. We are too apt to keep the fee ever before our eyes and on our lips, whereas the wise and pleasant way is surely to do our work smilingly as artists and as men of science, taking pride in our power and skill and regardless for the time being of the money payment we shall or shall not receive. By haggling

over money we degrade ourselves, lower the dignity of our profession, and in the end defeat our purpose and lower our status in the community. If we do our best for every patient who seeks our help, regardless of his wealth or quality or honesty, and content ourselves by merely sending out our quarterly or yearly bills, we may make a certain number of what money-grubbers would call bad debts, but our annual income will be as big as it would be if we adopted the dunning methods of the tradesman. We shall moreover, be spared the constant annoyance and irritation resulting from friction with our patients and our consciences.

On the whole, we may say that the position of the country doctor is better to-day than it has ever been, and that if we play the game skilfully and fairly, and take to heart the satires of the humorists, we may still further improve our status, our influence, and consequently our power of materially modifying the structure of provincial life. This is no despicable destiny.

Hayle.

THE ROYAL COMMISSION ON SOUTH AFRICAN HOSPITALS.

(Continued from p. 735.)

IV.

WE have commenced this series of articles with a summary of the report of the Royal Commission on South African Hospitals. We now proceed to deal with that report and with the evidence upon which it was drawn up. Nor shall we confine ourselves to these limits, but shall consider the whole question of the reorganisation of the Royal Army Medical Corps. Since we began this series of articles events have progressed with rapid strides. The debate on the Address afforded an opportunity which has not been neglected for seeking information from the Government as to its intended action in regard to the report of the Royal Commission on the South African Hospitals; and, as a reference to our Parliamentary Intelligence will show, this had the effect of eliciting a very important statement from the Secretary of State for War which has apparently materially altered the complexion of the case. Reform in the Royal Army Medical Corps has been promised.

The war in South Africa, and the causes which led to it, have, as everyone knows, given rise to a very voluminous literature; and even that portion of it which deals with the medical aspect of the campaign, especially in connexion with the South African Hospitals controversy, has already reached considerable dimensions. The latest additions to the subject have been the report and minutes of evidence of the Royal Commission with an appendix, and Mr. Burdett-Coutts's book on "The Sick and Wounded in South Africa" (which was published before the report), followed by his two very lengthy communications in which he reviews and animadverts upon the report of the Commission in a very trenchant and adversely critical way. The official report of the Commission consists of 71 folio pages, the minutes of evidence of 565 pages, and the appendix of 368 pages—to say nothing of reports of speeches in Parliament and of the published communications which have preceded and followed the appearance of the report itself. The amount of evidence afforded by such publications, which had to be considered, made it impossible to deal quickly as well as fairly with the question.

The subject is one which touches our national honour and interest and deeply concerns all classes of society. Our medical policy in time of war is a matter which should be kept altogether aloof from mere political considerations and party spirit, or class feeling and prejudices of any kind. We have always held and expressed the view that what is best for the public interest in general is best also for the medical profession whether in the army or out of it. We can only say on behalf of that profession that if an end can be put to these painful and recurring controversies, and if any measures of army medical reform can be devised for improving the organisation of the Royal Army Medical Corps, or for providing a better system of medical service in war than exists at the present time, so as to bring it more into harmony with all the requirements of the age in which we are living and those of modern warfare, there is no section of the community which will welcome or feel more grateful for these measures than the medical profession. We have carefully studied the reports and publications which have appeared and as the result of our labours we have left off with a conviction—which has been a growing one for some years past—that the time has come for re-considering the whole question, for enlarging our ideas and schemes, for putting matters upon a different and bigger platform than they now occupy, for, in short, introducing some new, bold, and broad measure of army medical reform while retaining all that is right and sound in principle or of proved value in the present system. The prevention of the diseases incidental to war, no less than the care of the sick and wounded, during a campaign, have always been, and, despite all we can do, will probably always continue to be, a very difficult problem for practical solution. What with the employment of highly mobile forces and the rapid marches and swift changes of position which modern methods of warfare necessitate on the one hand, and the growing feeling of patriotism and philanthropy and the advances in medical and sanitary science on the other hand, the problem is likely to be one of increasing difficulty and complexity rather than otherwise. But it must be boldly faced and deliberately considered. The creation of a British empire, the nature and size of armies, and the vast changes which have taken place in the science and art of war, have all tended to render the older methods of medical relief in war more or less of an anachronism. Viewed in this light we may regard the action of those who have brought about the appointment of a Royal Commission of inquiry into the care of the sick and wounded in the South African campaign as likely to be productive of much good instead of the reverse. Notwithstanding that the action initiated by Mr. Burdett-Coutts in his letter published in the *Times* of June 27th, 1900, and in some of his subsequent communications did not in form and course commend itself to our mind, we did not hesitate to declare that the main facts were sufficiently clear and, while waiting for a full explanation of the causes which led to them, we deplored their occurrence.

Since the publication of the report of the Royal Commission and of the strictures and criticisms which it has called forth, the question has, as we have said, made a great advance, for it has formed the subject of debates in which several speakers took part in both Houses of Parliament. Mr. Burdett-Coutts, who has, in his published letters, traversed the report from end to end, has asserted from his place in Parliament that the inquiry of the Commission has not been conducted in a way calculated to elicit the whole truth, and that the defects in the Army Medical Service have been concealed and buried in the lame and impotent conclusions of the report. We may fairly leave the Commission to take care of its report and to justify the course pursued and the conclusions at which it has arrived. Meanwhile the Secretary of State for War in a most important speech has made large admissions about the state of the Army Medical Service and has given such pledges in regard to it as should go a long way towards satisfying Mr. Burdett-Coutts. Mr. Brodrick has emphatically pledged himself to the introduction of a new and more satisfactory system which can only be brought about, he considers, by a drastic reform of the Army Medical Service; and Mr. Brodrick adds the promise that no effort shall be wanting, and that no past prejudices shall be allowed to intervene or to prevent the army from being given in the future an effective medical service. The machinery to be employed for the purpose, which will presumably be a strong Commission, has not yet been definitely settled, but we are promised that the advice and aid of the heads of the medical profession will be sought.

Turning now to the consideration of the report, we find that the zeal, devotion, and conduct of the medical officers generally who have taken part in this war have been admitted, and many of them have been highly commended. Not only will this be seen in the report itself, but more especially in the volume containing the Minutes of Evidence on the part of Lord Roberts, Mr. Burdett-Coutts (page 85), Mr A. Bowlby (pages 212–213) and of several others. We may here remark that all those who are specially interested in the subject should not rest content with simply reading the Report of the Commission. It was not until we had referred to the Minutes of Evidence that we were really enabled to appreciate the strength of the medical officers' position and the splendid work they had done, or to form

any adequate estimate of the great difficulties (which were for the most part of an unavoidable nature) that had to be overcome. Dipping into that volume and taking some of the evidence indiscriminately—such as that of Lord Roberts, Lord Kitchener, Mr. Watson Cheyne General Kelly-Kenny, Mr. A. Bowlby, Dr. W. Johnson, Major Bedford, Surgeon-General Wilson. Colonel E. W. D. Ward, and Surgeon-General Stevenson—will enable any dispassionate reader to form his own opinion on these points. We may consequently dismiss from consideration any question whether the Royal Army Medical Corps did their best in the circumstances. What the medical officers probably feel, however, is this: that all their laborious sacrifices and efforts have nevertheless ended in disappointment, and that they have somehow been very undeservedly identified with failure. One of the most noteworthy features of this war, it may be remarked, has been the adverse criticism to which almost all connected with it have been subjected. South Africa has proved the graveyard of several military reputations. Soldiers of repute have left this country only to realise, as a high Ministerial authority is stated to have remarked, that the South African campaign has been "one of miscalculations and disillusions." If the army medical service is to be re-organised under a fierce fire of criticism it will be at least the duty of all concerned to see that its newly-organised successor, which is presumably to appear phœnix-like out of its ashes, is something better and more complete. Nor do we despair of this being the outcome of the present situation. Towards this end we shall have much to say further on. Speaking generally of the report of the Royal Commission we may remark that it strikes us, as might have been expected under the presidency of Lord Justice Romer, as judicial in tone and eminently fair, although insufficiently vigorous, perhaps, in character. The Commission by its composite constitution was well fitted to take a reasonable, common-sense, and business-like view of the facts and evidence and of the military aspect of the situation; whereas much of the adverse criticism which the report has called forth from Mr. Burdett-Coutts is put from the advocate's point of view and with no little forensic skill. It is, moreover, advanced in defence and justification of a previously assumed position. After a brief account of the proceedings taken by the Commission the report leads off with some observations upon the evidence and the difficulties that had to be contended with in ascertaining the true condition of affairs, arising from various causes which are enumerated (page 3). It is, of course, always open to anyone to say—as, in fact, it is said—that owing to the operation of fear and other motives a very little knowledge of human nature, and especially of the military form of it, will lead to concealment of the truth. The Commissioners, however, it seems to us, took all the precautions which they could in this respect to arrive at just conclusions. Under the head of work done the Commissioners acknowledge that the Government and the military and medical authorities, both in England and South Africa, rendered every assistance and freely supplied all information that was called for (page 4).

Part II. of the report starts with some conclusions on various points of a general character having reference more especially to the war reaching a magnitude which the military and medical authorities had never anticipated that it would attain, to the hospital and ordinary provisions for the sick and wounded on active service in the field, and to some important points in connexion with the present campaign which require to be considered in the case of future wars. Under the headings of unit allowances and stationary and general hospitals a clear description of the hospital service is given. The evidence of the Director-General of the Army Medical Service and that of Lieutenant-Colonel Johnston and Major W. G. Macpherson, R.A.M.C., and others published in the volume of Minutes of Evidence may be usefully referred to in connexion with this part of the subject. The pivot of the whole field medical service system is to relieve the fighting force in front as much as possible of sick and wounded men by relegating them to the hospitals in rear. This is the direction which the sick and wounded must all eventually take, for only at the rear can they be provided for in the permanent hospitals—stationary and general. And here they should be in as well-equipped a hospital as at home. It is to be noted, the report tells us, that the South African campaign is the first in which stationary and general hospitals as now arranged have been made use of. Although there is no finality about anything, and there is plenty of room, no doubt, for developing and improving our methods of dealing with the sick and wounded in war, the principle of this present system is a sound one and has been generally adopted. There is no other method which leaves the general in command so free to follow out his plans untrammelled by the care of his wounded, and there is no better way of systematically stripping a battle-field of its wounded and securing prompt medical treatment, or of effecting the transit of the sick and wounded from the battle-field in front to the base, nor can the overcrowding of hospitals be better avoided. But its successful accomplishment pre-supposes that access to and from the fighting front to the base is fairly safe and free, that there is plenty of available transport, that the distance between the front and the base is not too great, and that the different kinds of hospitals are only used for the purposes for which they were intended; that, for instance, a lightly equipped mobile field hospital which has to move on with the force and is only intended for the *temporary* detention and treatment of its occupants shall not be diverted from its purpose and used as a permanent or general hospital for which it was never designed and to which it is not at all adapted. At page 5 of Part II. and again in Part III. of the report attention is called to the numerous complaints which arose from the fact that in the South African campaign field hospitals had to be used as fixed hospitals. But to resume. The view that the proper method of treating the sick and wounded is to transfer them to permanent hospitals at the rear as quickly as may be is generally regarded as a sound one. We beg our readers to bear this in mind and to carry it with them throughout their reading of everything connected with the history of this campaign. It supplies a key which opens the door to our comprehension of some of the positions in South Africa, especially, as it seems to us, in connexion with the events which followed Paardeberg. It serves to illustrate, in our opinion, that one of the great needs of modern war, and especially under such conditions as obtained in South Africa, which will have to be considered is that of a more active organisation, as far as possible, of stationary hospitals. The system of evacuation of the sick and wounded we have alluded to has been followed more or less in all wars, but it was most largely and systematically carried out by the Germans in the Franco-German war. In the case of the South African campaign 10 per cent. hospital accommodation was fixed upon, but that was, after all, a nominal rather than a real percentage. The custom of evacuation and the large and persistent relief of the hospitals by transport-ships proceeding to England were taken into account in making the calculation, and as a matter of fact an enormous number of invalids in the aggregate embarked for this country, with the effect of systematically freeing the hospitals in South Africa. The system has its disadvantages in requiring for complete efficiency to be worked in its integrity, and in causing some vicarious suffering in the transport and movement of some part of the wounded and sick for the benefit of the whole.

The ideal plan, which can only be in a measure carried out under exceptional conditions in small wars, is to carry the hospital to the wounded instead of the wounded to the hospital. But in proportion to the extent of area forming the theatre of war, the number and rapidity of the movements, the distance between the force operating in front of the base with its suitably equipped stationary and general hospitals, is the difficulty of getting the sick and wounded properly accommodated and treated. The sooner a campaign is over the better it is, of course, in every way for the army as a whole, but the harder it is for the medical service, the transport, and all supply departments. The aim should be, in order to guard against any temporary hitch, breakdown, or exceptional conditions—and the point has not been lost sight of in the report—to have, as we have said, the better equipped so-called stationary hospitals capable of being moved to the place where they are wanted; in other words, to create and to open out, where it is possible to do so, new temporary bases of operation. But where a force has to separate itself and to cut itself off from all means of communication, and where its commander is ignorant of what the morrow may bring forth, the military difficulties may obviously be insurmountable. The force can only carry the very lightest and most mobile hospitals with it, and it may altogether outmarch its

supplies. It is not difficult to apply this reasoning to the case of the campaign in South Africa; and it will form a very important subject for inquiry as to how far we can adjust the number, amount, scales, and patterns of the hospital and medical *matériel* to meet such contingencies in the future. We are of opinion that more might be done in this way.

"In the second edition of the Field Medical Service Manual for India, Section IX., General Hospitals, we read, for example, that general hospitals will be established in multiples of 50 beds, but in no case will the accommodation exceed 500 beds for a single hospital. Moreover, each general hospital with an army corps is a unit of 500 beds, but with a view of decentralising the duties it will be divided into sections of 100. It will be remembered that the use of the word "beds" is misleading, for the field hospitals, which are only intended to move with an advancing army and must therefore be very lightly equipped, have no beds, only a limited supply of stretchers. They have rapidly and frequently to evacuate their occupants. Nor have field hospitals any female nurses. (And here we may parenthetically remark as a matter of detail that where bedsteads do actually form part of any hospital equipment they might for various reasons be of less width than that of the regulation pattern, and that some carpenters with their tools would prove a very useful addition to the staffs of hospitals.) We quite agree with the Commissioners in their remarks about the present pattern of army ambulance wagons; they are altogether too heavy and too elaborate to be adapted to localities in which there are not fairly good roads. We agree also with what they say in this part of their report about the usefulness of the "E.P." Indian tent and the Ordnance Store tent for hospital purposes and with their suggestion as to the possible improvement of the hospital marquee ordinarily supplied to the British army; also in what they state about the increased employment of female nurses in *fixed* army hospitals supplemented by properly trained orderlies. The proper hospital training of military orderlies is a matter upon which we shall have something to say hereafter. We have italicised the word "fixed" because we do not consider that female nurses should accompany the fighting force to the front, and the same is, we believe, the opinion of all officers.

ANNIVERSARY DINNER OF THE MEDICAL SOCIETY OF LONDON.

THE Fellows of the Medical Society of London held their 128th anniversary dinner on March 8th at the Hôtel Métropole under the presidency of Mr. J. H. MORGAN. The interesting feature of the evening was the defence by Sir William Church of Sir William Mac Cormac and Mr. Frederick Treves from the inference to be drawn from Mr. Burdett-Coutts's remarks—namely, that on their return from South Africa they had misled the country by making laudatory speeches on the conduct of the medical departments in the campaign, when at the very time our hospitals and troops were, in the opinion of Mr. Burdett-Coutts, suffering from absolute neglect.

Sir WILLIAM CHURCH said that it was the first opportunity he had had of alluding to the Commission. He thought it would be within the recollection of most that the letters of Mr. Burdett-Coutts from South Africa had somewhat roused the attention of the country, and in those letters he had put forward that whilst members of the medical profession who had been in South Africa were making laudatory speeches on the conduct of the medical department concerned at that very time the hospitals and troops were suffering, in his opinion, from absolute neglect. Mr. Burdett-Coutts did not go so far as directly to attack Mr. Treves and Sir W. Mac Cormac for their reports which they presented to the country, but he seemed to wish the country to infer that they were seeking wilfully to mislead the country. No Commission ever undertook work with a feeling of more responsibility, no Commission ever worked so hard; it was felt that it was necessary for the country that their report should come before the country as quickly as possible. It had been stated that the Commission hurried through the work; they did hurry through their work, but they might say that though they hurried through it they did not do it badly. The Commission landed at Cape Town before 10 in the morning; all arrangements had to be made, their secretary had to negotiate for the room in which to hold meetings, and they had to fix what witnesses should be seen. In spite of all this the Commission opened at three in the afternoon of that day. For 34 days the Commission worked, Sundays and all, without cessation. He was only speaking the truth when he declared that during those 34 days they did not break off from the work of the Commission to see any sight or to see any object of interest; the only recreation which they had was that after taking evidence till about 12 30 on one day at Johannesburg they were invited to see something of the mines of the place. A few accepted that invitation, and that was the only thing in the shape of a sight or amusement that the Commissioners indulged in for the first 34 days in South Africa. Their report was divided into different heads, and the Commissioners were thoroughly convinced that up to the time and after the time that Sir William Mac Cormac and Mr. Treves left South Africa there was nothing to call in question. There had never been a campaign carried on by any country in which anything like such perfect arrangements for the sick and wounded had been in force. In the campaign up to a certain period, up to the time that the army left Modder river for the march to Bloemfontein, up to that time the care of the sick and wounded in that part of South Africa had been quite extraordinarily good, and the same, he thought, applied to the Natal side. But after the most remarkable march of Lord Roberts to Bloemfontein there was no object in concealing that the condition of affairs at Bloemfontein was most distressing and most sad. Those conditions, however, surely must always arise in war. He considered that the country was led or might have been led by the letters written from Bloemfontein to judge that these circumstances were quite avoidable, but without saying that everything was as well managed at Bloemfontein as possible, it must be conceded that a great deal of it was unavoidable if one judged fairly. Lord Roberts told them that for 14 days after he arrived at Bloemfontein he never knew whether he could feed his army or not. His first thought daily on waking was—Had he enough food to feed the army that day? For a great many more than 14 days the commissariat was never more than 12 hours ahead of the army's needs. There was no use attempting to conceal the fact that the condition of their sick was extremely distressing, but what would be the effect supposing suddenly in any one of our best managed hospitals three times the number of people were admitted than they had provision or attendance for? That was the case with the two general hospitals which were so much attacked at Bloemfontein. Now, without saying too much, it was regrettable that over these two hospitals on which the stress came it so happened the principal medical officers were less capable than were other principal medical officers whom the Commission came across. One of the two had afterwards to be removed and sent home and the other seemed not to be quite the right man in the right place. On this account the attack was made especially on Sir William Mac Cormac and Mr. Treves, as if they were wilfully misleading the country, and it was most unfair and unjust. The outbreak of fever at Bloemfontein that continued on the whole march to Pretoria was at the root of the trouble. There was no doubt that the army medical service, like the other parts of the army, was inadequate. All portions of the services were inadequate, no one had any idea of the magnitude of the task. There was no denying that many things were wanting, especially with regard to the hospitals. He would like to bear witness to the magnificent work which was done by a great number of the members of the Royal Army Medical Corps, not only the magnificent work which was done by them, but also the great powers of organisation which many of them showed. He would not mention any names, but in different places he came across men of great fitness who in extreme difficulties were obliged in important matters to exercise their own judgment entirely, to make their own arrangements, and perhaps to transgress the ordinary rules of the service. These men organised matters in such a way that the necessary suffering was, in his opinion, reduced very considerably.

Mr. TREVES delivered some remarks in a lighter vein and received a cordial reception, his happy allusion to the plain boiled sole so uniformly ordered by medical men as "that

small fish taken out of boiling water and placed in all its pallid nakedness before the sick" being one of the many good things in his remarks.

ASYLUM REPORTS.

The Western Counties Idiot Asylum, Starcross, Exeter (Report for the year ending May 26th, 1900).—The board of management in their report state that the progress of the institution continues to be satisfactory and encouraging. The number of patients in residence on Dec. 31st, 1899, was 250 and comprised 165 males and 85 females. During the year 31 children were admitted, 28 were discharged, and three died. The ages of the children admitted ranged from six to 16 years, the average being 10 years. The majority are regarded as being of a decidedly hopeful character and likely to be greatly benefited by the system of treatment and training adopted at the institution. The degree of improvement effected in patients about to be discharged varied from a slight improvement in habits and general intelligence to a fair degree of industrial efficiency, the former improvement, although apparently of slight importance, being much appreciated by the friends of the children. The manual and industrial occupations taught are as follows. The girls learn dressmaking and needlework, both plain and fancy, straw-hat making, and laundry and ordinary domestic work; while the boys are instructed in shoemaking, tailoring, basket-making, carpentering and woodwork, and the manufacture of sash-cord. Musical and military drill is regularly taught and practised. Mr. E. R. S. Lipscomb, the medical officer, states in his report that the health of the patients throughout the year has been good. There have been no diseases of the zymotic type. One case of broncho-pneumonia recovered, one of pleurisy became worse and tuberculosis was suspected as being present. Two girls developed symptoms of acute mania and had to be removed to another asylum; 35 boys and 15 girls were attacked with influenza of a mild type and all recovered. Two girls died from phthisis and one from membranous croup. The finances of the institution are in a healthy condition, there being a balance of £106 in the hands of the treasurer at the end of the year. Additional ground is being acquired and improvements are in progress as regards the arrangements for the prevention and extinction of fire.

London County Asylum, Bexley Heath (Report for the year ending March 31st, 1900).—At the beginning of the year 1899 262 male patients were housed in the female epileptic and chronic wards and by the end of February the available accommodation for male patients was utilised to the fullest extent, and 300 male patients were under treatment. Early in April, 1899, the remainder of the female wards were ready for occupation. The male patients were all transferred to new wards on April 12th, which allowed for the reception of female patients a week later into the wards which they vacated. The average number of patients resident during the year covered by the report was 704 and comprised 411 males and 293 females. During the year 1165 cases were admitted and of these 499 were males and 666 were females. Dr. T. E. K. Stansfield, the medical superintendent, states in his report that the admissions consisted mainly of patients transferred from provincial asylums and from licensed houses in the metropolis where they had been till then boarded by the London Asylums Committee. The admission and distribution of the patients formed a laborious task, and it is gratifying to be able to state that no casualty or untoward event occurred. "It would be a great boon," says Dr. Stansfield, "if when opening a new asylum one could have all new cases—i.e., recent cases; the introduction of new methods and the attempt to start from the highest rung of the ladders one has previously built is seriously hampered by the introduction of chronically institutioned patients who have been weeded out from other asylums, usually on account of their chronicity and worrying and troublesome habits." Referring only to the "recent" cases of insanity admitted during the year it appeared that intemperance in drink was the cause in 40·25 of the males and 14·2 per cent. of the females, while syphilis was considered to be the predisposing or exciting cause in 22·8 per cent. of the males and 6·6 per cent. of the females. "How easy it was for the most careful clinician to overlook syphilis is well exemplified by a case ..... which had been the subject of several conferences. ..... There was a total absence of traces externally on the body, ... the history of the case was antagonistic to it, and yet the autopsy revealed a gumma situated in the pre-frontal region which was associated with destruction of brain tissue and erosion of the skull, and a scar was found on the os uteri." The clinical features of this case were progressive dementia, the sudden onset of epileptiform convulsions, and the development of status epilepticus, followed by death. 39 males and 27 females were admitted suffering from general paralysis; of the males 31 had evidence of previous syphilis, one was doubtful, and in seven no trace could be made out. Of the 27 females 18 had undoubted syphilis, two were doubtful, and seven had no trace. In one of the females who died the necropsy revealed syphilis which had not been noted clinically. Congenital mental defect was ascertained in 18 per cent. of the male and 15·9 per cent. of the female admissions. During the year 95 patients were discharged as recovered—viz., 31 males and 64 females. One patient escaped. The total number of deaths was 78, being 11 per cent. on the average number resident. In 77 cases post-mortem examinations were made. There was no inquest during the year. A female patient was admitted under restraint wearing a long-sleeved jacket and showing many bruises and festering cuts, evidently the result of destructiveness. Her heart was in a very feeble state, and she succumbed 14 hours after admission. An outbreak of influenza occurred at the end of the year, attacking both patients and staff and handicapping the work of the institution. Five female patients admitted while pregnant were safely confined, one of twins a few hours after admission. The asylum has been lighted by electric light since April, 1899, and with most satisfactory results. Telephones, call-bells, fire-alarms, and tell-tale clocks have been fixed. The calling up of the reserve forces during the war caused a serious drain on the male staff and for a time the working of the male side was conducted with difficulty. The asylum sub-committee state in their report that owing to the limited pasturage available no cows will be kept. The sinking of a well has been completed and during the first seven months about 7,000,000 gallons of water were obtained at a cost of 2·1*d.* per 1000 gallons as against 10*d.* charged by the Kent Waterworks Company. The expenses for repairs and alterations were £2348.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6444 births and 4419 deaths were registered during the week ending March 9th. The annual rate of mortality in these towns, which had been 19·5, 21·2, and 21·5 per 1000 in the three preceding weeks, declined again to 19·5 last week. In London the death-rate was 19·3 per 1000, while it averaged 19·7 in the 32 large provincial towns. The lowest death-rates in these towns were 8·9 in Croydon, 11·6 in West Ham, 13·3 in Wolverhampton, and 13·5 in Blackburn; the highest rates were 23·6 in Manchester, 26·3 in Liverpool, 29·7 in Sunderland, and 34·2 in Plymouth. The 4419 deaths in these towns included 376 which were referred to the principal zymotic diseases, against 347, 387, and 395 in the three preceding weeks; of these 118 resulted from measles, 91 from whooping-cough, 74 from diphtheria, 39 from diarrhœal diseases, 32 from scarlet fever, and 22 from "fever" (principally enteric). No death from any of these diseases occurred last week in Brighton, Norwich, Derby, Birkenhead, or Huddersfield; the highest zymotic death-rates were recorded in Liverpool, Salford, Hull, Sunderland, and Gateshead. The greatest mortality from measles occurred in Liverpool, Leeds, Hull, Sunderland, and Gateshead; from scarlet fever in Burnley; from whooping-cough in Bristol, Wolverhampton, Hull, and Sunderland; and from diarrhœal diseases in Plymouth. The mortality from "fever" showed no marked excess in any of the 33 towns. The 74 deaths from diphtheria included 25 in London, eight in Sheffield, seven in Liverpool, six in Leeds, and five in Leicester. No fatal case of small-pox was registered last week either in London or in any of the 32 large provincial towns, and only one small-pox patient remained under treatment in the Metropolitan Asylums hospitals on Saturday, March 9th. The number of scarlet fever patients in

these hospitals and in the London Fever Hospital at the end of the week was 1746, against numbers decreasing from 2535 to 1823 on the ten preceding Saturdays; 140 new cases were admitted during the week, against 142, 162, and 185 in the three preceding weeks. Influenza was certified as the primary cause of 39 deaths in London last week, as compared with 16, 32, and 35 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 420, 493, and 501 in the three preceding weeks, declined again last week to 463, and were 97 below the corrected average. The causes of 51, or 1·2 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Salford, Newcastle, and in 12 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Sheffield, and Sunderland.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 22·6, 23·7, and 24 5 per 1000 in the three preceding weeks, declined again to 23·4 during the week ending March 9th, but showed an excess of 3·9 per 1000 over the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 15·1 in Perth and 18 4 in Aberdeen to 25·3 in Glasgow and 25·5 in Paisley. The 733 deaths in these towns included 51 which were referred to whooping-cough, 20 to small-pox, 15 to measles, 15 to diarrhœa, six to "fever," four to scarlet fever, and two to diphtheria. In all, 113 deaths resulted from these principal zymotic diseases, against 99 and 122 in the two preceding weeks. These 113 deaths were equal to an annual rate of 3·6 per 1000, which was 1·9 per 1000 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 33, 36, and 67 in the three preceding weeks, declined again last week to 51, of which 30 occurred in Glasgow, 10 in Edinburgh, six in Dundee, and three in Paisley. The deaths from small-pox, which had been 20, 15, and 12 in the three preceding weeks, rose again to 20 last week, and were all registered in Glasgow. The fatal cases of measles, which had been 25, 19, and 13 in the three preceding weeks, rose again last week to 15, of which nine occurred in Edinburgh, three in Leith, and two in Aberdeen. The deaths from diarrhœa, which had been eight, 16, and 23 in the three preceding weeks, declined again to 15 last week, and included six in Dundee and five in Glasgow. The fatal cases of "fever," which had been six and one in the two preceding weeks, rose again last week to six, of which three were recorded in Edinburgh and two in Paisley. The four deaths from scarlet fever corresponded with the number in the preceding week, and all occurred in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 153, 177, and 184 in the three preceding weeks, declined again last week to 161, and were 98 below the number in the corresponding period of last year. The causes of 27, or nearly 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 33·7 and 46·6 per 1000 in the two preceding weeks, declined again to 39·6 during the week ending March 9th. During the past four weeks the death-rate in the city has averaged 38·6 per 1000, the rates during the same period being 20·1 in London and 22 0 in Edinburgh. The 263 deaths belonging to Dublin registered during the week under notice were 46 below the number in the preceding week and included 12 which were referred to the principal zymotic diseases, against 10, 11, and 12 in the three preceding weeks; of these, 10 resulted from whooping-cough, one from "fever," and one from diarrhœa. These 12 deaths were equal to an annual rate of 1·8 per 1000, the zymotic death-rate during the same period being 1·4 in London and 4·0 in Edinburgh. The deaths from whooping-cough, which had been three, three, and five in the three preceding weeks, further increased last week to 10. The 263 deaths in Dublin last week included 33 of children under one year of age, and 101 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons showed a decline from the numbers recorded in the preceding week. Nine inquest cases and five deaths from violence were registered; and 91, or more than a third, of the deaths occurred in public institutions. The causes of 11, or more than 4 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING FEBRUARY, 1901.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in each of the 29 cities and boroughs in the county of London. With regard to the notified cases of infectious disease it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 5·7 per 1000 of the population, estimated at 4,651,113 persons in the middle of this year. In the three preceding months the rates had been 10·0, 8·0, and 6·2 per 1000 respectively. The rates were considerably below the average in Paddington, Kensington, City of Westminster, City of London, Shoreditch, Lambeth, and Battersea; while they showed the largest excess in Fulham, Poplar, Bermondsey, Deptford, Greenwich, and Lewisham. Two cases of small-pox were notified last month, of which one occurred in St. Pancras and one in Wandsworth; one case was admitted into the Metropolitan Asylums hospitals during the month, and remained under treatment on Saturday, March 2nd. Scarlet fever showed a considerably diminished prevalence last month as compared with the five preceding months; among the various metropolitan boroughs this disease was proportionately most prevalent in Fulham, Chelsea, Holborn, Deptford, Greenwich, and Lewisham The Metropolitan Asylums hospitals contained 1791 scarlet fever patients at the end of February, against 2659, 2460, and 1979 at the end of the three preceding months; the weekly admissions averaged 156, against 259, 214, and 164 in the three preceding months. The prevalence of diphtheria showed no appreciable variation from that recorded in the preceding month; the greatest proportional prevalence of this disease occurred in Fulham, Hampstead, Stoke Newington, Poplar, Bermondsey, and Deptford. There were 1111 diphtheria patients under treatment in the Metropolitan Asylums hospitals at the end of last month, against 1524, 1343, and 1113 at the end of the three preceding months; the weekly admissions averaged 136, against 185, 127, and 129 in the three preceding months. The prevalence of enteric fever last month showed a further decline from that recorded in the three preceding months; among the various metropolitan boroughs this disease was proportionally most prevalent in Islington, Bermondsey, Stepney, Greenwich Woolwich, and in the City of London. The number of enteric fever patients in the Metropolitan Asylums hospitals, which had been 436, 403, and 299 at the end of the three preceding months, had further fallen to 224 at the end of February; the weekly admissions averaged 25, against 61, 51, and 32 in the three preceding months. Erysipelas was proportionally most prevalent in St. Marylebone, Stoke Newington, Bethnal Green, Stepney, Poplar, and Greenwich boroughs. The 24 cases of puerperal fever included five in Islington, two in Hackney, two in Stepney, two in Lambeth, and two in Battersea.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various metropolitan boroughs, the deaths occurring in the public institutions of London having been distributed among the various boroughs in which the patients had previously resided. During the four weeks ending March 2nd, the deaths of 6905 persons belonging to London were registered, equal to an annual rate of 19·4 per 1000, against 16·8, 16·2, and 17·5 per 1000 in the three preceding months. The lowest death-rates last month in the various metropolitan boroughs were 12·2 in Hampstead, 13·0 in Wandsworth, 15·2 in Lewisham, 15 6 in Hackney, 16·1 in Stoke Newington, and 16·4 in Fulham; the highest rates were 23·4 in Bethnal Green, 23·8 in Poplar, 25·8 in Holborn, 26·4 in Southwark, 26 6 in Shoreditch, and 27·4 in the City of London. During the four weeks of February 547 deaths were referred to the principal zymotic diseases; of these, 126 resulted from measles, 18 from scarlet fever, 95 from diphtheria, 216 from whooping-cough, one from typhus, 33 from enteric fever, one from simple continued fever, and 57 from diarrhœa. The lowest death-rates last month from these diseases occurred in St. Marylebone, Islington, Stoke Newington, Holborn, Finsbury, Shoreditch, and Wandsworth; and the highest rates in Hammersmith, Southwark, Bermondsey,

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING FEBRUARY, 1901.

(*Specially compiled for* THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1901.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	**4,651,113**	**2**	**748**	**723**	**1**	**213**	**1**	**24**	**309**	**—**	**2021**	**5·7**	**—**	**126**	**18**	**95**	**216**	**1**	**33**	**1**	**57**	**547**	**1·5**	**6905**	**19·4**	**126**
West Districts.																										
Paddington	148,148	—	27	11	—	5	—	—	8	—	51	4·5	—	—	1	3	6	—	3	—	4	17	1·5	214	20·8	148
Kensington	177,205	—	17	16	—	6	—	1	12	—	52	3·8	—	—	1	3	12	—	—	—	2	18	1·3	236	17·3	125
Hammersmith	111,213	—	21	20	—	4	—	1	10	—	56	6·6	—	—	1	4	13	—	1	—	1	20	2·3	163	19·1	141
Fulham	141,920	—	33	41	—	4	—	—	8	—	86	7·9	—	3	—	4	7	—	1	1	1	17	1·6	179	16·4	150
Chelsea	73,843	—	20	8	—	1	—	1	5	—	35	6·2	—	—	—	—	5	—	—	—	1	6	1·1	123	21·7	134
City of Westminster	189,375	—	14	10	—	4	—	1	3	—	32	2·2	—	2	1	1	10	—	1	—	1	16	1·1	291	20·0	112
North Districts.																										
St. Marylebone	140,460	—	25	22	—	3	—	—	17	—	67	6·2	—	—	2	2	5	—	2	—	—	11	1·0	212	19·7	91
Hampstead	82,605	—	15	19	—	2	—	—	6	—	42	6·6	—	—	—	4	5	—	2	—	—	11	1·7	77	12·2	88
St. Pancras	248,098	1	32	52	—	12	—	1	20	—	118	6·3	—	4	—	8	12	—	2	—	2	28	1·5	377	20·0	152
Islington	353,528	—	56	31	—	22	—	5	20	—	134	4·9	—	1	—	4	17	—	2	—	2	26	1·0	450	16·6	137
Stoke Newington	55,758	—	4	17	—	—	—	—	5	—	26	6·1	—	2	—	1	—	—	—	—	—	3	0·7	69	16·1	82
Hackney	228,417	—	32	40	—	6	—	2	18	—	98	5·6	—	12	—	2	7	—	—	—	5	26	1·5	273	15·6	100
Central Districts.																										
Holborn	59,700	—	14	4	—	3	—	1	5	—	27	5·9	—	1	—	—	—	—	2	—	—	3	0·7	118	25·8	89
Finsbury	106,590	—	18	14	—	5	—	1	5	—	43	5·3	—	1	—	2	4	—	—	—	—	7	0·9	167	20·4	95
City of London	25,289	—	1	4	—	2	—	—	—	—	7	3·8	—	—	—	1	1	—	—	—	—	2	1·1	51	27·4	59
East Districts.																										
Shoreditch	120,614	—	10	18	—	3	—	—	7	—	38	4·1	—	—	—	1	8	—	—	—	—	9	1·0	246	26·6	196
Bethnal Green	127,509	—	17	27	—	5	—	—	15	—	64	6·5	—	6	—	7	3	—	—	—	1	17	1·7	229	23·4	105
Stepney	305,058	—	37	45	—	24	—	2	28	—	136	5·8	—	3	2	4	7	—	4	—	8	28	1·2	516	22·0	120
Poplar	170,465	—	20	39	—	7	—	—	21	—	87	6·7	—	—	—	6	6	—	2	—	5	19	1·5	311	23·8	166
South Districts.																										
Southwark	208,869	—	48	35	—	9	—	1	12	—	105	6·6	—	24	2	6	14	—	2	—	3	51	3·2	423	26·4	160
Bermondsey	136,824	—	29	33	—	18	—	—	9	—	89	8·5	—	4	1	3	10	—	—	—	2	20	1·9	201	19·2	129
Lambeth	318,530	—	41	40	—	16	—	2	11	—	110	4·5	—	7	1	3	16	—	4	—	4	35	1·4	477	19·5	132
Battersea	180,017	—	27	14	—	4	—	2	7	—	54	3·9	—	1	1	—	12	—	—	—	3	17	1·2	245	17·7	125
Wandsworth	242,224	1	33	24	—	13	1	1	20	—	93	5·0	—	4	—	2	10	—	—	—	2	18	1·0	241	13·0	85
Camberwell	269,102	—	54	55	—	10	—	—	6	—	125	6·1	—	30	1	7	9	—	1	—	2	50	2·4	393	19·0	96
Deptford	113,562	—	32	39	1	2	—	—	8	—	82	9·4	—	10	1	8	7	1	—	—	3	30	3·4	193	22·2	167
Greenwich	91,228	—	23	13	—	7	—	—	10	—	53	7·6	—	4	—	2	6	—	1	—	—	13	1·9	138	19·7	90
Lewisham	112,856	—	35	14	—	4	—	1	5	—	59	6·8	—	5	2	1	1	—	1	—	5	15	1·7	132	15·2	134
Woolwich	114,106	—	13	18	—	10	—	1	8	—	50	5·7	—	2	1	6	3	—	2	—	—	14	1·6	160	18·3	111
Port of London	—	—	—	—	—	2	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 14 cases of membranous croup.

† Including deaths from membranous croup.

Camberwell, Deptford, and Greenwich. The 126 deaths from measles showed a decline of 62 from the corrected average number; this disease was proportionally most fatal in Hackney, Bethnal Green, Southwark, Camberwell, Deptford, Greenwich, and Lewisham. The 18 fatal cases of scarlet fever were less than one-third of the average number in the corresponding periods of the 10 preceding years; among the various metropolitan boroughs the greatest proportional mortality from this disease occurred in Hammersmith, St. Marylebone, Southwark, Deptford, Lewisham, and Woolwich. The 95 deaths from diphtheria showed a decline of 78 from the corrected average; this disease was proportionally most fatal in Hammersmith, Hampstead, Bethnal Green, Poplar, Deptford, and Woolwich. The 216 deaths from whooping-cough were slightly below the average in the corresponding periods of the 10 preceding years; among the various metropolitan boroughs this disease showed the greatest proportional mortality in Kensington, Hammersmith, Chelsea, Shoreditch, Bermondsey, and Battersea. The 35 deaths from "fever" almost corresponded with the corrected average number; the highest "fever" death-rates occurred in Paddington, St. Marylebone, Hampstead, Holborn, Stepney, and Woolwich. The 57 fatal cases of diarrhœa were slightly in excess of the average number in the corresponding periods of the 10 preceding years; among the various metropolitan boroughs this disease was proportionally most fatal in Paddington, Hackney, Stepney, Poplar, Deptford, and Lewisham. In conclusion, it may be stated that the aggregate mortality from these principal zymotic diseases in London during February was nearly 27 per cent. below the average.

Infant mortality in London last month, measured by the proportion of deaths of children under one year of age to registered births, was equal to 126 per 1000. The lowest rates of infant mortality were recorded in Hampstead, Stoke Newington, Holborn, City of London, Wandsworth, and Greenwich; and the highest rates in Fulham, St. Pancras Shoreditch, Poplar, Southwark, and Deptford boroughs

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are announced:—Staff Surgeons: A. G. Wildey to the *Revenge;* J. H. Acheson to the *Pallas;* O. W. Andrews to the *Colossus;* R. W. Anderson to the *Medusa;* W. H. Norman to the *Caledonia;* and E. R. D. Fasken to the *President*. Surgeons: J. S. Dudding to the *Boscawen*, for the *Seaflower;* W. Bastian to the *St. Vincent*, for the *Martin;* R. W. B. Hall to the *Impregnable*, for the *Nautilus;* G. Ross to the *Boscawen*, for the *Dolphin;* H. C. Adams to the *Impregnable*, for the *Pilot;* and R. R. Horley to the *Lion*, for the *Liberty*.

Staff Surgeons J. Acheson, H. S. R. Sparrow, A. Kidd, and J. Beattie have been promoted to the rank of Fleet Surgeons.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant-Colonel Henry Walter Kiallmark, having attained the prescribed limit of age, is removed from the Army Medical Reserve of Officers.

VOLUNTEER CORPS.

Artillery: 1st City of London (Eastern Division, Royal Garrison Artillery): Surgeon-Captain H. Stedman, from the 1st Volunteer Battalion the Northamptonshire Regiment, to be Surgeon-Captain. 1st City of London (Eastern Division, Royal Garrison Artillery): Surgeon-Major F. G. Bennett, whose retirement appeared in the *London Gazette* of Oct. 18th, 1889, is permitted to retain his rank and to wear the uniform of the corps on retirement. *Rifle:* 2nd Volunteer Battalion the East Surrey Regiment: Surgeon-Lieutenant J. E. Bates to be Surgeon-Captain. 1st Herefordshire: Surgeon-Lieutenant John Jamieson Wallace resigns his commission and is appointed Second Lieutenant. 2nd Volunteer Battalion the Essex Regiment: Surgeon-Captain J. W. Cook resigns his commission. 3rd Lanarkshire: Brigade-Surgeon-Lieutenant-Colonel J. Dunlop retires, with permission to retain his rank and to wear the uniform of the corps on retirement. 1st Wiltshire: Surgeon-Lieutenant H. L. E. Wilks to be Surgeon-Captain 1st Cadet Battalion the Manchester Regiment: Acting Surgeon Israel James Edward Renshaw to be Surgeon-Captain. 2nd Volunteer Battalion the Prince of Wales's (North Staffordshire Regiment): Frederick Nesfield Cookson to be Surgeon-Lieutenant.

VOLUNTEER MEDICAL STAFF CORPS.

The Glasgow Companies: Surgeon-Captain J. B. M. Anderson resigns his commission.

SOUTH AFRICAN NOTES.

Lieutenant Taylor, R.A.M.C., has slightly improved (Howick, March 9th). Civil Surgeon Bruce is progressing favourably and is out of danger (Newcastle, March 8th). Civil Surgeon O'Reilly is reported out of danger at Kimberley.

Lieutenant-Colonel J. D. Day, R.A.M.C., Lieutenant J. J. W. Prescott, R.A.M.C., and Civil Surgeon H. S. H. Callum have been discharged from hospital to duty.

DEATHS IN THE SERVICES.

Surgeon-Major Daniel Paterson Barry, M.D. St. And., A.M.D. (retired), at Tunbridge Wells, on March 3rd, aged 75 years. He entered the army in 1846, became Surgeon in 1854, Surgeon-Major in 1866, and retired in 1867. He served with the 1st Battalion. 60th Rifles in the Punjab campaign of 1848-49, and was present at the siege of Mooltan, and at the battle of Goojerat (medal with two clasps). In the Crimea he was at the battle of Tchernaya and the siege and fall of Sebastopol (medal with clasp and Turkish medal). With the 97th Regiment he served during the Indian Mutiny campaign of 1857–58, and was present at the siege and capture of Lucknow (medal with clasp).

Surgeon-General Albert Augustus Gore, C.B., Army Medical Staff (retired) on March 11th, at his residence, Dodington-lodge, Whitchurch, Shropshire, aged 61 years. He joined the Army Medical Staff as assistant surgeon in 1860, and served with the 16th Lancers. In West Africa he was at the bombardment and destruction of the Timmance town of Massougba on the Sierra Leone river on Dec. 10th, the attack on Madoukia on Dec. 27th, and the storm and capture of the stockaded fetish town of Rohea on Dec. 28th, 1861 (mentioned in general orders for his services and for conspicuous bravery and specially recommended for promotion). In the Ashanti war of 1873 he acted as sanitary officer and was severely wounded in the action of Nov. 3rd near Dunquah, and was also wounded at Quarman on Nov. 17th (medal). It fell to the lot of the late Surgeon-General Gore, whilst Surgeon-General of Her Majesty's forces in India, to organise and make all the medical arrangements for the Chitral expedition and for the very large force from the North-Western frontier under the late Sir William Lockhart—the latter being a task which must have entailed a vast amount of work and responsibility. We were enabled to furnish our readers, it will be remembered, with full information at that time in regard to those arrangements and as to the sick and wounded, the hospitals, and many other interesting details. The late officer was a very hard-working, conscientious man with an unusual knowledge of military detail.

Deputy Surgeon-General Thomas Murray, I.M.S. (retired), at Upper Norwood on Feb. 15th. He joined the Bombay Army on March 7th, 1846, and retired July 31st, 1876, and served in the 10th Regiment, Bombay Light Infantry, from 1851 to 1876, and was present with it at the assault and capture of Kotah in March, 1858, by the force under the command of Major-General Roberts; during the operations of Brigadier Smith's Brigade in Central India, and present at the battle of Kotah-ke-Serai, June 17th, 1858; at the capture of Gwalior on June 18th, by the force under Sir Hugh Rose; at the siege and capture of Powree in August, 1858, by the field force under Brigadier-General Robert Napier, and acted as senior medical officer with the flying column under Lieutenant-Colonel Robertson in the subsequent pursuit and defeat of the rebels at the action of Beejapoor; with Brigadier Smith's brigade in Central India during the pursuit of the Gwalior rebels under Tantia Topee and Maun Sing; present at the action of Koondrye on Nov. 14th, 1858; also at capture of Magdala in 1868 by the force under the command of General Sir Robert Napier.

THE WAR IN SOUTH AFRICA.

The number of cases of plague at Cape Town is slowly but surely increasing, we are sorry to say. Since its first outbreak on Feb. 7th last there have been altogether about 100 cases with, it is stated, some 30 deaths. Parts of Cape Town are very much overcrowded and some

of the worst districts are very bad indeed, although a good deal has been done to cleanse and improve them. Considering that Cape Town is the nearest and most convenient port, the outbreak of plague there is, even apart from other serious considerations, likely to prove a source of much embarrassment under present circumstances. As regards the war there are persistent rumours, for which there seems this time to be official grounds, that General Botha is endeavouring to arrange terms for the surrender of his force, and there are signs in other directions that the foundations of the Boers' resistance are being roughly shaken. The time has come, as we have already said, when the Boers must fight to live instead of living to fight as they have hitherto done. The sweeping method of procedure now being systematically carried on by the British forces clears the country of its supplies of horses, vehicles, and supplies, while the huge captures of Boer convoys with cattle, horses, food, and munitions of war, must have told very seriously indeed on their resources. The collapse of the scheme of invasion of Cape Colony and the persistent pursuit of De Wet and his forces cannot fail to have a disheartening effect on the Boers. There does not seem much room for doubting that altogether the news from South Africa is more favourable.

The progress of active military operations has been greatly interfered with by the bad weather and heavy rains which have been prevalent of late. The casualty returns still give sad lists of sickness and losses (mostly from enteric fever) in addition to those shorter lists attributable to wounds and injuries.

MENTIONED IN DESPATCHES.

The following paragraph appears in a despatch which has been received by the Secretary of State for the Colonies from Colonel Sir J. Willcocks, dated Cape Coast Castle, Dec. 25th, 1900:—"The various departments of the field force have been well administered. The medical, under Dr McDowell, principal medical officer, in my opinion has been as near perfection as was possible in such a country. He was given an absolutely free hand and nothing that was asked for or wanted was ever refused. The supplies from England have been sent out so promptly and in such a generous spirit that it was the universal opinion that no force in the field could have been better treated."

The following officers are mentioned as having done very good work:—Dr. W. Murray, Gold Coast Medical Service; and Dr. D. Gray, British Central Africa Medical Service.

The following are excerpts from despatches which have been received from Vice-Admiral Sir Robert Harris, K.C.M.G., Commander-in-Chief on the Cape of Good Hope Station, reporting the proceedings of the Naval Brigades in South Africa:—

"Surgeon James G. Fowler has been most assiduous in his attendance and duties towards the sick."

"Staff Surgeon Lilly and Surgeon Lomas were indefatigable, and on the spot instantly to attend our wounded under an exceedingly hot shell fire."

"Fleet Surgeon James Porter of H.M.S. *Doris*" (also specially mentioned for excellence of medical arrangements), "for the efficiency of the arrangements for attending the wounded with the limited staff at his command."

Major William Grant Macpherson, R.A.M.C., and Lieutenant-Colonel George Sterling Ryerson, M.D., are among the recently made Knights of Grace of the Order of the Hospital of St. John of Jerusalem in England.

A SANATORIUM FOR WALTHAMSTOW.—A new sanatorium, erected by the Walthamstow Urban District Council at a cost of £30,000, was formally opened at Chingford on Saturday last by the chairman of the Sanitary Committee of the Council. The buildings, which are beautifully situated on the borders of Epping Forest, occupy a site of about five acres and consist of an administrative block and three pavilions. Each of the latter provides accommodation for 14 beds, together with nurses' rooms, bathrooms, lavatories, and discharging rooms. There is also a smaller pavilion for doubtful cases. Mr. J. J. Clarke, medical officer of health to the Council, made a short statement as to the future administration and work of the sanatorium and said that the staff would consist of a resident medical superintendent, matron, assistant matron, three charge nurses, and four probationers.

Correspondence.

"Audi alteram partem."

THE DUTIES OF HOUSE SURGEONS AT THE EAST SUFFOLK AND IPSWICH HOSPITAL.

To the Editors of THE LANCET.

SIRS,—My colleague, Mr. C. C. Worts, and I yesterday received six weeks' notice of the termination of our engagements as house surgeons here under circumstances which seem to us gravely to affect the honour of the profession. It concerns the relations of house surgeons to the press. It has been for some years here the custom for the inclosed form to be filled in and handed in the evening to reporters.

[INCLOSURE.]

EAST SUFFOLK AND IPSWICH HOSPITAL.

ACCIDENT ADMITTED.

Date .....
Name .....
Address .....
Occupation, etc. .....
Place and time of injury .....
.....
.....
Nature of Accident .....
.....
.....
.....

Signed

.....

House Surgeon.

When we came into office some weeks ago we refused to follow out that custom on the ground that it lay with the patient only or his nearest relatives to decide what information, if any, was to become public property. A house surgeon is not in a position to know whether any information would or would not be prejudicial to a patient. Even the knowledge that a man has had a broken leg might hinder him again getting employment in certain positions. It is our duty to give the patient's family information about him, and to them we referred the reporters. We take our stand on the principle that it is unprofessional conduct to give the press information, as a general rule at all events, and we also regard it as highly inexpedient in these days of Employers' Liability Acts and insurance to give such information. Some time ago Mr. Elkington, the editor of the *East Anglian Daily Times*, called on my colleague and demanded that we see his reporters, saying "A daily paper must be run." Mr. Worts said he would not stand in the way of his getting any information as he best could legitimately, but that we would give none ourselves. The editor is a member of the weekly board of this hospital. On Feb. 20th we were called up to the weekly board and the following resolution was read to us:—

That the house surgeons be instructed to give such information to the press with reference to accident cases as may be reasonable and sufficient in accordance with precedent.

Moved by Mr. Fosdeck, seconded by Dr. Casley. We refused to obey the resolution or to resign and were then told that a letter of dismissal would be sent to us.

Now, by their own rules (which I inclose), Nos. 22 and 77, the weekly board, not being specially summoned, were exceeding their powers both in making a new rule and in dismissing us. However, next week, on Feb. 27th, a specially summoned meeting of the board of management was held to discuss our dismissal, and if deemed advisable to dismiss us. We were not summoned. The meeting was adjourned for a week. Meanwhile, on March 4th, the medical staff met together, Dr. Casley alone being absent, and they unanimously resolved that our attitude was ethically correct. They also suggested that we be asked to give information to the press after asking the patient's permission. On March 6th the resolutions of the staff were read to the board, but were ignored as irrelevant. The resolution dismissing us was passed by a majority of ten; only four voted against

it—viz., Dr. W. A. Elliston (President of the British Medical Association), Dr. T. Warner, Dr. W. W. Sinclair, and Mr. Felix Cobbold (president of the hospital). Dr. Casley voted for the resolution. Mr. Branford Edwards, Dr. R. W. Brogden, Dr. H. H. Brown, and Dr. F. Ward were present but did not vote. Later we were served by the secretary with six weeks' notice, no reason being given for our dismissal.

Now, even if our view of the ethics of the question be regarded as unduly strict—though I do not for one instant assent to that—still it would have been easy for the board to have arranged for information to have been given to the press by the secretary or some other official. To dismiss us is as unnecessary, even from their point of view, as it is unjust from any point of view. I am confident that I am fully justified in placing the matter before the profession and in asking for the support of THE LANCET.

I am, Sirs, yours faithfully,

RICHARD KAY, M.B. Lond.,
Senior House Surgeon.

March 7th, 1901.

*** Dr. Kay and Mr. Worts have acted throughout in accord with medical ethics. We trust that the board will reconsider their action and will suppress all personal feelings in dealing with the matter. The question is not only what is fair to the house surgeons or due to the press. The interests of the patients must be put first. We deal with the matter in a leading article.—ED. L.

"THE STATISTICS OF GASTRIC ULCER, WITH SPECIAL REFERENCE TO GASTRIC HÆMORRHAGE, ITS FREQUENCY AND FATALITY."

To the Editors of THE LANCET.

SIRS,—In my address on Gastrorrhagia before the Medico-Chirurgical Society of Edinburgh, in attempting to elucidate the difficult question of treatment I thought it desirable to make use of the statistics collected by well-known authorities: (1) on the frequency of gastric ulcer; (2) on its fatality; (3) on the frequency of gastrorrhagia; and (4) on its fatality. From these statistics I hoped to show the importance of the subject and to deduce conclusions that would help to make the subsequent discussion useful.

Dr. Byrom Bramwell, in a clinical lecture published in THE LANCET of March 9th, p. 687, states that these conclusions are not in accordance with his own experience, and he objects to the method of taking the mean of the figures given by the various authorities whose statistics are made use of, and also to some of the statistics which were published about 40 years ago and which, I would mention, have become classical and are accepted by all authorities on the subject to-day. I fully agree with Dr. Bramwell as to the difficulty of basing arguments on a statistical foundation, for objections can generally be raised against all statistics; but it seemed to me that the questions I was considering were such as could only be settled on statistical evidence, and by using only those statistics approved of by everyone who has written on the subject, and in taking the mean of the figures, I thought I was adopting a basis for my arguments almost above criticism.

It will be more convenient to take each set of statistics separately.

1. *As to the frequency of gastric ulcer.*—The usual estimate accepted by all authorities is that 5 per cent. of the whole population suffer at some period of their lives from simple ulcer of the stomach. In 32,052 necropsies collated and analysed by Welch, ulcers or scars caused by them were found in 4·7 per cent., but Dr. Bramwell raises objections to the post-mortem method of estimation—(1) because all open ulcers are not found; (2) because cicatrices of former ulcers are often missed; (3) because superficial ulcers probably do not leave a cicatrix when they have healed; and (4) because some of the scars found may be due to other causes than ulcer, such as syphilis, tubercle, &c.; but as Dr. Bramwell does not press the last objection we will omit it from the argument, for it is well known that other causes (than ulceration) of cicatrices in the stomach are very rare indeed.

I heartily concur in these three objections, but surely they only make the position all the stronger, and one naturally asks the question—If 5 per cent. of ulcers or cicatrices are positively found in all necropsies, how many more must escape observation, and how much does 5 per cent. underestimate the frequency of gastric ulcer?

Dr. Bramwell next objects to the statistics of British hospitals, so far as gastric ulcer is concerned, being compared with certain German hospitals where exact observations have been made and noted in the post mortem rooms for many years. Of course, it does not follow that the same percentage of cases occurs in British hospitals, but it remains to be proved by an equal number of careful observations that this is not the case before Dr. Bramwell's opinion on the subject can have the same weight as that of those great authorities whose estimates have hitherto been accepted by all who have written on the subject. The frequency of gastric ulcer in the community outside hospitals must always be a difficult matter to settle, as its estimation depends so much less on exact post-mortem evidence and so much more on clinical observation, to which Dr. Bramwell justly raises objection; but, if I may judge by my own experience, I have had a far greater number of *private* than of *hospital* patients sent to me for an opinion with regard to the surgical treatment of gastric ulcer. This, however, is no more a proof of the greater prevalence of gastric ulcer in the well-to-do than is Dr. Bramwell's opinion as to gastric ulcer being less frequently found in this class of patient, his opinion, so far as I can gather, being based chiefly on clinical evidence to which he has so much objected. Autopsies or biopsies afford us the only absolute proof of ulcer of the stomach, and without such proof there must always be uncertainty. I can see no need, therefore, to alter the numbers which, for making the importance of the subject more tangible, I applied to the population of a city like Leeds, which, for convenience' sake, I took at 500,000, though Leeds itself has actually only a population of between 400,000 and 500,000.

2. *The total mortality from gastric ulcer.*—I was very much astonished to find Dr. Bramwell making use of the Registrar-General's returns for the purpose of disproving the statistics I quoted, and I should like to ask if Dr. Bramwell really seriously argues that the Registrar-General's return of deaths from gastric ulcer can be pitted against the statistics of such able physicians and keen observers as Brinton, Welch, Dreschfeld, Habershon, Müller, Lebert, Tricomi, and others? How about the classification of subphrenic abscess, acute peritonitis, localised abdominal abscess, intervisceral fistulæ, gastric dilatation, general atrophy, marasmus, anæmia, and phthisis (of stomach origin) and ulcus carcinomatosus, to say nothing of many other diseases ending in death which should have recorded as their first cause ulcer of stomach? I see that Dr. Spottiswoode Cameron has even pointed out to Dr. Bramwell one or two of these sources of fallacy. I do not think, therefore, that if, as Dr. Bramwell says, 17 deaths were reported as due directly to gastric ulcer and six to hæmatemesis in Leeds last year, it will be far from the mark to say that three or four times as many would be likely to die directly or indirectly from the complications due to the same disease.

The difference in the views of various authorities who give the rate of mortality in all cases of ulcer as varying from 10 to 50 per cent. is really a question of the inclusion or not of the cases dying indirectly from ulcer, for if they are included—and to my mind they should be—the mortality is much greater than the profession at large really grasps and than Dr. Bramwell acknowledges. The subject rather reminds me of arguments that were used a few years ago when it was not unusual to hear it said that deaths never occurred from appendicitis, but I never hear that argument used now; and, with regard to ulcer, it only requires time to prove that the figures I have employed will not be far from the truth.

3 & 4. *On the frequency of gastrorrhagia and its fatality.*—Dr. Bramwell should really be careful before he accuses anyone of making a serious error, especially when he pits his individual experience and opinion against the experience of the authorities quoted from and whose statistics I will again repeat: "Müller, 11 per cent.; Welch, 3 to 5 per cent.; Brinton, 5 per cent.; Debove, 5 per cent.; Steiner, 6·36 per per cent.; Lebert, 3 per cent.; Dreschfeld, 3½ per cent.; and Rodman, 8 per cent."; these numbers representing percentages of fatal hæmatemesis in bleeding ulcers. As different authors estimate the percentage of hæmatemesis in all cases of gastric ulcer somewhat differently it is difficult to classify them on the same lines. I have therefore adopted purposely a low estimate in saying that 50 per cent. of all cases of ulcer of the stomach suffer from gastrorrhagia and

have made a low estimate of the mortality in saying that 7 per cent. of deaths in cases of gastrorrhagia from ulcer will not be far from the truth.

In order to make my position clear I said in my address: "If this is worked out in the 500,000 population of a city *like* Leeds [Leeds, as I said before, does not reach 500,000; this is a mere quibble on the part of my friend] it means that of the 25,000 persons who have or have had ulcer, 12,500 suffer from hæmatemesis and of these 7 per cent., or 875, die." If this be further worked out, even on Dr. Bramwell's lines of excluding children under the age of five years, it will mean that 22 persons die annually from gastrorrhagia in a city of 500,000 inhabitants, and in spite of Dr. Bramwell's criticisms and quotations from the Registrar-General's reports, I believe that this is, if anything, an under-estimate of this serious accident. To show that my views are supported by a physician whom I feel sure that Dr. Bramwell will acknowledge is an authority on the subject, I will quote from Dr. Fenwick's work on "Ulcer of the Stomach" published in 1900, p. 50:—"Hæmorrhage from the stomach is a frequent cause of death in gastric ulcer. Out of 112 fatal cases recorded at the London Hospital, 18, or 16 per cent., died from hæmatemesis, while in another series of 298 necropsies on gastric ulcer we find that fatal hæmorrhage occurred in 56 cases, or in 18·8 per cent."

Dr. Bramwell, in speaking after I had given my address, remarked that "he had never, so far as he remembered at present, seen a fatal case of hæmorrhage from a simple gastric ulcer," yet when he wrote his lecture a few days later he was able to call to mind two fatal cases. Perhaps if Dr. Bramwell could ascertain the after-history of some of the other cases he has seen in consultation he might possibly find an even greater mortality. Surely the difference in Edinburgh and in London cannot be so great as is shown in the passage I have quoted from Dr. Fenwick and the statements made in Dr. Bramwell's lecture.

I am sorry to trouble you with such a long letter, but out of justice to myself as well as from the interest I take in the subject, I have felt it necessary to try to show that the dangers of gastric ulcer and of its complication, gastrorrhagia, are both as frequent and as serious as I stated in my address, and the only apology I have to make is to those eminent authorities whose figures I have in some cases almost halved in order to state my views with moderation.

I am, Sirs, yours faithfully,

March 12th, 1901. A. W. MAYO ROBSON.

To the Editors of THE LANCET.

SIRS,—I find that there are two mistakes in the figures in my paper on the Statistics of Gastric Ulcer in THE LANCET of March 9th, p. 687, which perhaps you might kindly insert a note correcting.

On page 690. second column, 14 lines from the bottom, instead of 49·87, read 76·92; and on page 691, second column, 14 lines from the top, instead of 413,287 read 431,287. I am, Sirs, yours faithfully,

March 12th, 1901. BYROM BRAMWELL.

"THE CURATIVE TREATMENT OF MICROBIC DISEASE."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of August 4th, 1900, p. 350, you published a letter of mine on a method of treating microbic diseases. I am now in a position to state that since that date some 30 or 40 animals (sheep) suffering from a peculiar febrile disease known as "heart-water," from the effusion of liquid into the pericardial sac, have been cured by the method I advocated then and also as early as 1890.[1] There have been only three deaths, which is very gratifying, as the usual mortality varies from 50 to 60 per cent., or even more, from this disease. My curative method consists in, first, thoroughly bleeding the sick animal (about 15 ounces) and then injecting subcutaneously about eight cubic centimetres of defibrinated blood obtained from a recovered animal.

Now, there are at least three diseases which occur in the human subject—viz., pneumonia, bubonic plague, and typhus fever—in which I believe this method of bleeding, does good. It must be followed by the injection of the appropriate serum for the two first-mentioned diseases—viz., Yersin's serum for plague and Klemperer's serum for pneumonia, and recovered blood from a healthy subject (after typhus) for the last-mentioned disease. A serum obtained from the horse would be preferable, but as yet it is not obtainable. The blood of a fever patient, and in case of his death splenic emulsion (in salt solution), may be tried for inoculating a horse in order to obtain an antitoxic or antimicrobic serum for this disease (typhus fever) which is so fatal in certain parts of Ireland, Scotland, and the North of England. The amount of bleeding to be at all serviceable should not be less than 10 ounces (15 ounces would be about the usual quantity for an adult). The object of this free bleeding is, of course, to remove as much of the toxin (and germs?) as possible. A medical friend of mine who has had great experience of typhus fever at home tells me that he has noticed that in almost all cases of bleeding (e.g., epistaxis) the crisis has been hastened and the patients have made a good recovery.

I am, Sirs, yours faithfully,

GEO. CARRINGTON PURVIS, M.D. Edin.

Grahamstown, Cape Colony, Feb. 9th, 1901.

[1] THE LANCET, Dec. 20th, 1890, p. 1354.

OTORRHŒA AND SCHOOL BOARD CHILDREN.

To the Editors of THE LANCET.

SIRS,—The number of cases of otorrhœa and its consequences that come under our care in the out-patient department is very great and, according to my experience, now extending over 25 years, the numbers do not decrease. It seems a pity that something cannot be done to check this disease. Recognising that the School Board now gets hold of these children at an early age I wrote to the clerk of the Board suggesting that some scheme might be arranged by which the ears of the children might be examined when they first enter the schools and then perhaps once a term afterwards. I pointed out the dangers they ran and the offensive condition which many of them were in. The Board, however, refused to consider the subject and their medical officer, to whom I likewise wrote, replied that he could do nothing in the matter. I cannot help thinking that it is most important for the future well-being of these children that some check should be put to the ravages of otorrhœa and I am sure that if you and other medical journals will give your powerful aid an immense amount of good may be done. It seems to me that the School Board is the best authority through which to work, as practically all the children pass through their hands. No other authority could with so little trouble, expense, or "interference with the liberty of the subject" give so much assistance in checking this disease. The eyes of the children are now examined with great benefit. Why, then, should not the ears be done so too? They are certainly equally important.—I am, Sirs, yours faithfully,

W. R. H. STEWART, F.R.C.S. Edin., &c.,
Surgeon to the Ear and Throat Department, Great Northern Central Hospital; Consulting
March 12th, 1901. Surgeon, London Throat Hospital.

AUSTRALIAN WINES.

To the Editors of THE LANCET.

SIRS,—An analytical report was published in THE LANCET of Sept. 29th, 1900, p. 949, upon samples of Australian wines. The report appears to have been based upon the assumption, a postulate I believe very generally accepted, that wine cannot in natural fermentation produce more than about 24 degrees of alcoholic strength, and that any excess of that strength indicates *per se* the addition of spirit. Dealing with the subject in its broad sense, I hope to show that this theory applied to wines grown in Australia is fallacious. My personal knowledge of Australian wines extends over 30 years, during which many millions of gallons have passed under my observation; though my firm do not analyse the wines they grow or purchase they know them to be perfectly pure as nature produces them, although many growths exceed the strength of 24 degrees proof spirit.

So far back as the year 1874, in examination before the Royal Commission of the House of Commons, I was able to produce evidence, supplied by the South Australian Government, proving that three analysts in that colony had obtained from the same grapes, supplied by that Government, strengths up to 35 degrees, and that Sir Samuel Davenport had produced on the "Beaumont Vineyard" a wine showing 20·743 degrees alcohol by weight, equivalent to 44·522 degrees proof spirit. Upon such evidence the Royal Commission recommended that the standard for natural wines should be

raised from 26 to 30 degrees, at which it stands to-day. It has been usual to allow the grapes to remain longer on the vines in Australia than in European vineyards, and thus, becoming thoroughly ripe, they yield less *must* or juice, but more saccharine. So large is Australia, and its climate and soil are so varied, that every grade of wine, from the light Chablis with 21 degrees of proof spirit to Constantia of 44 degrees, can be produced; the aspect and altitude, and in no less a degree the particular kinds of the vine grown, bear a large share in the result. One well-known very free-bearing red grape yields, I believe, in some seasons as much as 800 gallons per acre. The wine from it is thin, poor, hungry stuff; it arrives at its maturity in three years and then often "goes to pieces." It has a strength of about 21 degrees of spirit, and some Australians flatter themselves it is claret, but clarets are obtained from different grapes altogether, and claret vines produce in Australia another style of wine. I have such before me now grown on a vineyard of my own in the warm district of Rutherglen. The grapes were allowed to remain on the vines till thoroughly ripe; the resulting wine has 28 degrees spirit, is somewhat sweet, and of most delicious flavour. That no spirit was added to it is beyond question; there was no still on the vineyard, and the rules of the Excise prohibit the transfer of spirit between vineyards.

In England, as elsewhere, tastes are constantly changing, and this may be affecting the claret trade now, for during the past year the imports from France have fallen off 594,570 gallons. It is evident, therefore, that however elegant the light wines from France may be the public taste at present favours wine with more substance. As Australia is able to produce these robust wines, which the public by the increasing yearly imports prove they are favouring, it is, I think, a pity that an impression should be conveyed to your readers that the generous quality which these Australian wines exhibit is the result of adventitious spirit; this, I fear, was the idea your article conveyed, based, as I have said, on exploded theories.

In France and Germany the grapes are gathered before they are dead ripe; were this not so it would be at the expense of bouquet, besides which the fermentation to complete attenuation might be frustrated, and the dry wine known as claret could not be obtained. In Australia it is natural to produce big wines; the fruit being allowed to come to maturity the aqueous particles become in a measure evaporated, and the result is such stout Burgundy as was thought impossible before Australian wines were known. As instance of the heat in the colonies and its effects on the vines, the leaves are allowed to remain on the branches so as to protect the bunches from the sun, whereas in France and Germany the leaves are thinned, and indeed the vine is sometimes trained on trellises capable of being moved at any angle, so as to obtain all the sun possible, as well as the heat radiated from the ground.

Australian wines should not be compared with those of France and Germany more than with those of Spain, Portugal, or Sicily. For, on the one hand, in the warmer climates more sugar is produced with more spirit and weight of wine; on the other, in the more temperate climates lighter wines, more elegant perhaps but colder, are the result. If, then, the English public continue the taste for light, thin, dry wines, I know no country that can supply them finer than France or Germany. But if the taste, as I am led to believe, is for the more generous product of fully ripe grapes, there is no country in the world can supply the want better than our own possessions.

It has been the endeavour of Australian wine-growers to put on the market that which Australia can best produce—viz., a natural robust wine filling the gap between the light wines of the continent and fortified wines. To quote the remark of a writer in the *Standard*: "Australian wines abound in memories of the sun that begot them and, like the wines of the ancients, will bear mixing with water."

I am, Sirs, yours faithfully,

Feb. 25th, 1901. P. B. BURGOYNE.

*** We refer to this letter in an annotation this week.—ED. L.

THE VALUE OF SALINE ENEMATA.

To the Editors of THE LANCET.

SIRS,—I have read with great interest the very sensible article in THE LANCET of March 9th, p. 720, on the Value of Saline Enemata in Collapse and in Uræmia and Puerperal Eclampsia. Allow me to call your attention to another class of cases in which I have found them very useful. I refer to cases of gastric ulcer in which (not necessarily due to large hæmorrhage) there may be subsequently extreme weakness and debility, sleeplessness, &c., if not actual collapse. This is due, no doubt, largely to abstinence from food by the mouth, rectal feeding being only a poor substitute for natural alimentation. In such cases saline injections at 100° F., in quantity (say half a pint) sufficiently small to be readily retained, have been frequently given to a case of gastric ulcer, now nearly recovered, in which the return of refreshing sleep (after much restlessness, nausea, &c.) at once took place after the first injection. A like result was noticed later and the injections were repeated.

I am, Sirs, yours faithfully.

Chepstow, March, 1901. J. CROPPER, M.B. Cantab.

HYPERTROPHY OF THE LINGUAL TONSIL.

To the Editors of THE LANCET.

SIRS,—In a deservedly favourable notice of Dr. Escat's "Maladies du Pharynx" in THE LANCET of March 9th, p. 711, the reviewer writes that, "like too many observers Dr. Escat looks upon hypertrophy of the lingual tonsil from the point of view that the condition is the disease, whereas it is a local manifestation of a more general disturbance." This is not quite the view held by Dr. Escat as I read him, but if there are "too many observers" of his way of thinking does it not suggest that there are but few who think differently?

I am, Sirs, yours faithfully,

March 12th, 1901. LENNOX BROWNE.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Inoculation for Rinderpest.—Great Increase of Plague.—The Admission of Natives to the Indian Medical Service.—The Water and Milk-supply of Indian Cities.

A REPORT has recently been issued by Dr. A. Lingard showing the results of inoculation against rinderpest during the past year. The process has been carried out at several places with marked success. The method of protection adopted is to inject a small dose of the protective serum on one side of the body and at the same time a small dose of virulent rinderpest blood on the opposite side. Reaction follows in 90 per cent. and this gives practically permanent immunity. In about 10 per cent. no apparent reaction occurs although it is found that the cattle possess some immunity which lasts for a few months. In these latter instances a subsequent re-inoculation with from 1 to 10 cubic centimetres of virulent blood about 10 days later produces the usual reaction and confers the required lasting immunity. It is found that the hill cattle react differently to those of the plains, the former requiring much more frequently the subsequent re-inoculation with virulent blood. The use of the protective serum alone causes no reaction, but yet affords a temporary immunity. This is sufficiently lasting to afford protection during an epidemic and it is therefore particularly applicable for milch cows when it is not desirable to interfere with the milk-supply, and it is also useful in the case of pregnant animals which under the disease itself, whether artificially or naturally acquired, are liable to miscarry. An instance of an outbreak in Madras is given where 339 bullocks were inoculated. The disease was at once checked, and it is almost certain that a heavy loss among the cattle was averted. During the year no less than 464,765 cubic centimetres of protective rinderpest serum were manufactured. A large stock ready for immediate despatch is kept at the laboratory, and in addition a further large stock only requiring a fortnight's time for being tested.

Close upon 6000 deaths from plague took place in India last week. The week before there were 4377 deaths, and in the corresponding week of 1900 only 2597 deaths. The great increase is chiefly in Bengal which returns 3846 deaths—a rise of 1200 over the preceding seven days. The worst districts are Patna (with 1634 deaths), Saran (828 deaths), Monghyr (526 deaths), and Gaya (475 deaths). Calcutta returns 233 deaths—nearly double that of the week

previously. Other districts in Bengal are becoming affected, cases having been reported from Hazaribagh, the Sonthal Parganas, Manbhum, Palaman, Mozaffarpore, Bhagulpur, 24-Parganas, Howrah, and Hooghly. The epidemic is also increasing again in the Bombay Presidency where a rise of 300 deaths is reported. The city of Bombay returns 923 deaths, an increase of 137 over the previous week. Other places in this province still infected are Belgaum (with 226 deaths), Dharwar (44 deaths), Thana (143 deaths), and Surat (24 deaths). The Mysore State returns 267 deaths, the Madras Presidency 124 deaths, and the Punjab 55 deaths. During the past week a fresh development has occurred on the Kolar Goldfields, and the threatening at Karachi reported last week shows that the disease has taken a hold of the city once more. The general mortality in Calcutta is again mounting up. There were 264 cases of plague reported with 233 deaths. It is to be noted that there are now no suspicious deaths reported. This system is more in conformity with the returns of other places and is doubtless required for political purposes. At the same time there continues to be, as there always has been, a certain number of deaths about which considerable doubt must exist, and the return of suspicious deaths is more satisfactory in a medical and scientific point of view. Since the above figures were published it is understood that the daily returns show a still further plague mortality, but the disease is chiefly confined for the present to the northern half of the city.

The general mortality in Bombay city is also mounting up and has now reached a rate of 128·26 per 1000 per annum. The total number of deaths during the past week was 2074—an increase of 133 over that of the previous week. The number of births remains about the same as during the corresponding period of last year, suggesting that the population continues about the same in amount. Other diseases formerly prevalent having decreased the rise of mortality must be more definitely attributed to plague.

Agitation is repeatedly being made to open the portals of the Indian Medical Service to native men qualified with Indian degrees. What the leaders of this movement want is a competitive examination for the Indian Medical Service to be held in Calcutta and open to holders of Indian degrees. In consequence of the shorthandedness of the service the Government have recently offered 20 temporary vacancies to men who hold British qualifications, but it is very doubtful whether any candidates will come forward on the terms offered. This offer is not at all what the memorialists want, and it is, in my opinion, absurd to compare an Indian degree and education with those obtained in the British islands. The feeling in the service is that there are too many natives in it already, so that any further concession in this direction would be undoubtedly unpopular.

Some startling figures recently published show that in almost all the larger cities of the North-west Provinces and Oudh, including Cawnpore, Allahabad, Benares, Meerut, and Agra, the annual death-rate has been heavier since the introduction of a filtered water-supply than in the years preceding its introduction. The mortality of other cities in India has increased rather than decreased under similar circumstances. It is obvious that unless a proper system of surface drainage exists with a regular water-supply the soil must become more or less saturated. Colonel G. M. J. Giles, I.M.S., is disposed to attribute some of the increase to the greater prevalence of malaria due to the formation near every water-tap of pools which he has found to be congenial breeding-places of anopheles. The observations of Captain L. Rogers, I.M.S., on the prevalence of malaria in villages adjoining the city of Calcutta may perhaps be explained in the same way.

The Government of India have recently published an interesting note on the milk of cows and Indian buffaloes. This is based on the work of Dr. Leathes, and states that the milk of the Indian cow corresponds very closely to that of the English one, but in the milk of the buffalo the proteids are in higher proportion and the lactose is in lower proportion than in cow's milk. Buffalo's milk usually contains much more fat also. The mineral matter is about the same. The supervision of the milk-supply of the large cities in India is very unsatisfactory. Some attempt at it has been made in Bombay city, but there is absolutely no control over the large quantity brought in from the surrounding districts and there is no systematic examination of milk to detect adulteration and disease germs. From the filthy habits of the natives and their carelessness in the use of foul water it is obvious that dirty milk of poor quality must be very largely consumed. The effect of this on the general health, especially of children, must be disastrous. The conditions which obtain in Bombay apply to other cities.

The improvements being made in Bombay city have evidently awakened the authorities in Calcutta to the necessity of its improvement also. Notwithstanding the very unsatisfactory state of the finances it is contemplated to raise a loan of Rs.3 547,000 in the course of the year. The estimated expenditure includes Rs 300,000 for new municipal offices and Rs.1,095,000 for the construction of a new market, of *dhobikhanas* (washing places) and of *gowkhanas*, and of five blocks of model houses for the poor.

Feb. 23rd.

THE

ORGANISATION OF THE PROFESSION.

(FROM OUR SPECIAL COMMISSIONER.)

(*Continued from p. 742.*)

Formation of Strong Medical Unions at Sunderland and South Shields. — Public-house Medical Clubs. — The Struggle with the Friendly Societies.—A Two Years' Canvass to Recruit Medical Practitioners.—Material Improvements Secured.—Unanimous Action of the South Shields Practitioners.—A Slow but Sure Policy.

THOUGH the action of the County of Durham Medical Union has, so far, been mainly devoted to the interests of the colliery surgeons the grievances of the town practitioners have not been overlooked. This union, it has been fully explained, is of but recent creation and it was materially impossible to take up every question at one and the same time. The creation, however, of local branches has facilitated the dealing with various interests, for what could not be discussed as fully as might be desirable by the central council was very ardently debated by the local branches concerned. Thus the difficulties besetting the town practitioners have been taken in hand, notably by the South Shields and Sunderland branches. They brought forward at the last general meeting of the County of Durham Medical Union, held on Feb. 5th, a resolution, which was endorsed by the council of the Union and embodied in their annual report, recommending that the subscriptions paid by members of friendly societies for medical aid should be raised to 4*s*. per annum. In certain parts of the county it has fallen as low as 2*s*. 6*d*. per head per annum, whereas the charge generally made is 1*d*. per week or 4*s*. 4*d*. per annum, and in some places 5*s*. per annum are paid. Then a very important resolution was passed at this same meeting to the effect that the County of Durham Medical Union should present a request to the General Medical Council asking that body to remove from the Medical Register any practitioner who countenances or encourages canvassing organised by a union or society of working men on his or her behalf. Sir George Philipson was asked to bring this matter before the General Medical Council. It was pointed out at the time that the increasing number of lady practitioners must be taken into consideration and that efforts should be made to bring them into line with the movement, so that they might take their full part in the work of organising the medical profession. It was further decided that no practitioner should henceforth accept the post of medical officer for any new club or friendly society for less than 4*s*. per head per annum.

The Sunderland branch of the County of Durham Medical Union was formally constituted on May 25th, 1899. Dr. J. Murphy of Sunderland was elected President and Dr. Hubbersty honorary secretary. Out of 52 local practitioners 44 were enrolled as members of this branch, and this may be considered a very good beginning. Unfortunately all these members did not show themselves as energetic as might be desired. There has been some falling off and this often happens. The excitement, the enthusiasm caused by a first effort, the very novelty of the undertaking, bring people together, but sometimes those who are most ready to promise support are the least fit to persist in a sustained effort. Nevertheless the branch has shown great activity. It has held from May, 1899, to March, 1901, no less than 21 meetings, with an average attendance of 16 members, not counting, of course, the general meeting and the council

meetings of the county union which assembled at Durham and where the representatives of the Sunderland branch were present. One of the first matters to be taken in hand was the question of what are called "family clubs." This means cases where a weekly payment is made either through the agency of a society or directly to a medical practitioner so as to secure medical aid in case of sickness for any members of the family. The rates of payment at Sunderland were very complex, varying according to the number of children; but, practically, they were much the same as that paid by the miners—namely, 6*d*. per fortnight for the entire family. The town practitioners felt that they should join with the colliery surgeons and insist on this being raised to 9*d*. This end was attained with comparative facility in those cases where the payments are made directly to the medical practitioners. This method of payment without any intermediary constitutes what are called "private clubs." In that case no negotiations are necessary. There is no organisation, no committee to negotiate with. The medical practitioners have simply to inform the persons who make weekly payments to them that such payments will no longer be accepted and that the contract must cease or be altered. But, of course, it is first necessary that all practitioners holding private clubs should act simultaneously and that the alterations proposed should be the same in all cases. To make it all the more evident that such an understanding had been effected by the Sunderland practitioners, the local branch of the County of Durham Medical Union printed and issued a similar private club card for all its members. Consequently, whatever practitioner the subscribers selected they obtained from him the same subscription card and the same terms. The movement, as far as the private clubs were concerned, was entirely successful, and this alone means a very considerable improvement in the position of a large number of the Sunderland practitioners.

There are, however, other difficulties which have not yet been settled. For instance, there is the question of "yearly boxes." These are often held in public-houses. A certain number of persons agree to pay a fixed sum every week and collect this amount at a public-house. Out of this sum they pay a medical practitioner 3*s*. per head per annum for medical attendance in case of sickness and divide the remainder among themselves at Christmas. Such organisations, by bringing men together in public-houses, indirectly encourage drinking, and the medical services given also tend to increase the custom of the public-houses. It is obvious that the dignity of the profession would be best served by the total abolition of the public-house yearly box. In this case to ask that the amount paid to the medical attendant should be increased does not suffice; this should be coupled with the establishment of some method of collecting the money that would not necessitate the calling at public-houses.

The Sunderland branch of the County of Durham Medical Union some time ago approached the friendly societies and urged that the payment should be increased from 3*s*. to 4*s*. a year and that there should be no juvenile lodges, or that when juveniles were enrolled they should pay the same sum as the adults. 27 lodges of friendly societies and seven branches of the boiler makers' trade union agreed to these terms, but this does not represent the majority of such organisations. The remaining lodges recently formed the Sunderland Amalgamated Friendly Societies' Association. They rented a house and imported a medical man, whom they have lodged in this house and employ as their servant. Efforts were made to prevent this intruder from accepting such a post, but they were not successful, so he has been professionally and socially ostracised. Even the medical practitioners who are not enrolled in the ranks of the union have joined in this boycott. No one will consult with him, and should a second opinion be necessary he will probably have to retire from the case. Hopes are entertained that in the course of time the imported medical practitioner will find his position so difficult that he will retire.

At South Shields the organisation of the members of the profession preceded the formation of the County of Durham Medical Union. The latter was, as already related, definitely constituted on Dec. 8th, 1898; the South Shields Medical Practitioners' Association was formally established on March 8th of the same year, but the work of organisation had been going on a long time previously. The mode of procedure differed somewhat from what has been done in most of the other centres. In this case it was determined to win over the approval of all the local practitioners before any formal steps were taken, and this was a task which was fraught with so many difficulties that it took some two years to accomplish it. About 25 years ago a similar attempt had been made which resulted in the importation of an outside practitioner by the friendly societies. At that time the medical practitioners were only paid 2*s*. 6*d*. per head per annum, and they demanded that this should be raised to 5*s*. Though reasonable in the abstract it was not very wise or politic to propose thus suddenly so large an increase. There seem to have been lack of tact and insufficiency of preparation and organisation. Nor was the opinion of the public and the profession as ripe some 25 years ago for such efforts as it is to-day. In any case the movement was a dead failure, and the imported medical practitioners caused the old-established practitioners to lose many of their patients. The memory of this failure was not easily effaced. Whenever proposals were made to form a medical union and to seek to improve the position of the local practitioners the melancholy experience of the past was invoked. Nevertheless, on Oct. 9th, 1896, an informal meeting was held at the infirmary which was attended by the two house surgeons and five practitioners from the town. This small group pledged themselves to use their utmost endeavours so as to bring all the local practitioners together and to establish a strong society. Each would strive to spread the idea among his acquaintances, and Dr. J. H. Hunter was requested to act as secretary to bring them together again when necessary. They also agreed to send an appeal and statement to the medical press. Another informal meeting was held on the 17th of the same month and it was decided to inquire what had been done at Hartlepool, where some of the local practitioners had established a medical service in opposition to the clubs and friendly societies. These early efforts were supported by 12 local practitioners who agreed to the principle and gave all help while doubting as to the possibility of obtaining unanimous support. It was indeed very up-hill work. Thus it was not till the beginning of the year 1898 that the initiators of the movement felt that their task was at last accomplished and that they could count on the unanimous support of all the medical men actually practising in the town. Another informal meeting was held on Feb. 16th, 1898, which was attended by 11 practitioners, and Dr. Alfred Cox came from Gateshead to explain how a medical union might be formed. It was then decided that the time had come to convoke a formal meeting and definitely to constitute a society.

Thus was the inaugural meeting of March 8th, 1898, brought about and it proved a great success. Out of a possible attendance of 34 practitioners no less than 28 were actually present. It was then resolved that a union should be forthwith established, its officials were elected, its objects were discussed, and the committee were appointed and instructed to draw up a set of rules. Within a week's time this task was accomplished. The objects were then defined as follows:—

(*a*) To promote good feeling and *esprit de corps* among the practitioners of South Shields and district.
(*b*) To safeguard the interests of the profession generally, and its own members in particular.
(*c*) To discuss medico-ethical and kindred topics affecting the profession.
(*d*) To form and issue a black list of habitual bad payers for the use of members only.

Two members of the committee made some objection to the proposed black list, but finally they came round to the views of the majority, so that the "objects" and the rules were unanimously adopted.

The title selected, as already stated, was that of the South Shields Medical Practitioners' Association which comprises all registered medical men residing, or having consulting-rooms, in the county borough of South Shields and the villages of Whitburn and Boldon. The subscription was only 5*s*. per annum and at least four general meetings were to be held in the course of the year. It was under the heading of "expulsion of members" that the most important rule was drawn up—namely:

In the event of this association agreeing to take combined action any member found guilty (after full discussion and ballot) of gross breach of faith shall be expelled from the association and professionally ostracised by the members of the association.

It was, however, agreed that no member should be expelled unless by a majority of two-thirds, not of the members present, but of the entire association.

This is the one disciplinary rule, the one weapon for enforcing the decisions agreed upon. On March 26th another general meeting was held which was attended by 23 out of the 34 medical men in practice at South Shields, and these rules as drawn up and recommended by the committee were adopted. Thus, and though it took some two years to prepare for the formation of the association, this preparation was so full and elaborate that when at last the formal steps were taken the support given was unanimous and everything was accomplished and organised in less than three weeks. All the old feuds and animosities between some of the practitioners in the town had been smoothed over, old enemies were now fast friends, and this happy uniting of the profession manifested by the official formation of the association was celebrated by a dinner held in the following month at which 21 members attended. The fact that on March 8th 28, on March 26th 23, and for the dinner on April 15th 21, out of the 34 medical practitioners were able to attend is very significant. At the most pleasant gathering, the dinner, there was the smallest attendance; to the most important meeting, when it was necessary to show a united front so as to form the association, there came the largest number. This illustrates the earnestness felt in the cause, and is truly encouraging.

In June, 1898, a general meeting was held to discuss the question of fees for certificates and emergency cases. The feeling was that certificates were constantly required for all manner of purposes other than the objects of the society which employed a medical officer. Therefore it was resolved that if a person wanted to join a friendly society or a trade protection society that did not employ a medical officer he should be charged 2*s*. 6*d*. for a health certificate. If such societies did employ a medical officer, then such medical officer was in future to charge 1*s*. for a certificate. Sick and health certificates given for other than lodge purposes were to be charged 1*s*. each. The point is that a person is often insured in several societies and only one of these societies employs a medical officer. It is not fair to obtain from that medical officer certificates needed by the other societies which do not employ him.

The first annual meeting was held in October, 1898, and 24 members were present. The report then submitted showed that the number of practitioners in and about the town had increased and consequently there were now 38 members of the association. The working expenses had been so slight that though the subscription was only 5*s*. the balance in hand was £3 13*s*. 8*d*. The late Mr. R. B. Anderson of the Corporate Medical Reform Association gave an address explaining the object of this organisation and 17 members joined this body after the South Shields Medical Practitioners' Association had passed a resolution approving the policy of the Corporate Medical Reform Association. At the general meeting held in November, 1898, it was resolved that the resolution in regard to certificates should come into force on the following Jan. 1st. It was also decided that no new friendly or trade society should be accepted for less than 3*s*. 6*d*. per head per annum. That this should be considered a great improvement shows to what a low ebb contract work had fallen. A penny per week, or 4*s*. 4*d*. per annum, should be the minimum, but nevertheless 3*s*. 6*d*. is a considerable improvement on the 2*s*. 6*d*. usually paid at South Shields. The meeting having heard of the efforts that were then being made to form the County of Durham Medical Union passed a resolution expressing their sympathy and approval. It was also decided to extend the field of action of the South Shields Medical Practitioners' Association to the neighbouring districts of Jarrow and Hebburn. The 10 medical men practising in these localities were willing to join, there would be no outsiders, and perfect unanimity would prevail. On the other hand, this would so increase the size of the ground covered by the association that it was necessary to subdivide it into districts with a "whip" for each district. Now followed the second annual dinner which was attended by 31 members and five visitors, and this large attendance shows how the association had increased in numbers and strength.

During the winter and the beginning of the following year the County of Durham Medical Union gave proof of its vigour, for it was engaged in several notable struggles, and as South Shields is in this county the question of affiliating with the more general movement was raised. After some discussion the affiliation was voted on March 14th, 1899, when another general meeting was held. This meant that the members of the South Shields Medical Practitioners' Association would have to pay 10*s*. 6*d*. instead of 5*s*. per annum and would not be able to keep their own money for themselves—that they would have to send it all to the treasurer of the county union at Durham. They would only receive back from the central council representing the county such sums as were judged necessary to cover their local working expenses. Considered from a purely narrow, local, and selfish point of view such affiliation did not seem a very advantageous transaction, but from the more philosophical, more generous, and broader point of view it was certainly the true policy. Local organisation, however successful, will always be endangered from the outside. A locality is as a larger individual, and if union is necessary in a locality between individuals the union of different localities with each other is equally necessary. So, the South Shields Association is now a branch of the County of Durham Medical Union. The benefits of organisation made themselves felt more and more as time went on. Thus, in May, 1899, a lodge changed hands and the rule came into force that no one was to accept a new appointment at less than 3*s*. 6*d*. The members of the lodge called on all the practitioners available offering the old terms of 2*s*. 6*d*., and they all refused, and thus the increase had to be given. No medical practitioner tried to underbid his colleagues; the formation of a union has put an end to any such modes of competition. On June 1st following the South Shields practitioners raised their charge for private family clubs from 6*d*. to 9*d*. per fortnight per family. They employed collectors, paying from 10 per cent. to 15 per cent. commission on the amounts collected, and gave them instructions not to accept less than 9*d*. and to strike off all those who would not give this amount. In the same manner as at Sunderland uniform subscription cards were printed for all the practitioners, so that wherever the subscribers went, from one end of the town to the other, every practitioner gave them the same card and offered them the same terms—there was no alternative left open. Before this uniformity of action on the part of the profession the public yielded at once. In the same way and with equal facility the midwifery fees have been raised from 10*s*. 6*d*. to 15*s*. These two items alone, the midwifery fees and the raising of the family private clubs from 6*d*. to 9*d*., have sufficed to increase the income of some practitioners in the town to the extent of about £100 per annum. Then it has also been resolved to apply a wage-limit in regard to family clubs and not to accept as members of such clubs any family where the principal wage-earner receives more than 35*s*. a week. On examining the prevailing rates of wages in the neighbourhood this was found to be the frontier line between the skilled and unskilled worker. As a matter of fact, very few men earn exactly 35*s* a week. Carpenters generally make 38*s*. and riveters 45*s*., whereas on the other side of the scale labourers often do not earn 20*s*. a week, and it is for the latter that family clubs are intended. The third annual meeting was held on Nov. 26th last and it was then determined to take in hand the question of hospital abuse. A committee to inquire into the matter was appointed. It was then also reported that at two collieries in the immediate neighbourhood of the town the increase to 9*d*. per fortnight had been granted, but that the men at a third colliery had imported a surgeon and at first only paid him 6*d*. per fortnight. After he had been on the spot for a little while he also suddenly refused to continue any longer working for so small a sum and insisted on the 9*d*. The miners, in face of this defection, had now yielded and were paying the sum required. One of the South Shields practitioners who had attended the miners at a neighbouring colliery had incurred some loss in consequence of this struggle, but was now regaining his old position. All these details indicate that genuine progress has been made. The methods adopted were very circumspect and prudent. Each step was taken only after elaborate preparation. No sweeping or sudden reforms were attempted. Slow and sure was the policy. This policy may have lacked in brilliancy, it may not have satisfied buoyant and impatient ambition, but it has brought about substantial improvement without necessitating any great risk or sacrifice. On the other hand it has left many grievances and abuses still unreformed and therefore there is yet much work to be done in the future.

South Shields.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Liverpool Country Hospital: a Munificent Donor.

THE second annual meeting of the subscribers to the Liverpool Country Hospital for the Chronic Diseases of Children was held in the Town Hall on March 4th, under the presidency of the Lord Mayor. The report stated that the children admitted to the institution were the subjects of diseases requiring a prolonged period of treatment in the country, whether medical or surgical, for their cure, and an essential qualification for admission was an opinion that a reasonable hope of cure existed. The hospitals in the city deal only with acute cases, and cannot meet this necessity. During the past year the applications for admission had been considerably in excess of the available accommodation; the 20 beds rented from the children's convalescent home at West Kirby had proved quite inadequate. The result of the year's work had been highly satisfactory, 12 out of 14 cases discharged having been cured. Of the 20 patients admitted when the hospital was opened 10 were still under treatment. The number of cots available for new cases had been very limited. It was gratifying that the committee had been able to acquire a suitable site at Heswall comprising nine acres, at a cost of £2500, upon which a hospital will be erected which would accommodate a largely increased number of children. The amount required to build the hospital would be £20,000, and a generous donor had come forward offering to contribute £5000 provided that three other donations of the same amount were forthcoming and that a further sum of £10,000 in any amounts should be raised as a maintenance fund. The gentleman who has made this offer wishes to remain anonymous, and makes a stipulation that the above amounts shall be raised by June 30th next. Mr. Holbrook Gaskell has added to his previous benefactions by sending £1000 to the fund. Mr. Alfred L. Jones also announced his intention of contributing £500, and the committee made an earnest appeal for funds to meet the conditions of the generous anonymous donor. There can be no doubt that the hospital has supplied a want long felt and the benefits of treatment aided by pure country air were warmly advocated by Dr. William Carter and Dr. Richard Caton at the meeting which was influentially attended.

The City Council and Workmen's Dwellings; the Prevalence of Measles in, and the Absence of Small-pox from, the City.

The housing committee of the City Council has been active in visiting several sites in the north, south, and central areas of the city to consider the requisite improvements for the erection of workmen's dwellings. A special committee has been appointed for the preparation of a scheme to give effect to this object. The medical officer of health (Dr. E. W. Hope), in his report to the health committee on Feb. 28th, regretted the continued prevalence of measles, of which he saw no signs of decrease, the number of deaths registered during the week from that cause being 31. A considerable number of schools had been closed, which had the effect of removing centres of infection. The disease was practically confined to the north and east areas of the city. Fortunately there was not a single case of small-pox reported during the week prior to the last meeting of the health committee (March 7th).

The Lord Mayor's Hospitals Century Fund.

The Lord Mayor has already received more than half of the amount for which he appealed to liquidate the indebtedness of the local charities. He has, in consequence, been enabled to distribute to the charities at the rate of 10*s.* in the pound. The Royal Southern Hospital received £2070, the David Lewis Northern Hospital £1881, the Royal Infirmary £1695, the Stanley Hospital £918, and the Liverpool dispensaries £620. Smaller amounts, bringing up the total to £10,126, were apportioned to the remaining charities.

March 12th.

WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Cottage Homes.

FOR some years past the principal boards of guardians in Glamorganshire have provided cottage homes for the children admitted to their workhouses. Their establishment has been attended with noticeable success at Bridgend, Swansea, Cardiff, Pontypridd, and at Neath, where additional houses are about to be erected at a cost of over £7000. The cost of these isolated dwellings with their increased staff is probably a little higher than that of one large building; in Cardiff it is said to be 9*s.* 4½*d.* per head weekly. The homes at Pontypridd were erected in 1892, and there are now occupied eight cottages, in each of which there is accommodation for 20 or 22 children of both sexes and of varying ages. The care of the household is entrusted to a foster-mother who is assisted only by those children in the home who may happen to be old enough to render assistance. Each house is self-contained, the meals being cooked and partaken of in the separate homes. In two of the cottages the foster-mother is married, the husband in one case acting as gardener and in the other as shoemaker, the boys receiving training in both these callings, and one cottage occupied by elder girls has a laundry attached to it. The children of school age attend a school within the grounds of the institution.

Swansea Workhouse.

Reference has already been made in this column (March 2nd, p. 668), to the re-arrangement of the Poor-law appointments at Swansea. The board of guardians have now decided to appoint a medical officer for the town district at a salary of £150 per annum and £10 as consulting medical officer to the workhouse, together with the vaccination fees, which are estimated to amount to an additional £300 yearly. The medical officer to the workhouse is to be paid a salary of £200 per annum, which sum is to include extra medical fees. The guardians will supply all medicines, but the medical officer is to bear the cost of all spirituous liquors that he may order. This last stipulation is surely a distinct innovation.

Arsenic in Beer.

In a recent report of the analyst to the county of Glamorgan it is stated that among a large number of samples of beer and brewing materials submitted for examination for arsenic in only one instance was any contamination found, and that was in a sample of beer from Merthyr, where arsenic was detected in amount equivalent to one-sixth of a grain of metallic arsenic per gallon. The analyst (Mr. Clarence Seyler) in the same report refers to the possibility of arsenic being found in beer brewed from malt, and in which glucose has not been used, owing to the malt having been dried by arsenicated coke. Mr. Seyler states that he has examined samples of coke made from Welsh coal and finds that while the best qualities are free from arsenic, in other varieties he has found it present in an appreciable amount up to one-twentieth of a grain per pound.

Health of Neath.

Mr. James Elias, the medical officer of health of the borough of Neath, in his report for the year 1900 records a death-rate of 19·1 per 1000 and the high infantile mortality rate of 179 per 1000 births. There were epidemics of measles and of typhoid fever in the town during the year.

West Cornwall Women and Children's Hospital, Redruth.

The annual meeting of the subscribers of this charity was held on March 6th. The medical report showed that 142 in-patients had been admitted, 110 of whom were women and 32 were children. The average stay in hospital was 30 days for women and 47½ days for children. The average cost per head, including staff, amounted to £28 16*s.* The financial statement showed that the total expenditure was £505 and an adverse balance of £43 remained.

Bath Workhouse.

At the meeting of the Bath Board of Guardians held on March 6th a letter was read from the medical officer of health (Dr. W. H. Symons) inclosing a copy of a communication which he had addressed to the Local Government Board complaining of being refused admission to the workhouse to investigate the outbreak of an epidemic among children there. The master stated that he acted in accordance with Article 214 of the Local Government Board Orders in instructing the porter to admit no one except the officials of the board without the authority of the guardians. Eventually the guardians decided to send an explanation of the circumstances to the Local Government Board.

March 11th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Glasgow Small-pox Epidemic.

THE position on the whole is showing signs of improvement, but is yet far from being satisfactory. There are still 435 patients under treatment in hospital, and the new cases number as a rule from 10 to 15 daily. The death-roll is now 167. The authorities continue to display unabated energy in their endeavours to check the epidemic, and a somewhat querulous tone which had begun to manifest itself in public criticism is now less evident. Dr. A. K. Chalmers, on behalf of the Health Committee, has addressed a circular letter to all medical practitioners throughout the city inviting their further coöperation in promoting revaccination. The letter proposes to divide the city into districts based on the census enumeration scheme for the purpose of organising a systematic house-to-house visitation. It is hoped that a sufficient number of practitioners will volunteer to conduct evening visits in each district so that the necessity of submitting to revaccination may be urged with the sanction of professional advice on every person not yet revaccinated. For each vaccination so obtained the modest fee of 2*s.* 6*d.* will be paid. As was to be expected the public spirit of the profession is proving equal to the occasion, and a meeting of medical men who have accepted the conditions of the circular is to be held at an early date to organise the details of the scheme. Councillor J. T. Biggs from Leicester has appeared on the scene and has spoken at a public meeting, which he persuaded to give an endorsement to a proposal that he should receive full liberty to visit the small-pox hospital. Bailie Stevenson, who was present, expressed his approval of the proposal, but the resolution when forwarded to the Lord Provost received a reply which will hardly invite further requests of the same nature. The local press has had the advantage of some vigorous comments on the "Leicester system" from the pen of Dr. Francis T. Bond, the honorary secretary of the Jenner Society, and the conditions generally hardly favour the progress of the anti-vaccination crusade.

A Dispensing Mistake.

An unusual case has recently occupied the attention of the Court of Session, in which a Glasgow commission agent sought to recover damages from a firm of druggists for a mistake made in dispensing a prescription. It seems that the pursuer left at the defendants' shop a prescription for some medicine to be taken internally, and that after this had been dispensed a bottle containing liniments of aconite and belladonna was by mistake given to a messenger who delivered it at the pursuer's office. The pursuer, without completely unwrapping the bottle, which was accurately labeled and marked "poison," at once proceeded to take a dose. Becoming suspicious that something was wrong he went back to the druggist to complain, taking with him the poisonous liniment. The druggist's assistant, though admitting that a mistake had been made, treated the matter somewhat cavalierly, not believing, as he said in court, the pursuer's statement that he had actually swallowed a dose of the liniment. When the pursuer reached home he became very ill and was for some time under medical treatment; he therefore sued the firm of druggists for compensation. It was pleaded in reply that the pursuer had been guilty of contributory negligence inasmuch as he had failed to remove the wrapper from the liniment bottle and had thus neglected to take proper precautions for his own safety. The Lord Justice Clerk in summing up made some strong remarks on the manner in which the pursuer's complaint had been met by the druggists' assistant and the jury found for the pursuer and assessed the damages at £700.

Glasgow University.

The preparations for the celebration of the ninth jubilee of the University are being steadily advanced. The ceremonies are to be on a highly elaborate scale and every effort is being made to render the whole undertaking a great success. It is hoped that one result will be a large addition to the fund to be raised for increasing the laboratory facilities of the University. Some substantial contributions have already been obtained and the sum promised now reaches some £25,000.—The death of Dr Dickson, emeritus professor of divinity, will be keenly regretted by many graduates, his picturesque figure being well known in the quadrangles, and members of all the faculties were his debtors for long years of service he gave to the University library.—The death of Dr. C. E. Foucart Scanlan will also touch the sympathies of Glasgow graduates of 10 to 15 years ago. Dr. Scanlan practised for some years in Australia, but he recently volunteered for colonial service on the West Coast of Africa. While on the voyage out he unfortunately succumbed to an attack of sunstroke.

Death of Dr. John R. Black of Greenock.

The intimation of the death at the comparatively early age of 51 years of Dr. John R Black has caused general regret in Greenock and the neighbourhood where he had gained a secure position in professional and public esteem. Dr. Black was a graduate of Edinburgh University and for some years acted as one of the surgeons to the Greenock Infirmary. More recently he interested himself to secure the establishment of a children's convalescent home, but unfortunately he has not lived to see the completion of his labours. His death took place on March 10th at Biskra, Algeria, where he had gone for a holiday with a view to re-establish his health.

Aberdeen Dispensary.

At the annual meeting of the supporters of the Aberdeen Dispensary, Maternity Hospital, and Vaccine Institution held on March 6th it was reported that the total number of cases treated during the year was 11,801. The ordinary and zymotic cases numbered 9235 and vaccinations 141. The new maternity hospital in Castle-street was described by the Lord Provost as a "splendid house." Five of the medical officers were re-elected, and for the vacancy caused by the resignation by rotation of Dr. A. T. Gordon Beveridge Dr. John F. Christie was appointed by a majority of votes.

The Hospital for Sick Children, Aberdeen.

The ordinary expenditure last year amounted to £3486, and the ordinary income to £1808, leaving a deficiency of £1678, reduced by legacies to £878, and an appeal for more liberal subscriptions has been issued.

March 12th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The University Question in Ireland.

IN order to carry out the objects aimed at in the resolution of the Senate of the Royal University of Ireland passed some time ago an influential deputation, introduced by Lord Morris, waited on his Excellency the Lord Lieutenant on March 9th for the purpose of asking that a Royal Commission might be appointed to inquire into the relations of that University with the other teaching bodies and with its own students. His Excellency's reply proved a happy surprise even to the members of the deputation. He said that after consultation with his colleagues an inquiry would be granted immediately and that it would assume the shape of a Royal Commission to inquire into the matter of university education in Ireland. He added, however, that the inquiry would not include any investigation into the condition, circumstances, or special work of Trinity College, Dublin. It will be noted that the field to be covered by the Royal Commission promised by his Excellency is far wider than was asked for or at all anticipated. It will probably prove of the greatest possible importance in connexion with the solution of the whole Irish University question.

Queen's College, Belfast.

Lieutenant-Colonel Moorhead, late of the Indian Medical Service, has been appointed by the College Council lecturer on tropical diseases, a department established at the suggestion of the Colonial Secretary.

Hospital for Diseases of the Nervous System, Belfast.

At the fourth annual meeting of this hospital held on March 8th it was reported that 473 patients had been treated during the year, as against 377 in the previous 12 months. On the first of this year wards for in patients were added, the hospital hitherto having been for out-patients only. The hospital has also been purchased from the ground landlord. At the conclusion of the meeting an "at home" was held in order to let the friends of the charity inspect the new wards.

North of Ireland Branch of the British Medical Association.

A meeting of the members of the North of Ireland branch of the British Medical Association, specially summoned to consider the report of the Constitution Committee, was held in the museum, Belfast, on March 8th. The President (Professor John W. Byers), who occupied the chair, gave a *résumé* of the details of the new constitution as proposed by the committee specially appointed at the last annual meeting of the Association at Ipswich. An interesting discussion followed, at the conclusion of which Lieutenant-Colonel Moorhead, moved, and Mr. G. L. St. George (Lisburn), an ex-President of the North of Ireland branch, seconded, a proposition, which was passed unanimously, approving of the recommendations of the Constitution Committee.

Dr. Alexander Dempsey on Irish University Education.

Dr. Alexander Dempsey, senior physician to the Mater Infirmorum Hospital, writes a very interesting letter to the *Belfast Irish News* (the organ of the Roman Catholics of the North of Ireland) of March 9th, pointing out that those who expect the Roman Catholics of Belfast and the north of Ireland generally to be satisfied with the endowment of a college in Dublin to supply all their requirements for university education know little of the feeling of the people. He says that the Roman Catholics of Belfast will not send their sons to Dublin where they have no friends or business relations of any kind. He points out the sacrifices made by Roman Catholics in the north of Ireland in order to be consistent and obedient to the teaching of the Church which made the restrictions against Roman Catholics attending the local Queen's College more severe than those in operation at Cork, Galway, or Trinity College, Dublin. Should the Roman Catholics of Belfast be ignored in the settlement of the university question Dr. Dempsey thinks the local bishop will have no easy task in preventing them from attending the Queen's College. If the Roman Catholics of Ulster are to be left out of any settlement, Dr. Dempsey says, let a University of Ulster be established and a Catholic endowed college as well, and let the latter with the Belfast Queen's College be equally represented on the Senate of the Belfast University. The Roman Catholics of Belfast and the north of Ireland have built an admirable new hospital in Belfast; they are also arranging to establish a medical school (in fact, their hospital is now recognised by the Royal University), and most naturally they demur to any arrangement of the university question which would tend to complete centralisation in Dublin. They believe, and many think most fairly, that the Roman Catholics of the north are quite entitled to obtain their medical education at home without going to Dublin. They see that continued centralisation of educational matters in Dublin is really causing no advantage, but the contrary, to the general inhabitants of Ireland, and that, even looking at the question of the advancement of the science of medicine, centralisation tends to stagnation.

March 12th

PARIS.

(FROM OUR OWN CORRESPONDENT.)

New Chairs in the Faculty of Medicine of Paris.

THE Municipal Council has just created two new chairs in the Paris Faculty of Medicine, the one of Clinical Gynæcology and the other of Clinical Surgery of Children. It is some two years since the project was first set on foot and the council voted 2000 francs as the endowment for each chair. Things, however, went no further owing to it being found impossible to decide as to who should be called to occupy the chairs. This year the subject has come up again and the nomination of the professors has been confided to 10 members of the Municipal Council and 12 representatives of the University, among whom are the dean and assessor of each of the three faculties and an additional assessor for the Faculty of Medicine. M. Pozzi was nominated for the chair of Gynæcology by 12 votes, as against five given to M. Bouilly and four to M. Second. M. Kirmisson was nominated for the chair of Clinical Surgery of Children by 13 votes in the third ballot as against nine votes given to M. Brun. The names will have to be submitted for ratification to the Minister, but there is little doubt as to his decision.

The Sanitary Condition of the Andral Hospital.

At the meeting of the Hospitals Medical Society held on Feb. 22nd M. Mathieu complained of the overcrowding and the grossly insanitary conditions existing at this hospital. Not only the patients but the nurses and visitors were affected by the want of air and by the abominable smells. The patients were very closely packed and those suffering from pneumonia lay on mattresses placed on the brick flooring of the wards. Owing to these conditions contagious affections multiplied exceedingly; for instance, all the patients in a low state of health suffered from thrush. M. Joffroy, M. Siredey, and M. Hirtz backed up M. Mathieu in his complaints and added some of their own. M. Faisans remarked that there were 1700 patients too many in the Paris hospitals, which was owing to the fact that a great number of persons were admitted who had no right to be so. On the other hand, it was impossible to increase the number of beds in the infirmaries (*lits d'hospice*) so as to relieve the pressure on the hospitals for want of funds. M. Mathieu suggested that a minimum cubic air space for every patient should be insisted upon. In barracks the minimum was 17 cubic metres per man and in military hospitals 40 cubic metres per patient.

The Bretonneau Hospital.

This new hospital which is devoted to sick children was opened on March 1st. The site contains 13,000 square metres and the buildings are of yellow brick ornamented with tiles which have a very bright appearance. The roofs are covered with coloured tiles. The various blocks are as follows: the first contains the rooms of the director and the house physicians and surgeons, administration offices, waiting rooms, and medical and surgical consulting rooms. In the second are the dispensary, the kitchens and offices, and a dining-room for the nurses. The remaining blocks are for wards, including isolation wards. The fittings of all these buildings are in accordance with the latest views upon hospital architecture and all angles made by the walls with the floors or ceilings are rounded. At the end of every ward is a kind of lobby well lighted and ventilated and furnished with a table and chairs where the little patients who are able to be up but not well enough to be out of doors can get up their strength after being in bed. Every ward has a bath-room with two baths, one fixed and the other moveable, the latter being for bedridden patients. There are three operating theatres fully fitted up and lighted with electric light. There is a lift and the warming of the buildings is done by steam. The isolation wards are fitted with glazed cubicles so that the children can see the goings-on in the ward from their beds although completely isolated. The lay staff of the hospital, including the nurses, numbers 125 persons. On the opening day the new hospital took in 40 surgical patients from the Tenon Hospital where they were being treated. The medical wards were to open about March 10th, but the dispensary is not quite ready yet.

Alcohol and the Army.

Last year General Gallifet, the then Minister of War, issued an order forbidding the sale of alcohol in barrack canteens. General André, the present Minister, has just issued another order to corps commanders on the same subject. "The order of last year," he says, "will give good results as regards the prophylaxis of alcoholism in the army. But seeing that the abuse of alcohol is always practicable in other places than barracks the order will do but little good unless by means of moral action exercised by the officers the men are convinced that alcohol, so far from giving them strength, diminishes their powers of resistance both to fatigue and disease." As a result of this opinion the Minister has decided that lectures are to be given to the various corps either by officers or by army surgeons upon the dangers and effects of alcohol, while at the same time a course of elementary lectures on hygiene is to be given. These two circulars have not, unfortunately, had such a good effect as was expected owing to the want of surveillance exercised by the officers, a want generally due to the complaints of the *cantiniers* about the monetary loss which they sustained, the sale of "nips" being their principal source of income. The artillery canteens in the north were particularly affected. The colonel of one of these regiments, however, hit upon the happy idea of trying milk and the results exceeded all expectation. The first day eight glasses were sold. Eight

days later 15 litres were sold in a morning and at present 80 litres are barely enough, without counting the sale of *café noir* and chocolate made with water.

The Treatment of Inoperable Tumours.

This subject, which comes up periodically for discussion at the various societies, has of late had special attention drawn to it. M. Wlaieff has been making experiments in the hospitals with a serum obtained from birds previously inoculated with the cells of blastomycetes obtained from human cancerous tissues. M. Berger and M. Lucas-Championnière have previously laid before the Academy of Medicine the results of some observations made upon patients with inoperable growths with this serum, who have improved in a very remarkable manner both as regards local conditions and also as regards their general health. Actual cure, however, was not obtained. M. Reynier has again brought the subject before the Society of Surgery. Using the serum he found that in a certain number of cases pain disappeared very rapidly, the patient's general condition improved, and the growth diminished in size, but did not altogether disappear. The results are much the same as those obtained some years ago under the use of the anti-cancerous serum of M. Richet and M. Héricourt. On the other hand, experiments made upon animals show that Wlaieff's serum has no appreciable effect when the lesion is generalised. M. Picque, in a case in which a malignant growth of the jaw recurred after operation, found that in spite of injections of Wlaieff's serum metastasis rapidly took place and that the injections apparently made the tumour grow. M. Bazy reminded the meeting that cancerous tumours sometimes disappeared without any anti-cancerous treatment, a fact which he had noticed in a case of cancer of the breast with secondary growths in the vertebræ. M. Berger, in resuming the discussion said that the improvement which followed these injections was to his mind unquestionable, and the treatment was certainly deserving of a trial in those cases where the surgeon felt unable to operate. He had seen most striking improvement occur in all the symptoms, but he had never seen the growth vanish completely. At the same meeting M. Launois referred to some remarkable results obtained by Jaboulat's method of hypodermic injections of quinine. The case was one of cancer of the breast. Glands were involved both in the axilla and the supra-clavicular region. There was marked cachexia and the patient suffered severely. She could neither eat nor sleep and the growth had obviously extended to the vertebræ, in fact she was dying. After being treated for two months with injections of quinine hydrochloro-sulphate given every two days in doses of 50 or 60 centigrammes the results were something marvellous. The ulcer healed up and the breast had almost regained its shape, the glands were no longer to be felt, the patient who had been absolutely bedridden was going about, had no pain, slept well, had regained strength, and had put on flesh. This improvement was maintained although the treatment had been left off for a month. These facts are worthy of every attention for in quinine we have a therapeutic agent whose parasiticidal action is known.

arch 13th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Anæsthesia produced by Intradural Injections in the Lumbar Region.

SOME time ago Professor Bier of Greifswald made the important discovery that an injection of cocaine into the lumbar arachnoid caused a total analgesia of the lower extremities and of the abdominal and lumbar surface as far as the mammary region. Experiments were made on Professor Bier himself, on his assistant, and on five patients, the result being that a dose of from 0·005 gramme to 0·150 gramme of cocaine was found to produce analgesia, which began in from five to 10 minutes and lasted about three-quarters of an hour, so that operations on the lower extremities could be performed without the use of any other anæsthetic. Some disagreeable after-effects were experienced, such as headache and vomiting, but there were no grave complications. This method has been tried by several surgeons. Professor Seldowitsch of St. Petersburg has performed operations on the lower extremities of four patients under total analgesia produced in this way, but it was attended with some rather disagreeable symptoms. All the patients some hours afterwards complained of a feeling of intense cold, their temperatures rose to about 40° C. (104° F.), and they also suffered from headache, giddiness, vomiting, and in one instance also meiosis. All these complications disappeared by next day. Professor Tuffier of Paris obtained very favourable results as regards the analgesia, but the above-mentioned complications were present in his cases also. In a paper read before the International Congress of Medicine in Paris he said that he had used the method in 126 cases, the anæsthesia beginning with prickling and formication in the lower extremities which was followed by a feeling of great anxiety, epigastric oppression, vomiting, cold perspiration, and acceleration of the pulse. The symptoms disappeared after 24 hours and were not serious so that Professor Tuffier recommended the method as available for surgical operations. Two other surgeons, Dr. Severeanu and Dr. Racoviceanu of Bucharest, stated in the discussion that they had given lumbar intradural injections of cocaine in 70 and 125 operations respectively. The last-named gentleman found that some disagreeable symptoms, including syncope, were produced in his patients, so that he thought general narcosis by chloroform was preferable. By experiments on animals Dr. Nicholetti of Naples ascertained that cocaine did not produce any alterations in the nerves or the medulla, but that its action was merely vaso-motor; other substances such as ergotin, quinine, and antipyrin, when injected into the lumbar arachnoid had the same effect. Professor Bier himself, in a second communication published in the *Münchener Medicinische Wochenschrift*, states that his method is too dangerous to be generally used and he warns surgeons not to inject more than 0·015 gramme of cocaine. He hopes, however, to be able very soon to recommend injections of another anæsthetic devoid of poisonous action by which analgesia will be produced not only in the legs but also in the trunk and the upper extremities. Injections of eucaine proved useless. Dr. Engelmann of Bonn had 0·010 gramme of this substance injected into his own lumbar arachnoid, the effect being that all the same disagreeable complications of vomiting, fever, dyspnœa, &c., appeared as with cocaine, but the analgesia was very incomplete. Much better results were obtained with tropacocaine. Dr. Schwarz of the hospital at Agram, writing to the *Centralblatt für Chirurgie*, has stated that he has injected this new drug in 16 cases. He began with a dose of 0·015 gramme, gradually increased to one of 0·050 gramme. In no instance did any of the complications produced by cocaine make their appearance. Injections of 0·030 gramme were followed by analgesia extending from the feet to the knees; with stronger doses a more extensive region was affected; with an injection of 0·040 gramme Dr. Schwarz was able to remove a sequestrum from the femur and to operate on several cases of hernia without any pain to the patient. With injections of 0·050 gramme operations of two hours' duration were performed. The general health of the patients was not at all interfered with, and the analgesia appeared in 10 minutes after the injection. Dr. Schwarz was therefore of opinion that the use of tropacocaine by Professor Bier's method will ultimately become the ideal method of producing anæsthesia. Memoirs on the production of anæsthesia by injection of cocaine into the lumbar arachnoid during labour were read last year before the Paris Academy of Medicine by M. Doléris and M. Malartic,[1] whose attention had probably been directed to the subject by the publication of Professor Bier's discovery.

German Military Hospitals in China.

The *Deutsche Militärärztliche Zeitschrift* has published a letter from Surgeon-General Dr. Krosta, the chief medical officer to the German forces in China, dated from Tientsin, Dec. 12th, 1900. He stated that four military hospitals, with about 1000 beds, had been established in Tientsin. Tientsin University was converted into a hospital, for which purpose it was structurally well suited, the wards being large and well ventilated. The arrangements were as complete as in any well-equipped hospital in Europe. There were hygienic, chemical, bacteriological, and radiographical

[1] THE LANCET, August 11th, 1900, p. 465.

laboratories, a dissecting-room, and even a dental department which was very much resorted to. All these institutions were under the care of specially trained medical officers. There were two rooms for operations of which one was provided with electric light. There were also military hospitals for the garrisons at Peking and Paotingfu. A home for convalescents has been established at Kobe, Japan, by the German Red Cross Society. Dysentery and enteric fever had been prevalent, but the former was disappearing whilst enteric fever was becoming rather malignant. The health of the troops was generally satisfactory, the sick being on an average 5 per cent., but among the marines the proportion was much greater. Scientific work was not neglected, and the hospital reports were being collected for publication after the cessation of hostilities. A German medical society had been founded under the presidency of the chief medical officer.

March 11th.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

Operations on the Upper and Lower Jaw.

ON Feb. 2nd Professor Carl Schlatter spoke in the Zürich Medical Society on this subject. The dangers of the aspiration of blood during operations on the maxilla can be avoided by incomplete narcosis, which, however, is most distressing to the patient, makes the operation much more difficult, and necessitates more haste than is desirable in the case of removal of malignant tumours. Professor Schlatter recommends preliminary compression or ligature of the external carotid if necessary, also of the internal carotid artery, especially in the case of anæmic patients, who, however, should not be suffering from arterio-sclerosis. At the same time this gives the operator the great advantage of removing metastatically diseased glands, which first appear along the carotids and are often overlooked. This latter fact explains the high percentage of recurrence of malignant tumours of the upper jaw. The direct (immediate) mortality of the operations of resection of the maxilla is already very high—from 14 to 31 per cent. (Bryant, Martens)—so that the results in the Zürich surgical wards seem especially satisfactory, there being only one case of death on record out of 34 cases of total resection of the upper jaw for malignant tumour; but the proportion of recurrence is high—König reports 33 out of 47 patients and the Zürich clinique 23 out of 34 cases. Professor Schlatter, speaking of three cases which he successfully operated on, prefers either temporary ligature of the common carotid artery with thin indiarubber tubing or permanent ligature of the external carotid, the hæmorrhage during operation being thereby greatly reduced. Dr. Stoppani, dental surgeon of Zürich, supplied the patients with excellent protheses which corrected both prolapse of the bulb of the eye and deficient speech. Professor Schlatter showed a girl, aged 17 years, from whose mandibula he resected some three inches for myelogenic sarcoma occurring six and a half years ago. After the operation he introduced a "prothèse immédiate" and a month later a definite prothesis made of gutta-percha and surmounted with false teeth; this prothesis, which fitted perfectly and could be taken out and cleaned after meals, had to be renewed four times in six years, corresponding to the growth of the skeleton. The present functional and cosmetic result is perfect: only a slight cicatrix on the outside of the jaw indicates the line of operation, and speech and mastication are both satisfactory. Dr. Stoppani's prothesis with perforated metal side splints proved most valuable; it makes the surgeon independent of the dental surgeon during and immediately after the operation, the chin does not retract, the wound can be kept antiseptically clean, and a cast can be made without more than a short removal of the "prothèse immédiate" from which the definite prothesis can be constructed.

Wounds of the Eye.

On Feb. 23rd at a meeting of the Medical Society of Zürich Professor Haab read a paper on Wounds of the Eye. These wounds are frequent and of practical importance, as the primary treatment greatly influences the prognosis. Of 12,958 patients who attended the out-patient department of the Ophthalmological Clinique during three years, 182, or 1·4 per cent., had perforating wounds of the eye, and 687, or 5·3 per cent., non-perforating wounds. This makes a total of nearly 7 per cent. of all cases. As to primary treatment Professor Haab is a great adversary of wet appliances of any kind, whether moistened with plain water, Goulard water, or weak sublimate solution, as the fingers applying them are rarely properly disinfected and in the case of perforating wounds pressure of any kind is very detrimental. The best primary bandage consists of a pad of aseptic wadding with or without a piece of iodoform gauze. It is only in the case of damage done by an alkaline solution or by lime that immediate flushing of the eye with a watery solution is desirable. Even very severe cases, if treated with a pad of aseptic wadding and immediately sent to the hospital, recover well, as was shown in the case of eight school children who were lately severe sufferers from an acetylene explosion at Diessenhofen. Three-fourths of the foreign bodies in the eye can be removed by the use of the great magnet which Professor Haab had constructed and with which he has successfully performed 150 operations. Fragments of copper, deeply seated, are very difficult to remove even for a most experienced operator. Demarre's pince capulaire was useful in some cases where the foreign body was lodged in the corpus vitreum. Professor Haab, practically aided by his assistant, Dr. Sidler, has lately made successful use of tiny iodoform gelatin rods (*kleine Stäbchen*) to disinfect infected wounds; a certain number of 30 cases thus treated gave unexpectedly good results. The iodoform is first treated with a 5 per cent. carbolic acid solution, filtered, dried, and formed into small rods by means of a proper admixture of gelatin.

Zürich, March 9th.

Medical News.

VACCINATION IN BRISTOL.—The vaccination officer's returns relative to children whose births were registered in Bristol from January to June, 1900, have been recently issued. They show that 4651 births were registered; of these children 2451 were successfully vaccinated, eight were insusceptible, and 426 died unvaccinated; 95 certificates of conscientious objections were issued, 180 vaccinations were medically postponed, and there were 463 removals. During 1899 and 1900 the total number of successful vaccinations amounted to 5073 and 5930 respectively.

BRISTOL GENERAL HOSPITAL.—The annual meeting of the governors of this institution was held on March 11th, under the presidency of the Lord Mayor. The medical report showed that the out-patients numbered 31,441, being 131 in excess of any preceding year. The in-patients numbered 2187, an increase of 87 compared with 1899. The daily number of in-patients was 162. 402 patients had been sent to the Jubilee Convalescent Home. The financial statement showed that the total ordinary revenue amounted to £10,586, or less by £1505 than in 1899. The report alluded to the new out-patients' department, with porter's lodge, which is now being erected at a cost of £7000. These alterations will provide new casualty rooms and better waiting-rooms for the out-patients. The electric light is being installed and a new hot water-supply has just been introduced. The total cost of all these much needed improvements is £9000, for which sum the committee confidently appeal to the public.

OVERCROWDING AT STOCKPORT WORKHOUSE.—A report from the medical officer, read at the meeting of the Stockport Board of Guardians on Feb. 25th, reveals what is called in a newspaper report a "difficulty in consequence of the disgraceful overcrowding of the workhouse hospital." There has been a serious outbreak of influenza in the workhouse, "14 deaths in one week being attributed to the disease," and it was in consequence of the overcrowding impossible to isolate the sufferers. Patients have had to be discharged to the body of the house before they were fit "to sleep there or to be classified with the able-bodied." The medical officer says that he is obliged to act contrary to his judgment and that he cannot hold himself responsible if anything untoward should result. Various steps have been taken to meet the emergency. "Even the lock ward was filled with persons who ought not to have been put in such a place, and

the matron was very distressed that she had no option but to put decent people there." This state of things seems more like a reminiscence of the days of Mr. Bumble and Oliver Twist than a picture of what can be met with to-day, and so it seemed to be felt by most of the guardians, one of whom, however, contended that there was space enough and to spare.

PRESENTATION TO A MEDICAL MAN.—On March 6th the members of the Whitefield district of the St. John Ambulance Association presented Mr. A. J. Young, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., with six volumes of Darwin's works as a mark of appreciation of his services as instructor.

PREVENTION OF CONSUMPTION.—A meeting was held at Tavistock on March 7th in support of the proposed sanatorium for consumptive patients in Devon and Cornwall. Mr. C. C. Brodrick, medical officer of health, presided, and Mr. J. W. Spear, M.P., Dr. F. G. Bushnell, and others gave addresses.—A meeting of the Gloucestershire, Somerset, and Wilts branch of the Society for the Prevention of Consumption and other Forms of Tuberculosis was held at the Guildhall, Bath, on March 6th, under the presidency of the mayor, and among those present were Dr. R. Shingleton Smith and Dr. E. Long Fox. Sir James Crichton Browne was the principal speaker. A resolution pledging the meeting to do all in its power to raise funds for the proposed sanatorium was carried. Dr. L. A. Weatherly stated that the proposed building would contain 60 beds. On the motion of Sir J. Dickson-Poynder, M.P., a hearty vote of thanks was passed to Sir J. Crichton Browne.

VACCINATION IN LEICESTER FROM 1873 TO 1900.—*Apropos* the action of the Government in regard to vaccination, or rather non-vaccination, in the borough of Leicester the following official statistics, presented at a recent meeting of the Leicester Board of Guardians, make interesting reading:—

Year.	Births registered.	Successfully vaccinated born during the year.	Vaccinated by public vaccinators.	Total successfully vaccinated during the year irrespective of date of birth.	Cost. £ s. d.
1873	4446	3730	2266	3692	353 7 7
1874	4365	3590	2700	2764	363 1 0
1875	4256	3400	2115	3527	336 12 7
1876	4773	3650	2188	3426	347 17 11
1877	4749	3509	2318	3653	347 0 7½
1878	4777	3260	2106	3372	344 12 0
1879	4695	3086	2036	3146	331 5 0
1880	4860	3010	1904	2886	333 15 1
1881	4712	2948	2172	3417	428 5 0
1882	4855	2660	1807	3106	367 14 3
1883	4819	1732	1300	1968	321 0 7
1884	4849	1700	776	1763	273 16 9
1885	4690	1376	1017	1842	298 13 1
1886	4874	598	559	1122	263 6 11
1887	4693	322	164	471	180 18 6
1888	4815	219	59	314	176 5 6
1889	4786	126	18	172	167 16 8
1890	4697	118	16	131	161 2 7
1891	4785	74	8	92	126 13 9
1892	5816	132	13	133	142 8 3
1893	6010	119	38	249	167 12 8
1894	5996	93	16	153	161 8 0
1895	5961	59	25	75	157 16 5
1896	6105	52	12	77	158 14 4
1897	6235	67	11	81	176 18 8
1898	6164	87	16	111	164 0 2
1899	6274	219	63	219	201 19 1
1900	—*	—*	109	466	842 15 1
Totals ...	138,156	39,936	25,832	43,398	7696 18 0½

* Figures not yet available.

HEALTH OF TAUNTON.—Dr. H. J. Alford, the medical officer of health of the urban and rural districts of Taunton, has just issued his annual reports. He states that 427 deaths occurred in the borough, equal to a rate of 19·2 per 1000. The births were 535, or at the rate of 26·2 per 1000. There were 42 deaths from zymotic diseases, 28 being due to measles. In the rural district there were 283 deaths, equal to a rate of 16·6 per 1000. 382 births were registered—a rate of 21·8 per 1000. During the year 66 patients were admitted to the isolation hospital; only two of the cases were fatal, both patients dying from diphtheria.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. C. J. Rossander, Professor of Ophthalmology in the University of Stockholm.—Dr. Manassein of St. Petersburg, one of the most eminent physicians in Russia. He was born in Kazan in 1841 and after studying medicine in Moscow and Dorpat travelled abroad to various foreign universities. At Tübingen he worked under Professor Hoppe-Seyler and was entrusted by him with the charge of the "castle laboratory." On his return to Russia he became assistant to Professor Botkin, and in 1876 was appointed clinical professor. His chief work lay in experimental pathology. For many years he was editor of the chief Russian medical weekly, the *Vrach*.

METROPOLITAN ASYLUMS BOARD.—At the last meeting of the Metropolitan Asylums Board the Asylums Committee reported that they had received with regret a letter from Mr. G. S. Elliot intimating that in consequence of ill-health he felt compelled to relinquish his office of medical superintendent of Caterham Asylum, which office he had held for upwards of 21 years. At their next meeting the committee stated that they intended to consider the steps to be taken to appoint a successor to Mr. Elliot who desires to vacate his office on June 30th next. In the meantime they recommended that the terms upon which the appointment of a medical superintendent for the Caterham Asylum in succession to Mr. Elliot should be made as follows: salary £600 per annum, rising annually to a maximum of £800. Other emoluments: unfurnished house, coals, gas, and washing. The report was adopted. The chairman of the Finance Committee in his annual statement with regard to the expenditure of the board stated that the total population for which they were responsible on Sept. 30th, 1899, was 15,481; of this number 4117 were the staff and 11,364 patients. The figures for the year 1900 were 14,193, of which 4145 were staff, and 10,048 patients—a decrease of patients by 1316 and an increase of 28 in the staff in attendance. The Local Government Board wrote confirming the appointment of Dr. T. Colcott Fox as dermatologist of the Bridge School for Children.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Cremation.

PROGRESS is being made in the House of Lords with a Bill on the subject of cremation. The measure gives a general power to burial authorities to make provision for the burning of human remains, while requiring that the plans of all crematoria shall be approved by the Local Government Board, and it lays upon the Home Secretary the duty of making regulations as to the conduct of crematoria. One of the clauses provides against interference with the jurisdiction of coroners and says that nothing in the Act shall authorise the burial authority to create or permit a nuisance.

Proposed Exemption of Hospitals from Local Rates.

The Bill to secure the exemption of hospitals from local rates was set down for second reading in the House of Commons on Wednesday, March 13th, but it was not reached until the expiry of the time for the discussion of contested business and consequently no progress was made with it.

HOUSE OF COMMONS.

THURSDAY, MARCH 7TH.

The Fees of Medical Witnesses.

Mr. LAWRENCE asked whether he would explain on what grounds medical witnesses in England and Wales were allowed only one guinea per diem, while in Scotland they were paid two guineas with a further

sum added for each case, and in Ireland the fee of one guinea only required an attendance in court of three hours in the town of residence and was changed to two guineas with travelling allowance in the case of other towns; and whether he would authorise an inquiry into the matter with a view to remedy the inequality of remuneration referred to.—Mr. RITCHIE: I do not think the fees of medical witnesses can be touched without dealing at the same time with those of other witnesses, and this I am not prepared to do in view of the largely increased cost of prosecutions which might be the result of such a revision of the present scale.

Vaccination Prosecutions.

Sir MANCHERJEE BHOWNAGGREE asked the Home Secretary if he would state how many prosecutions had been instituted by the vaccination officer of the borough of Bethnal Green since the passing of the Vaccination Act, 1898; how many convictions were obtained, and how many of the fines imposed remained unrecovered; whether he was aware that most of the persons prosecuted were unable to defend themselves effectually owing to ignorance of the procedure provided under Section 2 of the aforementioned Act; and, if so, was he prepared to allow a remission of the fines imposed.—Mr. RITCHIE: It would be impossible to give the information asked for in the first three queries without a search of the police-court records or without reference to the guardians, and the work of obtaining the information would involve much time and labour. I have no reason to suppose that persons prosecuted under the Vaccination Acts in Bethnal Green have found any greater difficulty in defending themselves than persons similarly prosecuted in other places, but if the hon. member will furnish me with full details of any case in which he thinks the defendant has suffered injustice I will inquire into it.—Sir MANCHERJEE BHOWNAGGREE asked the President of the Local Government Board whether he was aware that vaccination prosecutions in Bethnal Green and adjacent boroughs were being rigorously pursued against persons who had a conscientious objection to vaccination and had resulted in convictions owing to the difficulty encountered by the accused persons of proving that their objection was based on a conscientious belief; and seeing that in this respect and owing to loss of time and wages which was occasioned by the process of asserting their objection under Section 2 of the Vaccination Act, 1898, that Act did not give full relief to objectors, whether he purposed adopting any steps by which the operation of that Act might be rendered more easy and effective in future.—Mr. WALTER LONG: I am not myself aware of difficulties of the kind referred to in the first paragraph of the question and I should regret if any such difficulties were experienced. The answer to the second part of the question must, however, be in the negative.

FRIDAY, MARCH 8TH.

St. John Ambulance Brigade in South Africa.

Sir FREDERICK MILNER asked the Secretary of State for War whether it had been officially decided that members of the St. John Ambulance Brigade who had served in South Africa were not entitled to the war gratuity that was by a recent Order awarded to all classes of troops engaged in the war; and whether, seeing that the members of the St. John Ambulance Brigade had been working with the Royal Army Medical Corps, doing the same duties and bearing the same risks and hardships, and also seeing that 50 out of the 1900 members of the St. John Ambulance Brigade serving in South Africa had died in the execution of their duty, he would reconsider this decision.—Mr. BRODRICK: The answer to the first paragraph of the question is in the affirmative. The war gratuity is a military gratuity originally intended as a substitute for prize-money and is not applicable to civilians employed on specific terms during the war. I may remind the hon. member that members of the St. John Ambulance Brigade are paid at considerably higher rates than the corresponding ranks of the Royal Army Medical Corps.

MONDAY, MARCH 11TH.

Dangerous Tea.

Mr. HENRY HOBHOUSE asked the Secretary to the Treasury if his attention had been drawn to the fact that quantities of inferior Ceylon and other teas alleged to contain microbial products dangerous to health were being sold in bond in London at prices ranging below 4*d.* per pound; if the Customs officers had taken and analysed any samples of such teas, and with what results; and what amount had been seized and destroyed during the last 12 months; and, if in the interests of public health he was willing to consent to an inquiry into the best methods of checking the sale of such unwholesome teas by determining some minimum standard of purity and by securing a proper analysis of such teas before they were blended with other teas.—Mr. AUSTEN CHAMBERLAIN replied that the Board of Customs had no knowledge of sales in bond of tea containing microbial products dangerous to health. They had power to forbid the introduction of tea that was found on analysis "to be mixed with other substances or exhausted tea" or was declared by the analyst to be "unfit for human food." During the last 12 months 2055 packages were refused admission for home consumption or for use as ship stores. The second paragraph of the question should be addressed to the Local Government Board, which was the authority specially charged by statute with the protection of the public health.

Vaccination in England and Wales.

Mr. WALTER LONG, answering a question addressed to him by Mr. BARTLEY, said that the latest complete returns with regard to the vaccination of children in England and Wales were those for 1893. They showed that the number of children born in the year was 923,059, and of these 562,737 were successfully vaccinated.

The Government and the Pure Beer Question.

Mr. ALFRED DAVIES asked the President of the Local Government Board if his attention had been called to the unanimous resolution passed by the Carmarthenshire Chamber of Agriculture as to the necessity of a Bill being passed to secure purity in beer by laying down therein the ingredients of which beer might be composed and the compelling of brewers at regular intervals to make a return of beer brewed and ingredients used; and, if so, whether he could assure the House of his intention to introduce promptly a Bill carrying out the purport of this resolution.—The CHANCELLOR of the EXCHEQUER: The President of the Local Government Board has asked me to answer this question, as the resolution aims not only at the exclusion of deleterious ingredients from beer, but at limiting the freedom of brewers to use materials which, though wholesome, are not malt or hops. I can give no such assurance on behalf of the Government as is desired by the hon. member.

The Insanitary Condition of the Central Criminal Court.

Mr. J. R. DEWAR and Dr. FARQUHARSON addressed questions to the Under Secretary of State for Home Affairs with reference to the insanitary condition of the Central Criminal Court and the indisposition of certain of the judges who had presided in the court.—Mr. JESSE COLLINGS, in reply, said that the City of London authorities were responsible for the building in which the Central Criminal Court was held. In order to furnish them with a site on which to build a new court the Government had agreed to surrender Newgate Prison, but in order to make this possible extensive alterations had to be made in prison buildings elsewhere. This involved considerable delay, but it was not the case that the Government were placing difficulties in the way. As a matter of fact, the Prison Commissioners were doing all they could to complete the arrangements which were a necessary preliminary to the discontinuance of Newgate Prison and the transfer of the site to the City of London Corporation.

TUESDAY, MARCH 12TH.

Nursing in Irish Workhouses.

Mr. GEORGE WYNDHAM, Chief Secretary for Ireland, made a statement on this subject by way of answer to a question addressed to him. He said that in the interests of the sick poor it was imperatively necessary that the assistant nurse of a small workhouse hospital should be an experienced qualified nurse, as she had entire charge of the sick during the temporary absence of the nurse from any cause, besides having probably to take charge of patients at night in many cases. The opinion of the Local Government Board in Ireland was that no person should be appointed and paid for discharging the duties of a nurse unless she had been sufficiently trained. The Board did not ask that an assistant nurse should be fully trained within the meaning of Section 58 of the Local Government (Ireland) Act, 1898, and the Board had always been glad to encourage boards of guardians to train nurses whenever a systematic course of training had been proposed under sufficient and competent teachers as had been done in some unions. The Board was, however, unable to approve of proposals that inexperienced untrained girls should be permitted to discharge nursing duties and to acquire the status of a nurse without any sufficient or systematic instruction.

ROYAL COMMISSION ON ARSENICAL POISONING.

WEDNESDAY, MARCH 6TH.

THE Royal Commission on Arsenical Poisoning held a meeting on March 6th in one of the rooms of the Westminster Palace Hotel. Lord KELVIN presided and the other Commissioners present were Sir W. S. Church, Sir William Hart Dyke, M.P., Professor Thorpe, Dr. B. A. Whitelegge, and Mr. H. Cosmo Bonsor, with Dr. G. S. Buchanan, secretary to the Commission.

Evidence of Dr. E. W. Hope.

Dr. EDWARD WILLIAM HOPE, professor of public health in the Victoria University and medical officer of health of the City and Port of Liverpool, examined by the CHAIRMAN, said that he had considered the amount of recent exceptional sickness and death attributable to poisoning by arsenic, and he was one of the members of a small subcommittee appointed on Dec. 20th by the Liverpool Medical Institution to inquire into the matter. About 100 cases of poisoning by arsenic which admitted of easy verification were tabulated by this sub-committee. These cases were treated in public institutions and eight of them were fatal, inquests being held in four instances. Besides these definite cases of poisoning and maiming there were many others in which the symptoms were less marked and the verification less easy. Many of these cases occurred in private practice, but some of them in public institutions. The exceptional sickness and death appeared to have been entirely owing to arsenic in beer. Samples of chocolate, syrups, jams, marmalade, and preserved sweets of all kinds were systematically examined; 107 samples carefully and specifically examined during November, December, and January did not contain any trace of arsenic. For many years it had been a routine practice in Liverpool to take samples of all kinds under the Sale of Food and Drugs Acts, special attention being directed to suspected articles. Until recent occurrences the samples of beer taken for analysis had been very few. In October last, however, eight samples of beer and two samples of stout were purchased and reported to be genuine. Some time prior to this Dr. Nathan Raw mentioned to him the increasing number of patients coming under his care at Mill-road Infirmary suffering from what he regarded as alcoholic neuritis. Towards the end of November the announcement was made in the Manchester newspapers that Dr. E. S. Reynolds had cases of arsenical poisoning under his care at Manchester and that Mr. C. H. Tattersall had reported that arsenic had been found in beer purchased in the city. The cases at Mill-road Infirmary already alluded to were at once recognised in the light of this information as cases of arsenical poisoning. As the patients at Mill-road Infirmary were all beer-drinkers there was *prima facie* evidence that their illness was caused, as in Manchester, by the consumption of beer. At that time (Nov. 26th) there was no positive evidence of this in his possession nor was there any evidence as to the source of the arsenic.

Have you any reason to believe that detrimental effects from arsenic

in beer have occurred previous to this outbreak?—It appears so, though there are no analytical reports to support that belief. It is by inference I say there was arsenic in beer some months prior to the 26th November, when it was definitely ascertained to be there.

Peripheral neuritis and alcoholic neuritis were known before this outbreak?—Yes; we are very familiar with alcoholic neuritis in Liverpool.

Do you think that in some cases prior to 1900 the illness may have been really due to arsenic and not merely to alcoholic neuritis?—It is possible that it may have been, but we have no evidence to show that it was the case.

Do you know anything of beer having been suspected and tested for arsenic before the present outbreak?—The practice of the health authorities has been to have beer analysed, but we have never had any report from the analysts to show that there was arsenic in beer until November of last year.

Was the analysis prior to last year of such a character that arsenic would be detected by it?—That I am not in a position to say. The samples were said to be genuine samples and I cannot think that a sample would be certified to be genuine if it contained a deadly poison such as arsenic.

In further examination by the CHAIRMAN Dr. HOPE said that the gravity of the situation was increased by the fact that the consumption of alcohol in its various forms in Liverpool was excessive and in certain areas of the city exerted a material influence upon the public health. According to the verdicts of the coroners' juries many scores of people lost their lives annually from excessive drinking. The consumption of beer in Liverpool approximated to something like three-quarters of a million gallons per week. It was an enormous consumption, but he had no reason to doubt the figure he had given. There were 2223 houses within the city where beer was sold. It was obvious, therefore, that if an article so extensively used was actually at that moment the medium for poisoning by arsenic only the promptest measures could avert a catastrophe. The provisions of the Sale of Food and Drugs Acts did not admit of a sufficiently speedy application to meet the emergency and seizure of the contaminated beer under the Public Health Act so soon as evidence of contamination was available commended itself to him. The inspectors, three in number, under the Sale of Food and Drugs Acts were instructed to procure samples of beer for analysis, but having regard to the utter impossibility of obtaining reports upon samples under these Acts within a period of time which would be of use he requested the analysts to employ the most rapid processes to enable them to determine whether or not arsenic was in the samples, irrespective of the quantity present. The first and obvious duty was to protect the public health by ridding the city of the arsenical beer. At the same time samples were taken with the formalities of the Sale of Food and Drugs Acts to be subsequently dealt with so that proceedings could be taken if it were thought expedient. Samples were taken from 60 different firms. Arsenic or traces of arsenic to a varying extent were found in the beer supplied by 20 of these firms. Out of 237 samples taken from these 20 firms 52 were found to contain arsenic. From the remaining 40 firms 178 samples were taken and all of them were entirely free from contamination. Many of the brewing firms had themselves employed analysts and had anticipated action by destroying the beer. In these ways the brews implicated were speedily detected and large quantities of contaminated or suspected beer were poured into the sewers. There did not appear to have been any neglect or delay in the destruction of the arsenicated beer excepting in two cases, in one of which it appeared that the beer had still been retained upon the premises with a view to recover its value, an objectionable and most improper proceeding. The total quantity of the beer destroyed was 267 000 gallons. Had they proceeded under the Sale of Food and Drugs Acts he calculated that there would have been a delay of between three and four weeks in getting rid of the beer. It must not be overlooked that at the end of November and the beginning of December all the chemical laboratories (not only those of the public analysts) were overwhelmed with samples of beer, the brewers themselves sending large numbers of samples. So far as the city analysts were concerned it would not have been possible for them to have examined one-tenth of the number of samples for a quantitative analysis which were dealt with in the manner described. The source of the arsenic was speedily traced. It very soon became evident that brewers who had been using glucose manufactured by Messrs. Bostock and Company, Limited (a firm of manufacturers in Garston, a few miles from Liverpool), were those whose beer contained arsenic; beer manufactured by those who had not used Bostock's sugar was free from arsenic. It transpired that brewing firms whose beer was not found to contain arsenic were customers of Bostock's but it was stated that they did not use Bostock's sugar. On Nov. 26th a circular was issued by Messrs. Bostock asking their customers to suspend the use of the glucose pending further investigations, and on Nov. 30th they sent a further circular asking for the return of sugars which their customers held. The source of the arsenic was subsequently shown to have been sulphuric acid supplied by Messrs. Nicholson and Sons of Leeds, in circumstances which no doubt had come before the Commission. Whilst glucose made from this poisonous sulphuric acid was by far the most important source of the arsenic in beer, arsenic in small quantity and derived from the coke or coal used in the kiln was found in malt, and traces of it were found in the beer made from this malt. The quantity, however, was unimportant in comparison with that in the glucose. The quantity in the glucose was estimated by the analysts to be 4½ grains to the pound in one sample and 9½th grains to the pound in another sample. The first sample would, the analysts estimated, represent from one-third of a grain to one grain of arsenic per gallon of beer, and the second presumably more than double those amounts. It had been stated in view of minute traces of arsenic being found in malt and elsewhere that a minimum permissible quantity of arsenic should be legalised. It would be well to remember, however, that even assuming that one-fiftieth or one-hundredth part of a grain in a gallon would do no immediate harm, yet fortunately it was the exception to find any arsenic present, and there was no necessity therefore that there should be any, and he believed that it would be a fatal mistake in more senses than one to permit the presence of any amount, however small, of so poisonous a material as arsenic. It, therefore, was well established that exceptional sickness and death had been due in Liverpool to arsenic in beer, but no arsenic had been found in any other article of food or drink whatever. It was also shown that the arsenic did find its way into the beer by means of glucose, in the preparation of which sulphuric acid containing arsenic was used, and it also appeared that in the process of drying malt might become contaminated with arsenic in minute quantities. The inference was, therefore, that the fewer articles used in the manufacture of beer the better, since each one might possibly become contaminated. In any case there could be no objection to the brewers making known in the public interests the materials from which their beer was manufactured, a knowledge which would give the public the option of selecting beer made from ingredients which they might consider the most wholesome and least liable to contamination. The following facts were plain, viz.:—

1. That a poisonous arsenical acid was supplied in the manufacture of a material used in making beer.

2. That that acid, which in any case might be suspected, was received and used in the manufacture of glucose without being tested or examined in any way for arsenic.

3. That that glucose in its turn was used by brewers for the manufacture of beer without examination of any kind for arsenic, and the beer so distributed was the cause of illness, maiming, and death.

Hence it was imperative that a strict supervision should be exercised over all the material used in the manufacture of beer.

Brewers supplying either retailers, licensees, or managers of public-houses with beer, should send with the beer a warranty showing the materials employed in its manufacture and guaranteeing the purity of each.

Evidence of Mr. A. G. Salamon.

Mr. ALFRED GORDON SALAMON, a Vice-President of the Society of Chemical Industry and member of the Council of the Institute of Chemistry, was the next witness to give evidence. He explained that he had had 17 years' practical experience of the technology of brewing and had been largely employed by the brewers throughout the country to advise them as to the best materials to employ for arriving at satisfactory fermentation. On Nov. 17th he received a letter from Mr. James G. Groves, M.P., of Messrs. Groves and Whitnall, Limited, Regent-road Brewery, Salford, saying that he had sent on samples of his own and other local beers for analysis in order to test the type of alcohol present in them. In a letter received on Nov. 20th Mr. Groves said he wished to know whether any of the samples showed traces of an irritant poisoning such as lead or arsenic. After receiving this letter he and another witness proceeded to test for arsenic and found that several of the samples contained it, not only in traces, but in notable quantities. Witness then described in detail the action taken by himself and other experts at the instance of the Manchester Brewers' Association. Having done so he said that on Nov. 29th he received from Mr. C. H. Tattersall 15 samples of raw materials which were being employed by Messrs. Bostock at the time of Mr. Tattersall's visit in the manufacture of glucose and invert sugar and also of the finished products as they were being sent to the brewers. Careful analysis of these samples gave the following results: sulphurous acid free from arsenic, sago flower free from arsenic, tapioca flower free from arsenic, whiting free from arsenic, cane sugar free from arsenic, glucose grossly contaminated with arsenic, invert sugar grossly contaminated with arsenic, four more samples of glucose grossly contaminated with arsenic, invert sugar grossly contaminated with arsenic, maize meal free from arsenic, glucose grossly contaminated, and sulphuric acid very dangerously loaded with arsenic. He had made a quantitative estimation of the arsenic in these samples and as a result he had no hesitation in saying that having regard to the statement of the medical authorities as to the quantities necessary to produce a toxic effect the brewing sugars when used in normal quantity in the production of beer would be dangerously poisonous. In the opinion of witness the employment of the poisonous sulphuric acid fully accounted for the results disclosed. He found to his surprise that in no single case was Bostock's sugar alone employed. It would appear to be the custom in Manchester to employ two and sometimes three different makes of brewing sugar, both glucose and invert sugar, and that sometimes in the same brew. But for this custom the amount of poisonous beer brewed during the epidemic would have been far greater in certain breweries even than had been the case. The custom permitted witness to compare the price paid for Bostock's sugar with that paid to other makers, and he was in a position positively to assert, after examination of hundreds of invoices which were freely placed at his disposal by the Manchester brewers, that the Bostock sugar was not in any way cheaper nor were the conditions of payment more favourable to the brewer than that of the other and best makes upon the market. An inspection of the various sugars, both glucose and invert, made it impossible to distinguish the different makes, and those of Messrs. Bostock were of extremely good appearance. Indeed, no suspicion could attach to the appearance of the Bostock sugars. Witness was in a position to assert that the arsenical contamination of beers in poisonous quantities in Manchester and its district was absolutely at an end, and the result of his investigations proved without any doubt whatever that it was solely occasioned by the use of Bostock's sugars. In the course of the inquiry of the commission of experts the presence of traces of arsenic in malt and other brewing materials had become manifest. This commission found it necessary to fully investigate this question of traces, which was distinct from that of poisonous contamination; the work involved had been very great and was not yet complete, and, therefore, witness asked that his evidence on this point might be deferred. In the course of cross-examination Mr. Salamon said that there was no difficulty in ridding malt of all arsenic. When asked by Sir William Church whether he had formed any opinion as to what should be considered a negligible quantity of arsenic in beer he replied that he should rather say "none at all." It was quite feasible for the brewer to brew beer which contained no arsenic whatever, and as a matter of fact the bulk of the beer made in England did not contain a trace of arsenic.

The Commission then adjourned.

THURSDAY, MARCH 7TH.

There was another meeting of the Commission on March 7th, at the same place, Lord KELVIN again presiding.

Mr. Salamon further Examined.

Mr. SALAMON presented himself for further examination, and in reply to Professor THORPE said that his inquiries had not gone far enough to enable him to form an opinion on the point whether there was any connexion between neuritis and the higher alcohols. He had been associated with the analysis of beer for many years, and until this outbreak he had never tested samples of beer for arsenic simply because the idea had never occurred to him. He had looked for selenium in materials sent to him, but he was not yet in a position to give evidence on the subject. He had not completed a quantitative determination. As far as he had gone he had only been able to determine the presence of minute traces in certain substances, but he would not even like to say to-day that it was selenium. He had not gone sufficiently far to speak with any certainty on the subject. He might say that at present he had not found selenium in beer.

In reply to the CHAIRMAN Mr. SALAMON gave the opinion that the risk of arsenic in malt could be avoided by abstinence from the use of gas coke in the process of kilning and by employment of anthracite.

Evidence of Mr. J. G. Groves.

Mr. JAMES G. GROVES, M.P., chairman and managing director of Messrs. Groves and Whitnall, brewers at Salford and Manchester, examined by the CHAIRMAN, said that the scope of their business was principally confined to Manchester and Salford and their output was considerably the largest in these two towns. Until November last he had no reason whatever to doubt the purity of their beers. On the 12th of that month Mr. R. D. Cran, one of the district medical officers of Salford, called upon him with reference to the amount of sickness in his district. Mr. Cran described the sickness as alcoholic neuritis and said it was "alarming and there were many deaths traceable to it"; he considered that the illness was principally localised amongst the drinkers of beer and his theory was that it was due to some of the higher alcohols. Witness suggested that this was more indicative of spirit- than beer-drinking, but Mr. Cran replied that the evidence very strongly pointed to beer-drinkers and not spirit-drinkers, although the mischief might be assisted by the consumption of spirits. On the 24th he called upon Dr. Miller, Ph.D., F.I.C., F.C.S., and engaged him to examine all their beers in stock as well as brewing materials and all brews before delivery. From that moment they did not send out any beer which had not been analysed and certified by Dr. Miller. They took every precaution to stop the sale of the beer in the hands of their customers until they had been able to have samples of it analysed. The beer in customers' hands of all brews that were not certified free from arsenic they either turned into the sewers or brought back to the brewery to be destroyed. Altogether the contents of many thousands of barrels were destroyed, the value of the beer and stout thus dealt with being not less than £15,000. They also took every precaution with regard to having the brewery plant thoroughly purified and examined to see that there was no remaining contamination. Mr. Salamon had examined their plant and taken shavings from the insides of their casks, which after analysis he reported to be free from any trace of arsenic. Since Nov. 26th a copy certificate of purity had been attached to each barrel of beer and stout sent out from their breweries. It was in these terms: "I certify the purity of the brew of beer from which this cask is filled," and was signed by Dr. Miller. The form was submitted to the special sub-committee of the Manchester Brewers' Central Association who approved it and recommended it for general adoption. He might say that Bostock's was the only sugar in which they had discovered arsenic. For some time previous to August, 1900, they had not used Bostock's glucose, but that of other manufacturers. The firm with whom they were then dealing being very busy asked them to suspend their orders and they did so to oblige them, and in consequence they commenced again to use Bostock's glucose. Bostock's invert was only used for priming. Since discarding Bostock's sugar they had required certificates of purity to be furnished to them of all materials used in brewing and they had conducted careful and minute analyses themselves. Early in December, Mr. Estcourt, the public analyst for Manchester, publicly reported traces of arsenic in malt; this caused his firm to submit samples to him and to Dr. Miller and from that time they had discarded doubtful samples and brewed only from those certified safe. They had found that malts cured with ordinary gas coke were generally contaminated and those with anthracite coal were free or practically so. Brushing and polishing the malt made a great improvement and was in his opinion a necessary safeguard. They required this to be done with all their malts and they insisted on a guarantee of purity from the malsters with each consignment. So far as sugar was concerned, his opinion was that the danger in their beers ceased absolutely on Nov. 23rd with the discontinuance of the Messrs Bostock's materials. During 1900 the consumption of Bostock's glucose as compared with the other glucoses used was 8 per cent. of the total, and almost the whole of that consumption took place during the two and three months between August and November. The amount of invert used for priming was between one and a half and two pounds per barrel.

By Sir WILLIAM HART DYKE: So far as his knowledge went he should say without hesitation that the exceptional sickness and death had been due entirely to the use of Bostock's sugars. He should say that the small traces of arsenic found in malt would not be detrimental to the public health. His firm got associated with this arsenic scare at a very early stage and the public at the first jumped to the conclusion that theirs was the only beer contaminated. It took a long time to eradicate a misconception of this kind and in this way his firm had suffered much more than they deserved. The inquiries that had taken place had opened the eyes of the scientific world to facts not previously recognised, and his firm and the brewing trade generally were alive to the lessons to be learned and he hoped were profiting by them. He believed that the brewers in their own interest would take such precautions as would prevent the possibility of such a misfortune recurring, even if Parliament took no action. What had taken place had created a new situation and in the future no brewer would be able to shelter himself under the excuse of carelessness, or want of knowledge.

By Sir WILLIAM CHURCH: Before Mr. Cran called upon him he had seen Dr. Forsyth the club doctor, who had pointed out that more than the average number of the brewery employés were "off" with a form of influenza, but it did not occur to witness that the illness was due to anything in the beer. The employés were allowed three pints of light beer per day, but of course the outside men who delivered the beer to customers would drink more than that quantity in the course of a day, for it was the habit of customers to treat them. His firm had experienced no difficulty in getting certificates of purity from the sugar-makers. The maltsters were somewhat alarmed at first and some of them hesitated, but the firm insisted on the certificates as a condition of custom and they got them. The guarantee was that the material should be free from contamination by arsenic or other deleterious substance.

By Professor THORPE: The certificate of purity issued by Dr. Miller was a warranty to the firm and they passed it on to the customer, not with the idea of getting rid of any responsibility in the matter, but of assuring the customer that the firm had got the best expert assistance.

On the conclusion of his evidence Mr. Groves was congratulated by the CHAIRMAN on the promptness and thoroughness of the action he had taken and on its success.

Evidence of Mr. E. W. T. Jones.

Mr. E. W. T. JONES, F.I.C., public analyst for the county of Stafford and the boroughs of Wolverhampton, Walsall, Kidderminster, and Newcastle-under-Lyne, was next examined. In the course of his evidence he said that since the beginning of December last he had tested about 300 samples of beer, representing about 100 brewers, including about 30 home brewers. 26 samples were arsenical to the extent of from one-sixtieth to just over half a grain per gallon, calculated as arsenious oxide. 33 samples contained arsenic computed to be well under one-twentieth of a grain per gallon. Of these, 15 were from one brewer who had discontinued the use of Bostock's glucose, and in this case the arsenic found had now been proved to be due to arsenical malt. The cause of the slight amount of arsenic in the other 18 samples he had had no means of investigating, but he believed Bostock sugar had been used by all these brewers. None of the home-brewed beers were arsenical. He had tested 13 samples of malts, eight of which were from one maltster. Three were decidedly arsenical, containing from one-fortieth to one-fiftieth of a grain of arsenious oxide per pound. The remaining five were slightly arsenical, containing apparently less than one-one-hundredth of a grain per pound. Five other samples from three maltsters were free from arsenic. He had found malt made with a certain fuel decidedly arsenical. This fuel was a certain Yorkshire gas coke. He had no analytical experience as to the fuel itself. He had not examined any of the coals and coke in that district for arsenic, but he concluded indirectly that they were not arsenical to any important extent, as he had found no malt arsenical which had been made in that district. He had not had any arsenical beer into the composition of which Bostock sugar had not entered, except in one instance, and that was where the malt was prepared from Yorkshire gas coke. He had tested 22 brewing sugars, representing about eight different makes, and in no case had he detected arsenic except in Bostock's sugar, of which he had had two samples. One contained 0·023 per cent., and the other 0·021 per cent. of arsenious oxide, say, one-tenth of a grain per ounce. A sample of Bostock glucose sent to him privately contained 0·05 per cent. of arsenious oxide. He had tested two samples of cane sugar as used in brewing and both were free from arsenic. 25 samples of treacle and golden syrup were tested, all of which were found free from arsenic. Some were adulterated with starch glucose syrup. He tested 17 samples of jams, marmalade, and mincemeat, and found them all free from arsenic. 27 samples of confectionery were tested, and all were found free from arsenic. He tested two samples of bisulphide of lime, one of sulphurous acid, and one of finings; all were free from arsenic. His method for testing arsenic in beer was practically the same as that recommended by the experts of the Manchester Brewers' Association. He had satisfied himself that by this test he should not pass beer containing more than one-twentieth of a grain per gallon and possibly should exclude beer containing a smaller quantity than one-twentieth.

In reply to Sir WILLIAM CHURCH witness said that when beer was submitted to him under the provisions of the Sale of Food and Drugs Acts he had looked for salt and sulphuric acid but not for arsenic, but when the Chairman questioned him as to the desirability of legislation directed against poison as well as mere adulteration Mr. Jones expressed the view that the field would be too wide for such legislation.

The Commission adjourned until Wednesday, March 13th.

BOOKS, ETC., RECEIVED.

AMERICAN MEDICAL ASSOCIATION PRESS, Chicago.

Medico-Surgical Aspects of the Spanish-American War. By Lieutenant-Colonel Dr. Nicholas Senn. Price not stated.

AMERICAN ORTHOPEDIC ASSOCIATION, Philadelphia.

Transactions of the Fourteenth Session of the American Orthopedic Association. Price not stated.

BEMROSE AND SONS, Old Bailey, London.

Mentone as a Health and Pleasure Resort. By D. W. Samways, M.A., M.D., B.C., &c. Price 3*s.* 6*d.*

BROADBENT, ALBERT, Manchester, S.E.

Science in the Daily Meal. Second edition. Price 3*d.* Also Fruits, Nuts, and Vegetables; their Uses as Food and Medicine. Price 6*d.* Both by Albert Broadbent, F.R.H.S.

CASSELL AND COMPANY, London.

Oral Sepsis as a Cause of "Septic Gastritis," "Toxic Neuritis," and other Septic Conditions. By William Hunter, M.D., F.R.C.P. Price 3*s.* 6*d.*

CHICAGO MEDICAL PRESS Co., State-street, Chicago.
A Systematic Treatise on Materia Medica and Therapeutics, with Reference to the Most Direct Action of Drugs. By Finley Ellingwood, M.D. Price $5.

CHURCHILL, J. & A., Great Marlborough-street, London.
Chloroform: A Manual for Students and Practitioners. By Edward Lawrie, M.B.Edin., M.R.C.S. Eng. Price 5s. net.

DORNAN, W. J., Philadelphia.
Transactions of the American Gynecological Society for the Year 1900. Price not stated.

EVERETT AND Co., Essex-street, Strand, London.
Dopes. A Criticism of American Arts and English Efforts. By "Nathaniel Gubbins." Price 1s. net.

FANNIN AND Co., Grafton-street, Dublin.
Transactions of the Royal Academy of Medicine in Ireland. Vol. xviii. Edited by John B. Story, M.B., F.R.C.S. Price not stated.

FOWLER AND Co., Ludgate-circus, London.
The Revised Twentieth Century Phrenology. By J. W. Taylor Price 3s. 6d.

GUTENBERG PRESS, Fleet-street, London.
What to Eat and Drink. By Charles Hyatt-Woolf. Price 1s.

HÖLDER, ALFRED, Wien.
Specielle Pathologie und Therapie: Die Lepra. By Dr. Victor Babes. Price 10 marks 60 pfennige.
Specielle Pathologie und Therapie: Die Pellagra. By Dr. Victor Babes and Dr. V. Sion. Price 3 marks 60 pfennige.

LEWIS, H. K., Gower-street, London.
Diseases of the Nose and Throat. By F. de Havilland Hall, M.D., F.R.C.P. Lond., and Herbert Tilley, M.D., B.S. Lond., F.R.C.S. Eng. Second edition. Price 10s. 6d.

LIBRAIRIE OCTAVE DOIN, Place de l'Odéon, Paris.
Affections Chirurgicales du Tronc: Mamelles Organes Génitaux de la Femme. By Dr. Polaillon. Price not stated.

LIPPINCOTT COMPANY, Southampton-street, Strand, London.
Diseases of the Nervous System. By H. Oppenheim, M.D. Translated by Edward E. Mayer, A.M., M.D. Price 21s. net.
A Clinical Treatise on Fractures. By William Barton Hopkins, M.D. Price 18s. net.

LONGMANS, GREEN, AND Co., Paternoster-row, London.
Ballast: a Novel. By Myra Swan. Price 6s.
The Annual Charities Register and Digest for 1901. With an Introduction by C. S. Loch. Price 4s.

MALOINE, A., Rue de l'École de Médecine, Paris.
La Peste d'Alexandrie en 1899. Par le Dr. A. Valassopoulo. Price not stated.

MEGGY, THOMPSON AND Co., High-street, Chelmsford.
Report on the Water-supply of the County of Essex. By John C. Thresh, D.Sc. Lond., M.D. Vic., D.P.H. Camb. Price 3s. 6d.

REBMAN, LIMITED, Shaftesbury-avenue, London.
A Text-Book of Pharmacology and Therapeutics. By Arthur R. Cushny, M.A., M.D. Aberd. Second edition, revised and enlarged. Price 17s. 6d. net.
The Medical Examination for Life Insurance and its Associated Clinical Methods. By Charles Lyman Greene, M.D. Price 17s. net.
Text-Book of Histology, including the Microscopic Technic. By Dr. Philipp Stöhr. Translated by Dr. Emma L. Bilstein. Edited by Dr. Alfred Schaper. Price 14s. net.

SAUNDERS AND Co., Strand, London.
Obstetric and Gynecological Nursing. By Edward P. Davis, A.M., M.D. Price 8s. net.
Saunders' Year Book of Medicine and Surgery. In two vols. Edited by George M. Gould, M.D. Price 26s. net.
The Treatment of Fractures. By Charles Locke Scudder, M.D., and Frederic J. Cotton, M.D. Second edition. Price 19s.
Practical Points in Nursing for Nurses in Private Practice. By Emily A. M. Stoney. Second edition. Price 7s. 6d. net.

SMITH, ELDER, AND Co., Waterloo-place, London.
An Index of Symptoms as a Clue to Diagnosis. By Ralph Winnington Leftwich, M.D. Second edition. Price 6s.

SIMPKIN, MARSHALL, AND Co., London.
The "A 1" Cookery Book. By H. N. L. Price 2s. 6d.

TEUBNER, B. G., Leipzig.
Die Moderne Heilwissenschaft, Wesen und Grenzen des Ärztlichen Wissens. Von Dr. Edmund Biernacki. Autorisierte Uebersetzung von Dr. S. Ebel. Price 1 mark 25 pfennige.

WHITAKER AND SONS, Warwick-lane, E.C.
Whitaker's Peerage for the year 1901. Price 2s. 6d.

WILSON, EFFINGHAM, Royal Exchange, London.
The Law of Joint-Stock Companies, with Directions for Forming a Company. By James Walter Smith, LL.D. 26th Thousand. Price 2s. net.
A Handy Book on the Law of Bills, Cheques, Notes, and I.O.U.'s. By James Walter Smith, Esq., LL.D., B.A., Barrister-at-law. Sixty-third Thousand. Price 1s. 6d. net.
Dictionary of Stock Exchange Terms. By W. G. Cordingley. Price 2s. 6d. net.

WRIGHT AND Co., Stone-bridge, Bristol.
The Medical Annual: a Year Book of Treatment and Practitioner's Index for 1901. Price 7s. 6d. net.
Sidmouth as a Health Resort and a Place of Residence. By A. Macindoe, M.D., D.P.H. Price 1s.
"First Aid" to the Injured and Sick. An Ambulance Handbook. By F. J. Warwick, B.A., M.B. Cantab., M.R.C.S., L.S.A., and A. C. Tunstall, M.D., F.R.C.S. Ed. Price 2s. 6d.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ALFORD, CHARLES EDWARD, M.R.C.S., L.S.A., has been re-appointed District Medical Officer by the Chard Board of Guardians.

ALLEN, W. T. D., M.B., B.Ch. Irel., has been appointed District Medical Officer of the Union, Liverpool.

BASSETT, W. F., M.R.C.S., L.S.A. Lond, has been appointed Deputy Licensing Magistrate for the District of Bathurst, New South Wales.

BLICK, GRAHAM T. B., L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer at Broome, West Australia.

BULTKEL, C. E., M.R.C.S., L.R.C.P., has been appointed Assistant House Physician at King's College Hospital, London.

CALLAN, P., L.K.Q.C.P., L.R.C.S. Irel., has been appointed Public Vaccinator for the District of Thames, New Zealand.

CARLÉ, F. C., M.R.C.S., L.R.C.P., has been appointed House Surgeon at King's College Hospital, London.

CLEMONS, G. E., M.D. Edin., has been appointed Honorary Medical Officer to the Launceston General Hospital, Tasmania.

COOKE, R. S., M.R.C.S., L.R.C.P., has been appointed House Surgeon at King's College Hospital, London.

COOPER, CHARLES EDWARD, B.A., M.B., B.C. Cantab., has been re-appointed Medical Officer of Health for the Ivybridge (Devon) District by the Ivybridge Urban District Council.

DALBY, AUGUSTUS WILLIAM, L.R.C.P., L.R.C.S. Edin., has been re-appointed Medical Officer of Health for the Frome Rural District Council.

DUNLOP, THOMAS, M.B., C.M. Edin., D.P.H. Camb., has been re-appointed Medical Officer of Health to the Aldershot Urban District.

EATON, OLIVER, L.R.C.P. Lond., M.R.C.S., D.P.H. Cantab., has been appointed Medical Officer to the Exeter Port Sanitary Authority.

EDMUNDS, A., M.R.C.S., L.R.C.P., has been appointed House Surgeon at King's College Hospital, London.

FLOOD, RICHARD F., L.R.C.P. Edin., L.R.C.S. Edin., L.M., &c., has been appointed House Surgeon to the West Herts Infirmary, Hemel Hempstead.

GOODING, MATTHEW RICHARD, L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer to the Barnstaple Port Sanitary Authority.

HAYDON, ARTHUR GEORGE, M.B., M.R.C.S., has been appointed a Civil Surgeon, Royal Army Medical Corps, and Medical Officer in charge of the Norfolk Regiment.

HOLMES, L. S., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Honorary Medical Officer to the Launceston General Hospital, Tasmania.

JEFFERISS, F. B., M.R.C.S., L.R.C.P., has been appointed Senior House Physician at King's College Hospital, London.

KELLY, W. A., L.K.Q.C.P., L.R.C.S. Irel, has been appointed Government Medical Officer at Wingham, New South Wales.

KENDALL, BERNARD CHARLES, L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer to the Helston (Cornwall) Public Dispensary.

LANDER, FRANCIS J., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Surgeon to the Nottingham General Dispensary.

LIDDELL, G., M.B., M.S. Edin., has been appointed Public Vaccinator for the District of Otepopo, New Zealand.

LITTLEJOHN, E. S., M.D. Edin., has been appointed Visiting Medical Officer, Thomas Walker Convalescent Hospital, Concord, New South Wales.

MACBIRNIE, S., M.B., Ch.M. Glasg., has been appointed Medical Superintendent to the Yarra Bend Lunatic Asylum, Victoria, Australia.

MCCLEARY, G. F., B.A., M.B., D.P.H. Cantab., has been appointed Medical Officer of Health for the Metropolitan Borough of Battersea.

MARTIN, JAMES PIRIE, M.R.C.S., L.R.C.P. Lond., has been appointed Public Vaccinator for the Box District by the Chippenham Board of Guardians, vice J. A. Mulville Thomson, resigned.

MAXWELL, W. W., M.R.C.S., L.R.C.P., has been appointed Assistant House Accoucheur at King's College Hospital, London.

MUNDEN, CHARLES, M.R.C.S., L.S.A., has been re-appointed District Medical Officer by the Chard Board of Guardians.

PARDEY, JAMES MCIMERY, M.B., Ch.B. Melb., has been appointed Honorary Medical Officer to the Launceston General Hospital, Tasmania.

PARKER, CHARLES, M.B., Ch M. Edin., has been appointed Honorary Medical Officer to the Launceston General Hospital, Tasmania.

PATTON, A. S., M.D. Dub., has been appointed Surgeon to the Normanton Hospital, Queensland.

RICHARDSON, RICHARD TIPPETTS, M.R.C.S., L.S.A. Lond., has been re-appointed Medical Officer of Health for the Trowbridge (Wilts) Urban District Council.

ROE, JAMES M., M.B. Syd., has been appointed Surgeon to the Hospital at Mareeba, Queensland.

SAUNDERS, E. M., M.R.C.S., L.R.C.P., has been appointed House Accoucheur at King's College Hospital, London.

SHAND, J. C., M.B. Glasg., has been appointed Government Medical Officer at Penrith, New South Wales.

SHORTER, H. L. A., M.B., M.Ch. Syd., has been appointed Medical Officer at Mount Garnet, Queensland.

SLEIGH, H. P., M.B., C.M. Aberd., has been appointed House Physician to the General Infirmary at Leeds.

STEVENS, A. N., L.R.C.P. Lond., M.R.C.S., has been appointed Resident Medical Officer to the Royal Boscombe and West Hants Hospital.

STEVENS, W. W., M.B., Ch.M. Syd., has been appointed Junior Medical Officer in the Lunacy Department, New South Wales.

STUART, W. L., M.R.C.S., L.R.C.P., has been appointed Junior House Physician at King's College Hospital, London.

TAYLOR, C. J., M.B. Syd., has been appointed Medical Officer at Georgetown, Queensland.

TRAVERS, FREDERICK T., M.B., B.S. Lond., F.R.C.S.E., has been appointed an Honorary Surgeon to the West Kent General Hospital, Maidstone.

WADE, REGINALD, M.R.C.S., L.S.A. Lond., has been re-appointed Medical Officer of Health for the Highbridge (Somerset) Urban District Council.

WEARNE, WALTER, M.R.C.S., L.S.A., has been re-appointed Medical Officer to the Helston (Cornwall) Public Dispensary.

WEBBER, W. WOOLMINGTON, L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer for the Crewkerne District of the Chard Union.

WILLIAMS, T. K., L.R.C.P. Lond., M.R.C.S., has been appointed Resident Medical Officer to the Dudley Dispensary.

WYNNE, W. C. P., L.R.C.P., L.R.C.S. Irel., has been appointed Certifying Surgeon under the Factory Acts for the Oxted District of Surrey.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BOROUGH HOSPITAL, BIRKENHEAD.—Senior and also Junior Resident House Surgeon. Salary £100 and £80 respectively per annum, with board and washing.

BOROUGH HOSPITAL, Bootle, Liverpool.—Junior Resident. Salary £80 per annum, with board, &c.

BRISTOL GENERAL HOSPITAL.—Assistant House and a Casualty House Surgeon. Salary £50 per annum, with board, residence, &c.

CHELSEA, BROMPTON, and BELGRAVE DISPENSARY, 41, Sloane-square, S.W.—Honorary Physician.

CHORLTON-UPON-MEDLOCK DISPENSARY, Manchester.—Resident House Surgeon, unmarried. Salary £130 per annum, with furnished rooms and attendance. Also Honorary Medical Officer.

CITY FEVER HOSPITAL, Lodge-road, Birmingham.—Assistant Medical Officer. Salary £120 per annum, with board, residence, &c.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park.—Physician to the out-patients. Also Second House Physician for six months. Salary at the rate of £30 per annum, with board and residence.

DERBYSHIRE ROYAL INFIRMARY, Derby.—Assistant House Surgeon for six months. Salary £30, with board, residence, and washing.

EAST SUFFOLK AND IPSWICH HOSPITAL.—Two House Surgeons, unmarried. Salaries £110 for Senior and £80 for Second House Surgeon, with board, lodging, and washing.

GENERAL HOSPITAL, Birmingham.—Resident Surgical Officer. Salary £100 per annum, with residence, board, and washing.

GREAT NORTHERN CENTRAL HOSPITAL.—Junior House Surgeon for six months. Salary at the rate of £30 per annum, with board, lodging, and washing.

GUEST HOSPITAL, Dudley.—Senior Resident Medical Officer. Salary £100 per annum, increasing to £120, with board, residence, attendance, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months, with honorarium of £25.

HOSPITAL FOR WOMEN, Soho-square.—Clinical Assistants. Also House Physician for six months. Salary £30.

HULME DISPENSARY, Stretford-road, Manchester.—House Surgeon. Salary £150 per annum, with apartments, attendance, coal, and gas.

ISLE OF WIGHT UNION WORKHOUSE.—Medical Officer. Salary £90 per annum.

JESSOP HOSPITAL FOR WOMEN, Sheffield.—House Surgeon, unmarried. Salary £50 per annum, with board, lodging, and washing.

KING'S COLLEGE HOSPITAL, Lincoln's Inn-fields, W.C.—Clinical Pathologist.

LONDON HOSPITAL, Whitechapel, E.—Surgical Registrar. Salary £100 per annum.

LONDON LOCK HOSPITAL, Harrow-road, W.—Anæsthetist to the Female Hospital.

LONDON OPEN-AIR SANATORIUM, Pinewood, near Bracknell, Berkshire.—Resident Physician, unmarried. Salary £200, with furnished apartments, board, attendance, and washing.

LUNATIC ASYLUM, Isle of Man.—Assistant Medical Officer. Salary £100 per annum, with apartments, washing, and board.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence.

MANCHESTER CHILDREN'S HOSPITAL.—Junior Resident Medical Officer, unmarried, for six months, eligible for election as Senior for another six months. Salary at rate of £80 a year as Junior and £100 a year as Senior, with board and lodging.

MANCHESTER PORT SANITARY AUTHORITY.—Port Medical Officer. Salary £350 per annum.

MANCHESTER ROYAL INFIRMARY.—Resident Surgical Officer, unmarried. Salary £150 per annum, with board and residence. Also Assistant Director in the Clinical Laboratory. Salary £50 per annum.

METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL, Grafton-street, Fitzroy-square, W.—Anæsthetist.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Soho-square, W.—Resident Medical Officer for six months. Salary at the rate of £40 per annum, with board and laundry.

NORFOLK AND NORWICH HOSPITAL.—House Physician for two years. Salary £80 per annum, with board, residence, &c.

NORTHAMPTON GENERAL INFIRMARY.—Physician, not under twenty-five years of age.

NORTH LONDON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Clinical Assistant for six months. Honorarium at the rate of £35 per annum.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Dental Surgeon.

PATHOLOGICAL DEPARTMENT YORKSHIRE COLLEGE, Leeds.—Junior Demonstrator. Salary £120.

PENGE URBAN DISTRICT.—Medical Officer of Health. Salary £100 per annum.

PRESTON ROYAL INFIRMARY.—Junior and also Assistant House Surgeon. Salaries £80 and £60 per annum respectively, with board, lodging, and washing, &c.

ROTHERHAM HOSPITAL.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and washing.

ROYAL ALBERT HOSPITAL, Devonport.—Resident Medical Officer, unmarried. Salary £110 per annum, with board and lodging.

ROYAL SEA BATHING HOSPITAL, Margate.—Assistant Resident Surgeon. Salary £60 per annum, with board and residence.

ROYAL SURREY COUNTY HOSPITAL, Guildford.—Resident House Surgeon. Salary £80, board, residence, and laundry.

RURAL DISTRICT COUNCILS OF EPSOM AND DORKING AND THE URBAN DISTRICT COUNCILS OF CARSHALTON, DORKING, EPSOM, AND LEATHERHEAD.—Medical Officer of Health.

ST. OLAVE'S UNION.—Dispenser of Medicines and Medical Officer's Clerk. Salary £90 per annum, rising to £110 per annum at the expiration of four years of service, with rations.

SOMERSET HOSPITAL, Cape Town.—Junior Resident Surgeon. Salary £150 per annum, rations and quarters.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary at rate of £24 per annum, with board, washing, and residence.

STROUD UNION.—District Medical Officer. Salary £74 per annum, with fees.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies for Certifying Surgeons under the Factory Acts at Rockcorry, in the County of Monaghan; at King's Lynn, in the County of Norfolk; and at Coleshill, in the County of Warwick.

THROAT HOSPITAL, Golden-square, W.—Non-resident House Surgeon. Salary £100 per annum, with lunch.

TOTTENHAM HOSPITAL.—Honorary Surgeon. Also Assistant Honorary Physician.

TUNBRIDGE WELLS GENERAL HOSPITAL.—Resident House Surgeon, unmarried. Salary £100 per annum, with board, furnished apartments, gas, firing, and attendance.

UNIVERSITY OF LONDON.—Examiners.

VICTORIA HOSPITAL FOR CHILDREN, Chelsea, S.W., and the VICTORIA CONVALESCENT HOME, Broadstairs.—House Physician for six months. Honorarium of £25, and board and lodging in the Hospital.

Births, Marriages, and Deaths.

BIRTHS.

BROWN.—On March 1st, at Museum-street, Ipswich, the wife of H. H. Brown, M.D., F.R.C.S., of a son.

EDWARDS.—On March 5th, at Halling, Rochester, the wife of Arthur Spencer Edwards, M.B., C.M. Edin., of a son.

MICHELS.—On March 10th, at Finsbury-square, E.C., the wife of E. Michels, M.D., F.R.C.S., of a son.

MURISON.—On March 5th, at Pier-road, Erith, Kent, the wife of W. R. Murison, L.R.C.P. & S. Edin., of a son.

WADE.—On March 6th, at Royal-terrace, Southend-on-Sea, the wife of Charles H. Wade, M.A. Oxon., L.R.C.P., M.R.C.S., of a daughter.

MARRIAGES.

CLARKE—BRYAN.—On March 6th, at Christ Church, Leicester, by the Rev. A. A. Isaacs, M.A., of Bath, assisted by the Rev. T. H. Austin, M.A., vicar of Queniborough, Charles Harold Clarke, M.B., B.S., of Northcote Villa, Uppingham-road, Leicester, third son of the Rev. Charles Clarke, B.A., of Ashby-de-la-Zouch, to Mary Louise, eldest daughter of C. F. Bryan, M.R.C.S., &c., Spa House, Leicester.

GILBERTSON-MCDOUGALL.—On March 9th, at Christ Church, Lancaster-gate, William Gilbertson, M.A., M.D., eldest son of Joseph Gilbertson, Evelyn-gardens, S.W., to Mabel Neal, daughter of Archibald McDougall, Orme-square, Kensington-gardens, W.

POWELL—PEACH.—On the 12th inst., at All Saints, Leavesden, Herts, by the Rev. Wilfrid Robinson, B.A., vicar of Tadcaster, assisted by the Rev. Arthur Wilson, M.A., vicar of the parish, Cecil Powell, M.A., M.B. (Cantab.), Calverton Lodge, Stony Stratford, youngest son of C. Bollard Powell, of Southborough, to Emily, youngest daughter of the late W. H. Peach, Waingroves Hall, Derbyshire.

WALKER—WALKER.—On the 9th inst., at Christ Church, Streatham-hill, Herbert John Walker, M.R.C.S., L.R.C.P., of the Priory, Springfield-road, Brighton, to Ethel Marion Walker, of 8, Telford-avenue, Streatham-hill.

DEATHS.

OTWAY.—On Wednesday, March 13th, at 1, Pepys-road, Raynes Park, near Wimbledon, of pneumonia, Henry Carrol Otway, M.R.C.S., L.R.C.P. Lond., youngest son of the late C. W. C. Otway F.R.C.S. Eng., aged 41 years.

SNOAD.—On March 6th, at Albion House, Aylestone-park, Leicester, Edward Hemings Snoad, M.R.C.S., L.S.A., aged 70 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

DISREPUTABLE ADVERTISEMENTS.

IN spite of the publicity given to the trade of "Dr." Davis by recent legal proceedings to which we have referred, and in spite of our having called attention to the nature of "Dr." Davis's Pills, "a Boon to Womankind," the *People* continues to insert the advertisements of "Dr." Davis. The editor, or advertisement editor, if there be such a functionary on the staff of the *People*, also thinks fit to affix the heading "Medical Books" to the following list which appears in the same column as "Dr." Davis's advertisement:—

MEDICAL BOOKS.

ARISTOTLE'S GREAT WORKS, 447 pages, 2*s.*, 465 pages, 2*s.* 6*d.*; coloured plates.—From T. P. Haines, Prospect-terrace, South Tottenham.

ON "NERVOUS DEBILITY" (so called) in MEN. By a SURGEON.—Published by Newnham and Cowell, 75, Chiswell-street, E.C. 1*s.*, post free.

WHAT EVERY WIFE AND MOTHER SHOULD KNOW.—Send 4 stamps to Leslie Martyn, Ltd., Medical Booksellers 34, Dalston-lane, London.

ARISTOTLE'S GREAT WORKS, 2*s.* plain, 2*s.* 6*d.* coloured plates; Wife's Handbook, 7*d.*; list post free.—From P. Harvey, 255, Kingsland-road, London.

THE WIFE'S HANDBOOK, by Dr. H. A. ALLBUTT, D.C.L., LL.D., post free, 7 stamps. Also THE HUSBAND'S HANDBOOK, post free. 8 stamps. Or the Two for 1*s.* 2*d.*, from T. P. REID, Discount Bookseller, West Green-road, London, N.

DR. FOOTE'S PLAIN HOME TALK. 1,248 pages, 400 illustrations, 18 coloured plates, 250 prescriptions; post free 8*s.* 6*d.*; prospectus free.—Leslie Martyn, Ltd., Medical Bookseller, 34, Dalston-lane, London.

Post Free Three Stamps.

A TREATISE on the Cure of Nervous and Physical Exhaustion in Men, Loss of Vital Power, and its accompanying diseases: their successful Cure by an entirely Original and Effective System of Treatment.—JAMES MURRAY, 7, Southampton-row, London, W.C.

We need hardly comment on the above except to point out once more that under the Indecent Advertisement Act of 1889 advertisements "relating to syphilis, gonorrhœa, nervous debility, or other complaint or infirmity arising from, or relating to, sexual intercourse" shall be deemed to be matter of an indecent nature if posted in a public place or in a public urinal, that their publication in a lay newspaper can hardly be claimed to be for the good of its readers, however profitable they may be to its proprietors and that there are many advertisements of this class, other than those we have cited, in the *People*.

"Dr." Davis still advertises in *Reynolds's Newspaper*, another weekly publication which as well as the *People* is read by the class of readers to whom such advertisements as those of "Dr." Davis are likely to appeal. *Reynolds's Newspaper*, however, inserts it in a slightly altered form and it appears as follows:—

FOR NEARLY 20 YEARS
DR. DAVIS'S FAMOUS PILLS
HAVE BEEN UNIVERSALLY ADMITTED TO BE A BOON TO WOMANKIND.

THEY are the best known remedy for Anæmia, Giddiness, Fulness and Swelling after Meals, Loss of appetite, Hysteria, Palpitation of the Heart, Debility, Depression, Weakness, &c. Boxes, 9½*d.*, 1*s.* 1½*d.*, 2*s.* 9*d.*, and 4*s.* 6*d.* To be obtained from Chemists and Patent Medicine Vendors everywhere, or direct from
DR. DAVIS,
309, Portobello-road, Notting Hill, London, W.

From this we may perhaps conclude that the persons who supervise the advertisements of *Reynolds's Newspaper* have some regard for the risks which they may incur at the hands of the law. The advertisements which accompany that of "Dr." Davis in the same page negative any idea that the modification is due to regard for decency, while they suggest the manner in which "Dr." Davis's pills claim to be a "boon to womankind." The advertisements we have quoted are from issues dated March 3rd, 1901.

"ALL THE DIFFERENCE BETWEEN A LAWYER AND DOCTOR."

A CORRESPONDENT writes:—Your opinion on the facts stated below is asked for my guidance and for that of the firm of solicitors in question. In the autumn of 1898 I received a letter from a firm of solicitors at a distance asking me to give evidence in a case which was expected to end in a divorce respecting injuries inflicted by a husband upon his wife. This letter necessitated a search through the books of a practice held by me two years before. At least four letters were written, copies of which I now have. The case ended by some compromise and the firm of solicitors did not inform me of this. Some months after, hearing by chance that the case had been settled out of court, I sent a statement of fee, one guinea, due to me for the letters, &c., which I had written. The solicitors now raise objection to paying me on grounds part of which must be quoted for your comment. It reads: "In fact, we think it is somewhat unusual to charge for correspondence from a medical man." Half my fee has been offered which has been declined.

*** Our correspondent incloses two letters from the firm of solicitors. The first runs as follows:—

X *v.* X.

DEAR SIRS,—We had no idea whatever that you were going to charge for the information given us in this matter, as if you were the account should have been sent in at once when the matter was closed.

We have now no funds whatever out of which to pay this £1 1*s.*, so must ask you to kindly abate the account.

In fact, we think it is somewhat unusual to charge for correspondence from a medical man.

Yours faithfully,
———.

The second runs as follows:—

SIR,—We are surprised that you are not willing to meet us in this matter as most professional men would meet one another in a loss.

Legally speaking, we do not consider that you are entitled to any charge for correspondence telling us what you did for a Patient for whom we inquired years since.

You are simply entitled to charge for physic and attendances.

This is all the difference between a Lawyer and Doctor.

However, as you are not prepared to meet us, rather than prolong correspondence we send you our cheque for £1 1*s.*

Yours truly,
———.

We have no hesitation in saying that the solicitors are completely wrong in every respect. They had no business to expect that help would be given to them gratuitously. They complain that the account was not sent in when the matter was closed and yet they omitted to tell our correspondent when that happy event occurred. They are surprised that our correspondent will not make them a present of a guinea; they consider that legally speaking he ought to work for them for nothing; and they finally arrive at the mystical conclusion that all the difference between a lawyer and a doctor is that the doctor is "simply entitled to charge for physic and attendances." Our correspondent's charge was a low one as well as a fair one and the solicitors did well to pay it. They would have done better to have paid it at once and gracefully.—ED. L.

OPHTHALMIC STUDY IN VIENNA.

To the Editors of THE LANCET.

SIRS,—I intend going to Vienna in April for some months to study the eye. Would anyone who has been there kindly let me know (1) if the eye clinics go on all summer; (2) the hours and fees; and (3) where one could apply for a list of respectable apartments. I suppose summer is a good time to go to Vienna?

I am, Sirs, yours faithfully,
March 12th, 1901. VIENNA.

THE PROFESSIONAL GUIDE TO A QUACK.

To the Editors of THE LANCET.

SIRS,—Can an obvious quack legally retain on his staff "a duly qualified and experienced physician," and by advertising in the book he publishes that all communications requiring medical advice are not only submitted to, but are also under the personal supervision of this individual, thus induce people to part with their money for his so-called "remedy"? What steps can be taken to discover the identity of this "duly qualified physician," so that such conduct (which looks to me very like "covering" or associating with a pernicious quack swindle) may be inquired into by the proper authorities? On the other hand, if it be proved that there is, as a matter of fact, no one connected with the concern I refer to entitled to use the description of "duly qualified physician" as represented, and that the medical advice, both personally and by letter, is given by a gentleman whose highest qualification is "patent medicine vendor," what, then, is the proper remedy to prevent the "specialist" in question from carrying on his fraud by inducing people to place confidence in him by these false statements? Is the mere visiting (every few weeks) of a man supposed to be struck off the Register (if ever he was qualified to be on it), and as a matter of form putting his name to certain papers, sufficient to justify the statements published and enable the quack to evade the law and carry on his swindle with impunity? The favour of your advice will greatly oblige as I am in a position to disclose such information and details concerning a quack firm which, if made public, would prevent people throwing their money away on rubbish (at the best acidulated coloured water) and being gulled into believing that they are getting qualified medical

advice when they are only the dupes of an ignorant quack or worse. If this is not a subject you can afford the time or trouble to take up and investigate, can you kindly suggest a likely quarter where the matter may receive the attention it deserves for the protection of the public and the profession.

I am, Sirs, yours faithfully,

March 6th, 1901. AVIS.

*** If our correspondent will forward to us the information and details to which he refers we shall be in a position to answer his questions.—ED. L.

"MEMORIAL TO THE LATE DR. ARCHIBALD HAMILTON JACOB."

SUBSCRIPTIONS will be thankfully acknowledged by the following committee:—Sir Christopher Nixon (President of the Royal College of Physicians of Ireland), Mr. Thomas Myles (President of the Royal College of Surgeons in Ireland), Sir John Banks, K.C.B., Sir John William Moore, Sir William Thomson, Sir W. Thornley Stoker, Sir Charles A. Cameron, C.B., Sir Francis R. Cruise, Mr. A. O. Speedy, Dr. Lombe Atthill, Mr. Henry Gray Croly, Mr. Henry Gregg Sherlock, Dr. Stewart Woodhouse (General Prisons Board), Mr. Austin Meldon, D.L., Dr. Henry W. Oulton, Dr. Richard J. Kinkead (Galway), Dr. George M. Foy, Mr. I. Usher, Dr. H. MacNaughton Jones, Mr. A. A. Tindall, and Dr. M. J. Malone.

Amount already announced in THE LANCET—£259 6*s.* 0*d.*

	£	*s.*	*d.*		£	*s.*	*d.*
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Mr. T. H. Croly	1	1	0	Mr. T. M. McEvoy... ...	1	0	0
Dr. E. J. Doyle	1	0	0	Mr. H. B. S. Montgomery	2	2	0
Mr. M. W. Fisher	1	1	0	Mr. R. T. Huston	1	0	0
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Dr. R. H. Woods	2	2	0	Mr. G. P. O'Beirne... ...	1	1	0
Mrs. Carroll	3	0	0	Mr. J. Connell...	0	10	0
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Mr. T. Moore	1	1	0	Mr. G. J. Goldie	2	2	0
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Mr. G. U. Macnamara ...	1	0	0				

Cheques and postal orders are to be made payable to the honorary treasurers (Sir Charles A. Cameron, C.B., 51, Pembroke-road, Dublin, and Mr. L. H. Ormsby, Vice-President of the Royal College of Surgeons in Ireland, 92, Merrion-square, Dublin), and crossed "Ulster Bank." The honorary secretary is Mr. George F. Blake, J.P., Registrar of the Royal College of Surgeons, Dublin.

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—Could you or any of your readers tell me of any private institution which would take and treat a severe attack of chorea?

I am, Sirs, yours faithfully,

W. LANGWORTHY BAKER, M.R.C.S. Eng., &c.

Moorcote, Eversley, Winchfield, March 10th, 1901.

AN ETHICAL POINT.

To the Editors of THE LANCET.

SIRS,—A has sold his practice to B. A was always looked upon as one of the "black sheep" by his low fees and other actions. B is following in his footsteps. C and D are the other medical men in the place and charge the ordinary fees of the district and are on the best of terms. B called on both on his taking over A's practice. C tried to persuade B to join with D and himself to form an ethical compact and fix fees, &c., and so work amicably together. B would not fall in with the proposal and is following on the same lines as his predecessor. C has not returned B's call and does not recognise B, nor did he A, professionally. D does by way of consultations and the like. Which of the two acts up to the recognised but unwritten laws of our profession? What would be the most feasible way to get each to a better understanding?

I am, Sirs, yours faithfully,

March 8th, 1901. GENERAL PRACTITIONER.

*** On the information laid before us in the above letter we should say that C's course of conduct is the better—that is to say, presuming that B acts unprofessionally in other ways than by lowering his fees.—ED. L.

"ARE THERE PINS WITH REMOVEABLE POINTS?"

To the Editors of THE LANCET.

SIRS,—In reply to a letter under the above heading in THE LANCET of March 2nd, p. 675, signed "Bandage," I do not think he will find pins "with removeable points," but why not remove the points himself with wire nippers? Such can be had in small size (as used by watch and clock makers) and if carried in the pocket will be always at hand when required. Better "see the point" than feel it.

I am, Sirs, yours faithfully,

March 11th, 1901. NIPPERS.

Jockey.—The resident within the district should not attempt to supersede the holder of the appointment without giving him notice of his intention.

L.R.C.P., L.R.C.S. is not recommended to apply for the post. See answer in our last issue to "A Subscriber to THE LANCET since 1886."

Centralisation.—When so many larger matters require to be dealt with we are not disposed to lay stress on the points.

Anxious.—We do not give medical advice. Our correspondent should consult his usual medical attendant.

Rusticus.—The dose of tuberculin for an average sized cow is three cubic centimetres—i.e., about 50 minims.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

WEDNESDAY (20th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (21st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

FRIDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

SATURDAY (23rd).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (18th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—9 P.M. Dr. J. Mitchell Bruce: Diseases and Disorders of the Heart and Arteries in Middle and Advanced Life. Lecture II.—General and Differential Diagnosis. General Pathology and Pathogeny. (Lettsomian Lectures.)

TUESDAY (19th).—PATHOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Dr. W. Bulloch: The Action of Lysogenic Sera.—Prof. Wright and Major Leishman: Observations on the Bactericidal Action of the Blood.—Mr. Seligmann: Filariasis in British New Guinea.

CHELSEA CLINICAL SOCIETY (Jenner Institute of Preventive Medicine, Grosvenor-road, Chelsea).—8.30 P.M. Annual Clinical Debate:—The Clinical and Pathological Relations of the Chronic Rheumatic and Rheumatoid Affections to Acute Infective Rheumatism. The following, amongst others, will take part in the debate: Dr. R. T. Hewlett, Mr. Arbuthnot Lane, Dr. Armstrong (Buxton), and Sir Dyce Duckworth (who will deliver the closing address).

ROYAL STATISTICAL SOCIETY (9, Adelphi-terrace, Strand, W.C.).—5 P.M. Paper:—Dr. J. F. J. Sykes: The Results of State, Municipal, and Organised Private Action on the Housing of the Working Classes in London and in other Large Cities in the United Kingdom. (Howard Medal Prize Essay.)

WEDNESDAY (20th).—ROYAL METEOROLOGICAL SOCIETY (Institution of Civil Engineers, Great George-street, S.W.).—7.30 P.M. Dr. H. R. Mill: Climate and the Effects of Climate (illustrated by lantern slides).

ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Mr. W. H. Merrett: Demonstration on the Metallography of Iron and Steel (with lantern illustrations).

THURSDAY (21st).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road, W.).—8.30 P.M. Clinical Evening.

NEUROLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Clinical Evening. Cases will be shown by Dr. F. E. Batten, Dr. Colman, Dr. Risien Russell, Dr. W. G. Harris, Dr. E. F. Buzzard, and others.

CHILDHOOD SOCIETY (Library of the Sanitary Institute, 72, Margaret-street, W.).—8 P.M. Dr. W. H. R. Rivers: Experimental Psychology and the Study of Childhood.

FRIDAY (22nd).—CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Continued Discussion on the Recent Epidemic of Typhoid Fever among the Troops in South Africa

ERRATUM.—We regret that in our issue of March 9th, in the Diary, the hour of meeting of the Society for the Study of Disease in Children on Friday 15th, was wrongly given as 6.30 P.M.; it should have been *5.30* P.M.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (18th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Prof. C. Stewart: The Protection and Nourishment of the Young of the Vertebrata, and some New Additions to the Museum.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. M. Morris: Consultation. (Skin.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. Ball: Some Common Throat Affections.

TUESDAY (19th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Sir W. Broadbent: Consultation. (Medical.)

THE BROWN ANIMAL SANATORY INSTITUTION (University of London, South Kensington, S.W.).—5 P.M. Dr. J. Rose Bradford (Professor-Superintendent): The Protozoa in their Relation to Disease, with especial reference to the so-called Tsetse-Fly Disease of South Africa.

WEDNESDAY (20th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Prof. C. Stewart: The Protection and Nourishment of the Young of the Vertebrata, and some New Additions to the Museum.

LONDON THROAT HOSPITAL (204, Great Portland-street, W.).—5 P.M. Mr. Waggett: Diseases of the Accessory Sinuses. (Post-Graduate Course.)

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. H. Mackenzie: Asthma.

THURSDAY (21st).—ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. J. F. Payne: On Cancer, especially of the Internal Organs. (Lumleian Lectures.)

LONDON TEMPERANCE HOSPITAL (Hampstead-road, N.W.).—2 P.M. Dr. S. Fenwick: Clinical Demonstration.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Consultation. (Surgical.)

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Voelcker: Demonstration of Whooping Cough and its Complications.

THE HOSPITAL FOR DISEASES OF THE SKIN (Stamford-street, Blackfriars).—3 P.M. Clinical Demonstration: Dr. P. S. Abraham.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. Bidwell: The Surgical Anatomy of the Stomach.

FRIDAY (22nd).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Prof. C. Stewart: The Protection and Nourishment of the Young of the Vertebrata, and some New Additions to the Museum.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. W. H. Work Dodd: Consultation. (Eye.)

LONDON TEMPERANCE HOSPITAL (Hampstead-road, N.W.).—2 P.M. Dr. P. Parkinson: Clinical and Pathological Demonstration.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Mar. 14th, 1901.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Mar. 8	29·66	N.	0·20	74	45	38	41	42	Cloudy
,, 9	30·24	N.E.	0·11	83	44	37	38	39	Cloudy
,, 10	30·21	N.E.	...	69	44	36	34	38	Cloudy
,, 11	29·90	N.E.	...	75	47	32	33	34	Overcast
,, 12	29·96	N.W.	...	65	54	34	41	42	Overcast
,, 13	30·09	N.E.	...	49	44	36	38	39	Overcast
,, 14	29·92	N.E.	...	63	45	38	40	40	Overcast

During the week marked copies of the following newspapers have been received:—*Lincoln Gazette, Manchester News, Express (Notts), Stafford Advertiser, Dundee Advertiser, Cardiff News, Preston Post, Burton Evening Gazette, Glasgow Herald, Weekly News (West Bromwich), Midland Evening News (Wolverhampton), Newcastle Chronicle, Liverpool Daily Post, Bournemouth Guardian, Derbyshire Courier, Greenock Herald, Bury Guardian, Sussex News, Spalding Free Press, Leeds Mercury, Cheltenham Press, Hyde Reporter, Derby Times, Ipswich Times, Kentish Express, Birmingham Gazette, Oxford Journal, Scotsman, Norwich Press, Builder, Architect, Citizen, Pioneer Mail, Bristol Mercury, Yorkshire Post, Hong-Kong Telegraph, Sydney Morning Herald, Siam Free Press, Madras Standard, Daily Gleaner, Blackpool Gazette, Limerick Chronicle, Brighton Gazette, Morecombe Telegraph, Bath Chronicle, Walton Gazette, Bombay Gazette, Dorset County Chronicle, Sanitary Record, Surrey Advertiser, Mining Journal, Local Government Chronicle, Local Government Journal, Reading Mercury, Hertfordshire Mercury, Consett Guardian, Fife Herald, Luton News, Hitchin Journal, Tunbridge Wells Advertiser, Journal of Horticulture, Inverness Courier, Evening Post and Bulletin (Wellington, Australia), Chicago Packer, Daily Chronicle, Express (Whitby), Kettering Guardian, Durham Mercury, League Journal, Barnsley Chronicle, Times of India, Shipley Express, Warwickshire Times, Bucks Herald, Clitheroe Advertiser, Lloyd's Rugby Advertiser, Kent and Sussex Advertiser, Jackson's Journal (Oxford), &c., &c.*

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1900, which was completed with the issue of Dec. 29th, and the Title-page to the Volume were given in THE LANCET of Jan. 5th.

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VOLUMES for the second half of the year 1900, bound in cloth, gilt lettered, price 18*s.*, carriage extra.

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H.—Dr. Hecht, Arad, Hungary; Mr. H. E. Hooper, Lond.; H. M.; Mr. J. Harthope, Belfast; Mr. R. G. Hann, Leeds; Dr. J. Hawkes, Shanklin.

I.—*Isle of Wight County Press*, Newport, Publisher of Dr. Arnold C. Ingle, Cambridge.

J.—Jessop Hospital for Women, Secretary of; Jackson County Medical Society, Librarian of; *Journal of Balneology*, Editor of; Mr. E. H. Jones, Birmingham; Mr. F. B. Jessett, Lond.

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The Milroy Lectures

ON

PUBLIC HEALTH AND HOUSING:

THE INFLUENCE OF THE DWELLING UPON HEALTH IN RELATION TO THE CHANGING STYLE OF HABITATION.

Delivered before the Royal College of Physicians of London on Feb. 28th and March 5th and 7th, 1901,

By JOHN F. J. SYKES, M.D., D.Sc. EDIN.,
MEDICAL OFFICER OF HEALTH, ST. PANCRAS; LECTURER ON PUBLIC HEALTH, GUY'S HOSPITAL.

LECTURE III.[1]

Delivered on March 7th, 1901.

DOMESTIC CONVENIENCES.

MR. PRESIDENT AND GENTLEMEN,—Domestic conveniences provide, in proximity to the dwelling, for the supply of fresh water, the removal of soiled water and of excreta, and the temporary storage of refuse. The supply of water in its simplest form implies a draw-tap and drip sink; this enlarged becomes a wash-sink, and elaborated is inclosed in a scullery; this again by the addition of a copper becomes a scullery and washhouse. The draw-tap and sink are a mere matter of plumbing and may be placed anywhere convenient, but the scullery is a matter of construction and greater expense. Hence, according to the class of dwelling, it is found that the domestic water-supply may assume any of the above forms and may be without or within the dwelling, and may be in common or in sole use. A few general principles can be evolved from the various methods adopted. Draw-taps in common use are found placed on balconies, in lobbies, on staircases, in sculleries, and occasionally in water-closets—the last is a very objectionable situation. In sole use, they are found, in addition to the above, in the dwelling-room or in a scullery attached. The essential points to insist upon appear to be that in houses of flats there should be water-supply on each floor; that when the appliances are used in common they should not be overcrowded by users, but that separate provision should be made for at least every two dwellings or families, and that the supply should be either within the precincts of the dwelling or situated as closely as possible to the dwelling. When economy will not permit of sculleries or of sculleries of sufficient size or so constructed as to admit of washing coppers, it is usual to provide a common washhouse, either for the whole house, or for a block of houses, or for several blocks of houses; on the last scale they practically become public washhouses, to which hot and cold baths may be attached, the privacy with each step being diminished. One form of provision for washing found occasionally in working-class dwellings is very objectionable—namely, the placing of portable coppers in inclosed spaces without windows or other possible opening into the outer air; this opening should be a *sine quâ non*, and the steam vapours should also be shut off from the interior of the dwelling.

With reference to water-closets economy also dictates whether the construction of the dwellings shall be such as to include the water-closet within its precincts or exclude it, and whether it shall be in sole or common usage. By a by-law now applicable to all houses in London one water-closet must be provided for every 12 persons, and it is generally so arranged to provide the necessary water-closets on each floor in new flats, but it is not compulsory, although it should be so. It is also now provided by a by-law that a water-closet must not be constructed so that it is approached directly from any room used for human habitation or as a work-place, or for preparing or storing food. This ought not to be interpreted that by merely multiplying the number of doors the object of aerial disconnexion is necessarily attained. They must also now in all houses be constructed against an outer wall, and be ventilated by windows into the open air. In the regulations as to the designing of buildings approved by the London County Council on Dec. 3rd, 1889, it was provided that the doors of water-closets should open directly into the open air, and this was conveniently arranged by means of open lobbies, but now this precaution is no longer taken, and many water-closets open on to inclosed common staircases. It should be one of the essential points in houses constructed in flats that the water-closets should be cut off by open lobbies, the open lobby being utilised also as a place of deposit for the dust receptacle and any offensive matter. The Local Government Board in new buildings insist upon lobbies between water-closets and dwellings being permanently ventilated into the open air, and it is to be regretted that the London County Council should fill these openings in.

The London County Council has done so much good work in the construction of working-class dwellings that it might appear captious to take exception to certain points in the arrangements of some of them, were it not that every detail becomes of increasing importance with the increase in the size of domestic buildings and in the number of human beings which they house, and that the Council's buildings may be taken as models by many of the bodies that have constructed artisans' dwellings, many of which do not come up to the healthy standard set by the Council, and to which all the critical comments that have been made apply with much greater force in many instances.

The storage of refuse is a great difficulty, and it is to be regretted that it is not compulsory to provide a modicum of open space, lobby, or balcony on each floor level of dwelling-houses constructed in flats as a place of deposit for the dust receptacle and any offensive refuse as well as a means of access to the water-closet. The dust receptacle requires to be simply a portable metal bin. Dust shoots as a means of transferring the contents of individual bins into the common dustbin are condemned as abominations. For the dustmen to fetch bins from each of the many dwellings, in large houses several storeys high, and to empty them directly into the vans is impracticable on a large scale. It remains, therefore, for the occupier to empty at night or morning the private bin into the common bin or bins either by hand, or, in better-class houses, by hand-lift. By means of duplicate bins the common bin and any transfer of refuse can be dispensed with. It is indispensable that the public collection of refuse should be made daily from houses constructed in flats.

The water-supply and drainage of houses are governed by statutes, by-laws, and regulations that need not here be detailed.

ECONOMIES PRACTISED.

It is in the power of anyone to design and erect buildings, and the economies practised in designing dwellings may be briefly summarised as:—diminishing the width, increasing the length, and lowering the height of rooms, extending the number of rooms of a dwelling along one front, reducing the number and size or abolishing the open lobbies, reducing the number and size of the sculleries and washhouses or providing none, reducing the number of water-closets and wedging them in, increasing the number of storeys vertically and increasing their extension laterally, multiplying the number of dwellings on each floor by means of corridors and balconies, and increasing the height, depth, and breadth of the houses. Excess in these directions will require more regulation and control in the future type than has been exercised in the past type of house, as the effects of unhealthy conditions will be multiplied in proportion to the increase in size of the buildings and in the number of inmates.

The economies of usage, the overcrowding of rooms, dwellings, houses, domestic conveniences, and sanitary appliances, and the sub-letting and sub-dividing of houses and dwellings will also require more supervision to prevent deterioration.

Attention may be directed to the fact that construction and usage are more or less distinct from each other, and that whereas construction is permanent usage may be altered at any moment. Happily in London, under Section 211 of the Building Act of 1894, the conversion of dwelling-houses, dwellings, and dwelling-rooms from or to *other* uses cannot be made without alteration in conformity with the Act.

The resident superintendent, or caretaker, in "flats" is a great protection to dwellings whether occupied by the richer or by the poorer classes. In working class dwellings he selects the tenants, keeps the more unruly elements under control and the rents paid up without entangling

[1] Lectures I. and II. were published in THE LANCET of March 2nd (p. 599), and 9th (p. 679), 1901, respectively.

arrears; he keeps the parts used in common in repair and cleansed and sees that those parts used separately are kept cleansed and in order. He also performs the function of keeping out intruders from the common courtyard or common staircase, a great protection to the dwellings and the occupants. In Scotland the common stair is generally protected by a door with a special lock to which each tenant has a key. On the continent large houses built round courtyards with *porte-cochères* generally have a *concierge's* lodge at the entrance, and houses not so built are generally entered through the *concierge's* quarters. These forms of protection are generally absent in the tenement houses of London, to the disadvantage of both owners and occupiers—a doubtful economy.

CERTIFICATES AS TO NEW DWELLINGS.

In the metropolis a house newly erected or rebuilt cannot be occupied as a dwelling-house until the sanitary authority have certified that it has a proper and sufficient supply of water. No similar certificate is required as to the drainage, but by statute it must be laid as the sanitary authority order, and under their control and supervision, and sanitary conveniences must comply with the by-laws. There is no reason why a certificate should not also be required as to the drainage.

By the Customs and Inland Revenue Act, 1890, section 26, the assessment to inhabited house duty of any house originally built, or adapted by additional alterations, and used for the sole purpose of providing separate dwellings for persons at rents not exceeding for each dwelling the rate of 7*s.* 6*d.* per week and occupied only by persons paying such rents, shall be discharged by the commissioners, provided that a certificate of the medical officer of health of the district in which the house is situated shall be produced to them to the effect that the house is so constructed as to afford suitable accommodation for each of the families or persons inhabiting it and that due provision is made for sanitary requirements. The medical officer of health of a district on request by the person who would be liable to pay the house-duty on any house in the district if the duty were not discharged as aforesaid, shall examine the house for the purpose of ascertaining whether such certificate can properly be given, and if the house be constructed so as to afford such accommodation and due provision be made as aforesaid, shall certify the same accordingly. And by the Customs and Inland Revenue Act, 1891, Section 4, Sub-section 2 of Section 26 of the Customs and Inland Revenue Act, 1890, is amended by the substitution of the words "where the annual value of each dwelling shall not amount to twenty pounds" for the words "for persons at rents not exceeding for each dwelling the rate of 7*s.* 6*d.* a week and occupied only by persons paying such rents." In the case of any house originally built or adapted by additions or alterations and used, so far as the same is used as a dwelling-house, for the sole purpose of providing separate dwellings at an annual value not exceeding £40 for each dwelling, the commissioners shall, upon the production of such a certificate as is mentioned, grant relief by confining the assessment to the annual value of the house exclusive of every dwelling therein of an annual value below £20 (if any) and by reducing the rate of duty to 3*d.* The provisions of the sub-section in relation to a certificate apply to a certificate to be produced under this section. This certificate refers to construction and fitting and the medical officer of health must be guided not only by medical and statistical experience but also must have some knowledge of the construction of buildings, especially from the point of view of design and arrangement, so as to be able to form a reasonable opinion. It will be observed that the certificate is to be given after the building has been erected and occupied and that there is no proviso for the medical officer of health to peruse the plans of proposed buildings before this, much to the disadvantage of the owner, as he may be refused a certificate which some modification at the proper time might have justified. It will also be noticed that it is a most expansive and comprehensive certificate if the words of the Act are used only,[2] but the certificate should be framed in such a form as to define clearly the points to which it refers and how they are provided for.

In new buildings "originally built" to be occupied in separate dwellings the minimum requirements should be: (1) that the buildings are constructed in conformity with the building Acts and by-laws, especially as to damp courses, concreted basements, &c.; (2) that the water-supply is in conformity with the by-laws and regulations; (3) that the drainage is in accordance with by-laws and regulations; (4) that the common staircase is permanently ventilated at each floor level or by through ventilation, so as to break the common air-connexion; (5) that each dwelling is so arranged as to be through ventilated from one front to another; (6) that each of the habitable rooms is at least eight feet six inches in height and 96 square feet in area, and has a fireplace and chimney-flue; (7) that there is at least one draw-tap and sink, with a constant supply of water thereto, for every 12 occupants or less on each floor; (8) that there is at least one water-closet, properly and efficiently supplied with water, for every 12 occupants or less on each floor disconnected aerially from any dwelling in the interior of the building; (9) that on each floor a sufficient space or open lobby is provided accessible to, and for the use of, each family on each floor for the deposit of refuse, &c.; and (10) that accommodation for clothes-washing is provided sufficient for each family to occupy the wash-house or appliances one day each week.

In existing buildings "adapted by additional alterations" to be occupied in separate dwellings the minimum structural alterations for adaptation should require to be: (1) that the common staircase should be amply and permanently ventilated into the open air; (2) that the dwellings should be ventilated through from one front to another; (3) that the water-supply should be in conformity with statute, by-laws, and regulations; (4) that there should be a draw-tap and sink provided on each floor for every 12 persons or less; (5) that the drainage should be in conformity with statute, by-laws, and regulations; (6) that clothes-washing accommodation should be provided for each family at least one day a week; (7) that there should be water-closet accommodation for every 12 persons or less on each floor properly cut off aerially from the dwelling; and (8) that there should be an open lobby space or balcony on each floor as a place of deposit for the dust receptacle and offensive refuse.

I have never been asked to certify any existing building "adapted by additional alterations," nor have I heard of any such request being made elsewhere. It may be assumed that the return of inhabited house duty is not sufficient inducement to incur the expense of alteration. The house-duty is a tax from which there are many exemptions, amongst others houses under £20 a year are exempted from payment. The assessments are made by local authorities and for the purpose of rates every separate dwelling more or less severed from another is assessed as a separate "house." These assessments are forwarded to the surveyors of taxes and thus many houses containing separate dwellings are exempted. In addition, all houses with outside or open staircases are also exempted by the surveyor when the component dwellings come within the rentals mentioned in the Act. The number of dwellings requiring certificates are therefore becoming fewer every year.

III.—USAGE AND MISUSAGE.

DWELLINGS CLASSED ACCORDING TO USAGE.

Construction and misconstruction have been mainly touched upon as applying to new dwelling-houses; usage and misusage will mainly be considered in reference to old. Before doing so it will be desirable to picture dwelling-houses as falling into classes according to usage. On the one hand there is the ordinary dwelling-house occupied by one family or household and used as one dwelling only, and on the other the dwelling-house occupied by members of more than one family, and a greater or lesser part of which is used in common. Of these more or less common dwelling-houses there are a number of types:—1. Those used entirely in common—e.g., the common shelter and the common lodging-house. 2. Those used all in common except the sleeping places (*a*) with separate cubicles in corridors—e.g., Rowton lodging-houses, or poor men's hotels, or (*b*) with separate bedrooms—e.g., ordinary lodging-houses and hotels, boarding-houses, and residential clubs. These types of dwelling-houses are furnished, provided with service, and supplied with food, although this may be reduced to the smallest proportions, and they are variants of the inn or hotel, and are invariably under resident management and supervision and duly controlled as to usage.

[2] Tenemented Buildings and Duties on Inhabited Houses, Journal of the Sanitary Institute, vol. xix.

Then come dwelling-houses let in separate dwellings, unfurnished, without service and without food, and approached by a common stair, the dwellings differing in privacy according to the degree of structural severance and of combined usage of the domestic and sanitary conveniences, the types being :—1. Those containing separate and self-contained dwellings, each dwelling having but one entrance, and within its precincts at least room for sleeping, living, and cooking, and a scullery, lobby, and water-closet or other conveniences as in self-contained flats. 2. Those containing separate and self-complete dwellings in which part or all of the sanitary and domestic conveniences are situated outside the dwelling, but on the same floor, and are not used in common. 3. Those containing separate and associated dwellings where on each floor either the sculleries, lobbies, or water-closets or all the domestic and sanitary conveniences are used in association by the families on the same floor. These types are found with variants in all kinds of flats, but the next type is found in the older houses only. 4. Those containing dwellings having no severance from each other except by occupation and where the domestic and sanitary conveniences are used in common by all the occupants of the house. This last type is, of course, at once recognised as that of the misusage of the kind of house not intended for the purpose of providing separate dwellings, but which the pressure of population has forced into that service without any alteration to meet the changed usage. And here it is desirable to trace briefly the causes and effects of pressure of population upon housing and some remedies that have been suggested.

PRESSURE OF POPULATION AND OVERCROWDING.

In considering the question of overcrowding and housing there are certain lines that should be followed if logical conclusions are to be reached to diagnose the disease and to trace the causes, to lay bare the effects of the malady and the natural processes of recovery, to suggest remedies most assisting to natural events, and to remove any impediments to the return of equilibrium.

It must be borne in mind that overcrowding of population implies not merely the overcrowding of cubic space in rooms, but also the diminution in the number of rooms in dwellings and the increase in the number of dwellings in houses, the results of which are the production of overcrowding of the domestic and sanitary conveniences and the rapid deterioration educationally in the habits and customs of tenement dwellers and the ultimate deterioration of health, especially of the health of the children.

Briefly put, the malady is extreme pressure of population in certain areas of great towns, especially of the metropolis, the part most affected being the middle zone where the stream flowing in from the country meets the stream driven out from the centre. The extension of commercial and professional activity in the centre is the cause that sets in motion both streams, by bringing more and more workers to the centre and displacing more and more dwelling accommodation round the centre, so that both the displaced population and the newer comers compete for housing accommodation with those already residing in the middle zone. The effects are that the destitute are driven into the workhouses, the dissolute and the recessitous into the badly built, decaying, and out-of-date areas, and the respectable workers into tenements or rooms in dwelling-houses or parts of dwelling-houses from which the former better-class occupants have been driven farther out. Equilibrium has been restored in the past by the construction from time to time of additional dwelling-houses further and further out and the gradual improvement of means of transport, the largest proportion of those migrating to the suburbs belonging to the more comfortable and prosperous classes. There is no reason to suppose that this is not the mode in which equilibrium will ultimately again assert itself. But the process is slow and may be quickened by improved transport, by additional buildings in the outer zone and in the middle zone, by the reconstruction of the worst of the existing houses in healthy flats, and the adaptation into flats of the floors of the best of the remaining dwelling-houses.

There is an idea prevalent that if in an old area in a city so many thousand persons require decent dwelling accommodation it is only necessary to erect so many thousand houses on a new area in the country and to supply means of transportation and the transfer is effected. But thousands of people do not simultaneously put together their goods and chattels and straightway migrate some miles into the country. No such a movement takes place. The improved transport is not the means by which the overcrowded population of an internal area is removed, but is the medium that prevents the new area in the country from being isolated and enables those attracted there to get to and from the city. The new area attracts the best of the population nearest to it, and the areas relieved by the new area in their turn attract others. A movement and a circulation take place around the new centre. Additional transport and additional dwellings in distant suburbs will only relieve overcrowding in a particular area or zone by slow, distant, and indirect effect and it is difficult to understand why there should be any insistence upon building at a distance classes of dwellings that the overcrowded persons for whom they are intended will certainly not occupy when they are completed. These overcrowded persons will get the best accommodation they can secure within reasonable distance of their work, and as the pressure of population relaxes they will find this accommodation in the houses vacated by those of a somewhat better class moving further away.

Within the last 50 years London has grown yearly at the rate of from 40,000 to 50,000 persons, this average number being about equal to the excess of births over deaths; but a large emigration from London is continually taking place, and an equally large immigration into London simultaneously goes on. Whether the emigration is from the more central parts there is no means of ascertaining, but that the immigrants settle in the more outlying parts is proved by the census returns which show that the number of persons born out of London is larger in the outlying districts than in the inlying districts of London.[3] This leads to the question whether additional building in distant suburbs will immediately benefit the immigrants *to* or the residents *in* London?

It is very reasonably said that the demolition and reconstruction of unhealthy houses, groups, and areas are no remedies for overcrowding, and it is obvious that they cannot be as they do not provide additional dwellings. But the necessity for demolition and reconstruction is brought to an acute stage by overcrowding, the dwellings and groups of houses, originally ill-arranged and ill-constructed, being soon rendered unfit for habitation by the increasing congregation and compression of the worser elements of the population on an unhealthy area. The effect of demolition is not only to destroy the houses but also to disperse the worser elements amongst the better elements of the population. Therefore demolition is a remedy for the effects of overcrowding, and proper reconstruction should be the means of preventing their recurrence, and the effect of the process is a circulation and re-arrangement of population.

But there remains still to consider the large population driven into sub-let houses unsuited to the usage to which they are put. They never were intended to house a number of families and no attempt is made to render them fit for this purpose. It is here that overcrowding exercises its most deteriorating and permanent influence upon the health and morals of thousands of children, youths, and young persons whilst waiting for the erection of new buildings at a distance that will not affect their neighbourhood except by a back-wash years hence. I am firmly convinced that the greatest hope of regeneration lies in adapting the better type of tenement houses to the altered usage to which they are put, and without an effort in this direction, even when the acuteness of the overcrowding has been modified, the ill-effects will continue to persist.

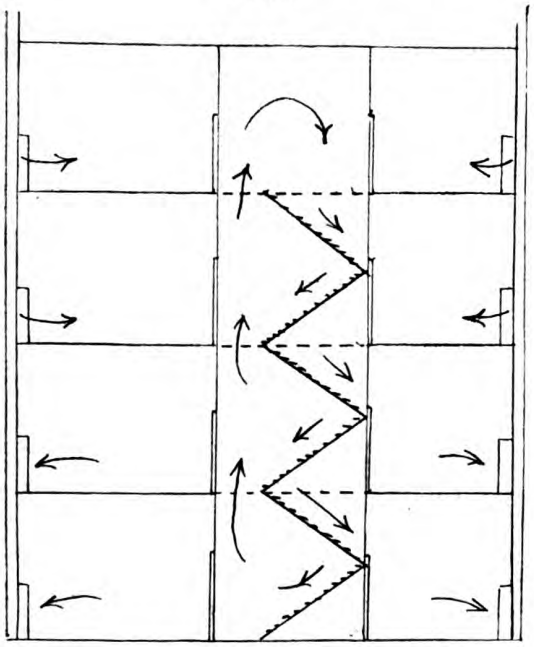
MADE-DOWN TENEMENT HOUSES AND TENEMENT DWELLINGS.

The tenement-house is generally understood to mean the ordinary vertical dwelling-house constructed for the use of one family and sub-let to the usage of many and not a house constructed in flats. Of such houses there are many thousands in London and a family likeness runs through them—the common passage and staircase and the staircase-well with its foul atmosphere derived from the rooms opening into it, and the dwelling-rooms with their doors ajar, destroying all privacy, in the attempt to mitigate the smokiness of the chimneys within (see Fig. 7 and Fig. 9). For the major part of the year, and especially in cooler weather, with the windows all closed and the fires all burning, the atmosphere of the whole house becomes one, and as no air can enter by the windows or chimneys and the fire-grates are all extracting, the chimneys as a consequence all smoke, much to the surprise and

[3] See also Map, vol. ii., Labour and Life of the People, Charles Booth.

disbelief of the owner, who previously to sub-letting the house probably lived there himself. He cannot understand the competition that is going on between his tenants to secure as much as possible of the air in the staircase-well, wherever it may be drawn from, and that whereas formerly the unlighted grates supplied air to the staircase-well which was distributed up and down the staircase by an upcast and downcast current to satisfy the lighted grates, those grates being now lighted and becoming also extractors the circulation of air in the house is destroyed. That this is the case can be verified by very simple experiments in any house by means of candle flames and smouldering paper.

FIG. 7.



A diagrammatic representation of the circulation of air in ordinary dwelling houses.

The absence of cleanliness everywhere, especially on the upper floors, and the want of use of soap-and-water are everywhere apparent, and a little deeper inquiry leads to the conclusion that water is not a commodity to be obtained easily without going a considerable distance, and that to get rid of liquid and solid refuse similar long journeys have to be made. In addition to the excessive number of dwellings in the house there is usually an excessive number of persons per room, but it is remarkable how closely the occupants keep just outside the inadequate minimum of cubic space. So that with no illegal overcrowding these unhealthy conditions are the normal ones under which many thousands are permanently housed and will continue to be so housed whatever new additional building takes place in the suburbs. The superficial observer often heaps abuse upon the class occupying such houses for their negligent, uncleanly habits, oblivious of the fact that the constructive arrangements of their dwellings never give the opportunity of acquiring decent habits.

Many years ago the late Dr. Edmund Parkes showed that, calculated on a physiological basis, the human adult required 1000 cubic feet of space, because in order to maintain the air in a sufficient state of average purity in a dwelling-room it was necessary to supply 3000 cubic feet of air per hour and the air in this climate could not be changed more often than three times per hour. We are continually bemoaning the large death-roll of tuberculous phthisis, which is, as we have seen, essentially a disease spread by crowding and restricted air-space, and the medical profession is now strongly advocating the cure and mitigation of the disease by fresh-air treatmeat. Is it out of place to advocate even more strenuously the prevention of the disease by the provision of more cubic space and especially by raising the present inadequate minimum standard of 300 cubic feet? The adoption of a maximum as a working standard is scarcely practicable, but it is practicable to advance the minimum standard to 400 cubic feet at the very least for adults, and if the lauded fresh-air treatment means anything it means, firstly, a decided step in this direction and a legal definition of overcrowding, the omission of which in our Public Health Acts is a serious flaw.

How are local authorities to control new buildings as to cubic space occupied after they are constructed, since overcrowding is not a question of construction? It can only be done on a sufficient scale by a statutory definition of overcrowding of cubic space, and nothing short of 400 cubic feet per head for adults will be satisfactory, although it may reluctantly be reduced to half the amount for children under 10 years. It is essential to practical working that this minimum standard of cubic space be made to apply to all rooms used for sleeping purposes, whether occupied also as living-rooms or not, because it is practically impossible in a large number of cases to differentiate, and where such differentiation is attempted it fails in that it has no permanency.

Underground dwellings are mainly to be found in tenement houses, where they were originally intended to be used as kitchens, sculleries, stores, lumber-rooms, or cellars. Underground rooms are only subject to restrictions when they are let as dwellings separately from any other rooms on any floors of the house, and when the floor of the rooms is more than three feet below the surface of the nearest ground. The principal disadvantages these rooms suffer from are want of light and air and the presence of dampness and ground vapours, and the restrictions are intended to avoid these. It is inscrutable why the legislature has hesitated to prohibit any room from being used as a dwelling however much or little the floor may be below the surface unless protected by a concrete base and an external area to six inches below the base level with ventilation between concrete and flooring. Numbers of back basement rooms escape the statutory provisions intended to protect against damp earth and ground vapours, simply because their floors are less than three feet below the nearest ground, which is generally a diminutive backyard. The principal reason for mentioning underground dwellings here is to illustrate the fact that Parliament has in this instance legislated for the dwellings as apart from the houses as a whole, and has set a precedent that should be followed by legislating for other dwellings in houses let in separate dwellings, and defining what is a proper dwelling, for at present no such definition exists. Whole streets of houses formerly occupied by good-class families are now occupied in separate dwellings on separate floors. Whole neighbourhoods of houses in London can be seen undergoing this process of subdivision, and their state slowly but surely falls from bad to worse without any attempt to stem the deterioration, degradation, and unhealthy results that must inevitably follow until an insanitary area will have to be dealt with at great expense. There are no powers available for dealing with the structural arrangements of separate dwellings, and the only course open is the registration of the whole of the house under the by-laws.

There can be no doubt that the want of stair ventilation, the difficulties of obtaining water, of access to the water-closet, to the scullery, and to the washhouse, and of refuse riddance, are causes of the ill-health of the dwellers in tenement houses, and that the unhealthy habits engendered by such conditions become permanent.

THE REGISTRATION OF TENEMENT HOUSES.

Every sanitary authority must make and enforce by-laws for fixing the number of persons who may occupy a house, or part of a house, which is let in lodgings or occupied by members of more than one family, and for the separation of the sexes in a house so let or occupied; for the registration of houses so let or occupied; for the inspection of such houses; for enforcing drainage for such houses and for promoting cleanliness and ventilation in such houses; for the cleansing and lime-washing at stated times of the premises; and for the taking of precautions in case of any infectious disease. With reference to infectious disease and drainage, all houses, including the above, must conform to the laws, by-laws, and regulations that already sufficiently cover that ground. Therefore, there remain with regard to tenement houses the provisions for registration, inspection, air-space, ventilation, and for the cleansing of parts and of the whole premises. The same by-laws apply to a house whether it contains two

families or a dozen. As far as ventilation is concerned the model by-laws of the Local Government Board make no structural provision, so that the principal use of the by-laws is to prevent overcrowding and to obtain cleansing. The essential point of difference between the condition of a house when it contains two and when it contains a dozen families is one of altered usage with unaltered structure, and the by-laws provide for no structural alteration; on the contrary, by registering the house the misusage of the premises for purposes for which it was not built is practically stereotyped and legalised. This is remarkable as contrary to the spirit of the Building Act which by Section 211 (3) prohibits the conversion into or use as two or more dwelling-houses any building constructed originally as one dwelling-house. The unit of legislation has hitherto been the house, except in the case of underground dwellings. With the altered method of construction of new dwelling-houses and of usage of old houses the house as a unit is insufficient to meet the requirements of separate dwellings under the existing form of laws and by-laws. The unit must be the dwelling. This is so obvious a generalisation that it would hardly need statement but for the fact that it appears to have almost entirely escaped the observation of the legislature, possibly because the floor and flat style of dwelling, one storey above another, is the growth of recent years.

A COMPARISON OF FLOORS WITH FLATS.

If dwellings in floors be compared with dwellings in flats there is a great difference in the conditions of living. "Flats" we understand to be horizontal dwellings with all conveniences on the same level; "floors" we understand to be horizontal dwelling-rooms with all conveniences on ground or basement level. The conveniences embrace (1) water-supply for (*a*) personal ablution, (*b*) cooking and washing up, (*c*) small washing, (*d*) room washing, and for (*e*) drinking purposes; (2) drainage for water polluted by (*a*) personal ablution, (*b*) food washing, (*c*) small washing, (*d*) washing of rooms, (*e*) bedroom slops, (*f*) urine, and (*g*) children's excreta; and (3) refuse removal, including food waste, ashes, and sweepings. The small washing is often done in a room, but the large washing is usually done in the washhouse on the premises or at the public washhouses or by a laundress. The coal fuel is kept either in or in close proximity to the dwelling.

Certain houses that enable exact comparisons to be drawn between the sanitary condition of these two modes of living—namely, in flats and in floors, have come under my observation in adjoining streets. Both groups were built in 1882–83. For convenience the former may be called A, B, and C houses in O street and the latter Nos. 2 to 20 (even numbered) houses in H street. Each group contains 42 dwellings; the flats are contained in three houses, each consisting of 14 dwellings of three rooms each. The floors are contained in 10 houses, of which eight consist of a three-room and a two-room dwelling each, one of one three-room and four two-room dwellings, and one of five two-room dwellings. The houses are in each group of four storeys, the "flats" being four on each floor and two on an additional half-ground floor at the back. In none of the houses of either type is there a resident caretaker. The fundamental difference between the two groups is that whereas in the "flats" all conveniences are on the same level in the "floors" the conveniences are situated in the basement or yard, and the question to be asked is, What effect has this upon the habits of the occupants, especially the occupants of the upper floors? To avoid entering into lengthy details two typical cases may be taken to exemplify the comparative sanitary conditions that prevail in the two kinds of houses. In the top floor of C house in O street is a family of husband and wife and five children, paying 8*s*. a week for a dwelling consisting of a living-room, two bedrooms, a scullery and a washhouse, and a water-closet, and kept in an orderly and cleanly condition. In the top floor of No. 10 house in H street is also a family of husband, wife, and four children, paying 8*s*. 6*d*. a week (6*d*. more) for a floor consisting of a living-room and two bedrooms. Every drop of clean water has to be brought up from the basement and every drop of dirty water taken down again. The washing is all done in the basement washhouse. All refuse is thrown into the fire-grate and there kept until ready to be taken down to the dustbin in the yard. All the members of the family, including very young children, have to make their way down to the back yard to the water-closet. The tenant did not know any of the other families living in the house, whether they were respectable or not. The condition of the rooms left much to be desired, although the mother appeared to be an industrious woman and deplored the fact that she had been obliged to move out of one of the flats in O street because the house had been devoted to other purposes.

There is a vast number of families in London living on the top floors of four-storeyed houses, the water-taps, sinks, water-closets, and dustbins of which are situated at the ground floor or basement, or in the yard or area, and these houses are about 40 feet high. It is usually assumed that 20 times more energy is expended in walking upstairs a vertical height in comparison to walking on the level; therefore walking to the top of a four-storey house is equivalent to walking about 800 feet upon the level, and, say, a cottage measures 15 feet frontage, this is equivalent to walking past a row of over 53 cottages to reach the common sanitary conveniences above-mentioned. What would be the opinion of a medical officer of health or of the Local Government Board if provision were as inadequately made even in a rural district? Yet this is the condition that prevails over a large part of London. It is usual to regard 100 feet horizontally as the limit of "reasonable distance" for water and drainage, and even the extreme limit of the law does not suggest going beyond 200 feet. This is equal to five feet and 10 feet respectively regarded vertically, or one storey. How can it be said that houses in which some of the families have to traverse a distance equivalent to 1600 feet to and fro to draw fresh water, another 1600 feet to and fro to cast foul water, 1600 feet to and fro (every member of the family, including very young children) to visit the water-closet, and another 1600 feet to and fro to deposit the refuse if it is not to be retained in the dwelling-rooms, are sufficiently equipped structurally to give the occupants an opportunity of leading healthy, cleanly lives? What chance has a respectable family of observing the decencies of life in a house where there are one or two dissolute families, where the domestic and sanitary conveniences are all used entirely in common, and the members of the respectable family, even the youngest, are continually traversing the house to and fro? If domestic and sanitary conveniences are provided on each floor those living on that floor can at least cultivate their own good habits in their own way. What is wanted is to procure for families as much privacy as can be obtained, and to reduce the common usage to the smallest proportions possible. This is even more requisite in tenement houses where there is no resident controller than in blocks of artisans' dwellings. Numerous streets in parts that were suburbs 50 years ago with good middle-class houses are now sub-let in floors. I have watched the conversion of whole streets and roads of good houses from one occupation into "floor-lettings," and this has taken place within recent years and without the least modification of structure. The ultimate effects of this conversion without adaptation is disastrous. The leasehold system is partly responsible for it, the leaseholder naturally getting the best return possible, and the freeholder being supine, as the demand for housing accommodation forces up the value of the land. The ultimate result appears never to be considered until insanitary conditions throw upon the sanitary authority, and especially upon the medical officer of health, the unpopular duty of condemnation. This shifting of responsibility throws upon the medical officer of health the defensive duty of pointing out that he is largely required to make bricks without straw, because the domestic and sanitary requirements of a dwelling, as distinguished from a house, are undefined, and the ordinary laws as to nuisances do not touch the points at issue.

With the increase in the size of dwelling houses and the increase in the subdivision of houses into separate dwellings the urgency of legislating on the lines of the dwelling as the unit becomes greater and greater, and no approach to any satisfactory handling of the housing question, at least in the metropolis, will ever be reached until this unit is adopted as a fresh starting basis. Some such provisions as the following are required to meet the changed circumstances of living. Every part of a house hereafter let off separately as a dwelling shall have on the same or on the adjoining floor the use of the domestic and sanitary conveniences necessary to render a dwelling habitable. The domestic and sanitary conveniences, the use of which is necessary to render a dwelling habitable, are: a water draw-tap constantly supplied with water, a sink and waste-pipe for drippings and washing purposes, a water-closet, dust receptacle, coal-box, and food-safe.

None of these conveniences should be situated in a habitable room, and where possible there should be an open lobby or landing on each floor. In any case the common staircase of the house must be permanently ventilated into the open air at each floor level. It should be remembered that in continental and Scotch cities, where for years the flat system has been in vogue, the mode of sub-letting houses in floors improperly equipped does not present itself as a serious question for them, as on each floor of the houses of those cities the appurtenances of the dwelling are provided. It is the altered conditions in London that furnish this serious problem.

THE ADAPTATION OF TENEMENT HOUSES.

It may be taken that there would be little difficulty in making and enforcing provisions for ventilating the common stair at each floor level, for having a refuse receptacle on the open landing or lobby, and for supplying a draw-tap and sink on each floor. The water companies might possibly stand in the way with extra demands, and the owners of tenement houses would probably object to any expenditure unassisted.

With regard to water-supply it was pointed out by the last Royal Commission, in reference to the metropolis and neighbourhood, that "the requirements of the population are a supply of pure and wholesome water, constantly laid on, at such a pressure as will make the water reach the top storey of the highest houses, and in quantity sufficient from time to time to meet the needs of the growing number of inhabitants."[4] Very few made-down tenement houses have water supplied anywhere above the ground floor, and generally it is in the basement only, or sometimes at the end of the backyard. The only way in which the approval and coöperation of property owners could be won would be by monetary assistance in some form. If this were forthcoming something more permanent than the mere makeshifts above suggested would be required of house-owners, and if municipal authorities were to undertake to convert floors into "flats" the same would apply. For the purpose of adaptation only houses well situated as to light and air should be dealt with. It must be recognised that a certain proportion of houses are not fitted to be adapted, either on account of the surroundings, or of the internal arrangements, or of the originally bad construction, so that it would be necessary carefully to select those suited to the purpose, but of these there are considerable numbers.

There are three methods in which tenement houses could be adapted. 1. The simplest but not the most satisfactory manner is by partitioning off a portion of the front room opposite the staircase landing on each floor to form a scullery and washhouse and on the further side of this to construct a water-closet against the outer front wall, obtaining through ventilation from the open air in the front to the back of the scullery by means of a fanlight on to the common staircase and so into the open air again off the staircase at the rear of the house. This partitioned off lobby, scullery, and water-closet may be made to be entered either from the front room of the dwelling for private use or from off the staircase for common use when there is more than one dwelling on a floor. (Fig. 8A.) 2. Probably the best method would be by the construction of a tower at the back of the house, containing on each floor an addition containing an open lobby, scullery, and water-closet and approached from the back room on each floor; this would restrict the addition to private use. (Fig. 8B.) 3. If the tower were constructed off the staircase then the addition on each floor or half floor would be available for common usage by the families on the adjoining floor. (Fig. 8C.) Out-buildings, towers, or projections abutting at right angles to the line of frontage, generally the rear front, are objectionable on account of the tendency to impede light and air in proportion to the distance they advance from the main wall and according to orientation. On the other hand, there is a great advantage in being able to add sanitary conveniences, such as water-closet, scullery, &c., and lobby, with ventilation between the dwelling and the sanitary additions, provided that the projections do not advance so far as to close in the spaces at the rear or to interfere with the perflation of the dwelling. I see no reason why a skilful architect should not be able to design a tower addition of this kind without any appreciable detraction from light and air. The sketches show the several methods suggested and sections through a tenement house unadapted and adapted for separate dwellings. (Fig. 8A, Fig 8B, Fig. 8C, and Fig. 9.)

[4] Final Report of the Royal Commission on Water-Supply within the limits of the Metropolitan Water Companies, Viscount Llandaff, Chairman, 1899.

FIG. 8A.

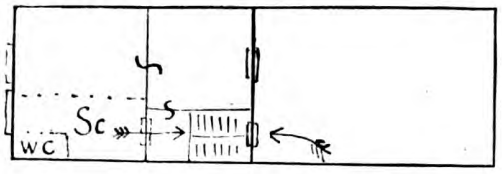


FIG. 8B.

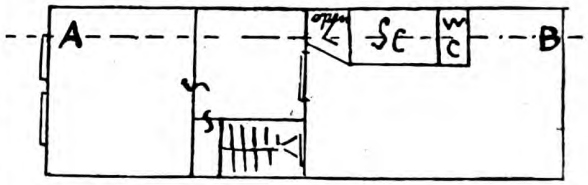
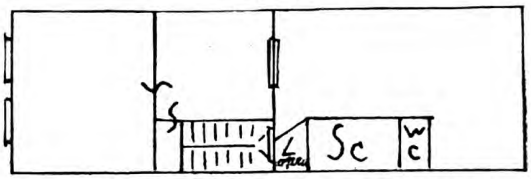


FIG. 8C.



Diagrammatic representations of methods by which better ventilation can be secured in dwelling houses. In Fig. 8B the line A, B indicates the place where the section is taken, shown in Fig. 10. Sc., Scullery. L, Open lobby.

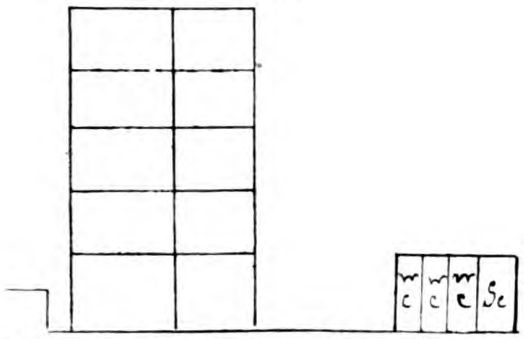
After working for a long time upon this idea of adapting the ordinary tenement house so as to render it healthily habitable in separate dwellings, I recently found, as many before have found, that there had been another worker in the same field. 30 years ago Professor Bannister Fletcher, F.R.I.B.A., published a work entitled "Model Houses for the Industrial Classes," which is now out of print. The work contains three designs[5] for model houses, one of which there would be great objection to, another that would be passable with slight improvement, and a third that is decidedly good. But the most important part relates to the adaptation of existing houses, of which two methods are shown by drawings—namely, the addition of domestic and sanitary conveniences on each floor—by one method placing them in a separate compartment on the staircase and cut off from the front room, by the other method placing them in a tower built out at the rear of the staircase window. There is also illustrated a method of converting three narrow houses into two "double flat" houses. This work was written with a view to realising increased profits from the rentals of adapted houses, but as unadapted sub-let houses obtain as high and even a higher rental per room than houses constructed in small flats it is not surprising that the object in view was not attained. Yet the fact remains that adaptation is undoubtedly the right and proper course to pursue in appropriate instances, and is the only means of permanently ameliorating the condition of existing tenement houses.

The raising of the money for this purpose with local authorities presents no difficulty, as under Part III. of the Housing of the Working Classes Act, 1890, a local authority as well as a private company, association, or individual may not only build additional houses, but may also convert any buildings into dwelling-houses for the working classes and may alter, enlarge, repair, and improve the same respectively. No effort has hitherto been made to do this. The best work that local authorities might hope to do would be in showing by example how some existing unhealthy tenement houses could be converted into healthier flats as object lessons, rather than in attempting to acquire and improve *all*

[5] There is a fourth but it is practically the same as the third.

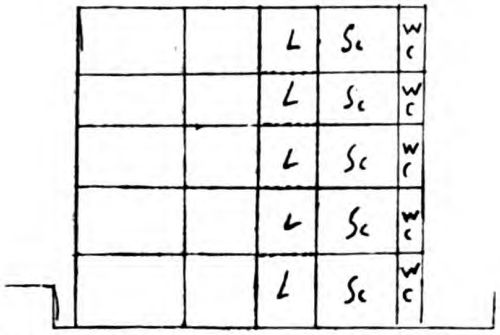
such houses. Private owners, individually and associated, must be depended upon to carry out such work, if it is to be done on any adequate scale. As to borrowing money for the construction of new dwellings I have shown elsewhere[6] that public authorities and private

FIG. 9.



Section through an ordinary tenement house, showing situation of water-closets and scullery.

FIG. 10.



Section through tenement house diagrammatically represented in Fig. 8B. Section taken at line, A, B, showing situation of lobby, scullery, and water-closet.

companies or individuals have both borrowed nearly equal amounts from the Public Works Loans Commissioners for this purpose. No money appears to have been borrowed for purposes of adaptation. Under Part III. of the Act loans are granted to private persons entitled to the land in fee simple for an absolute term of more than 50 years for the purpose of improving dwellings for the working classes. Land-owners have no power to deal with the houses on their land until the leases expire—leasehold house-owners only possess this power, although even they in many instances are not the persons who sub-let the houses in subdivided tenements. Few leasehold house-owners possess houses upon a term sufficiently long to satisfy the requirements of the Public Works Loans Commissioners for borrowing purposes, and most leasehold house-owners would object to borrowing or spending money to adapt tenement houses when they can be let without alteration.

The exemption from the inhabited house duty offered by the Customs and Inland Revenue Acts of 1890 and 1891 under the certificate of a medical officer of health to owners of houses altered and adapted to be let in separate dwellings has not, to my knowledge, proved sufficient inducement to cause a single owner to move in this direction. As has been already pointed out, the pressure of sanitary legislation in this direction is *nil*, such legislation not yet having taken into account the altered circumstances of the last 10 or 20 years.

It might be thought that if new blocks consisting of houses containing flats of two, three, and four-roomed dwellings with conveniences attached can be erected and be let at the same rent as, and even at less rental than, the same number of rooms in an existing house subdivided and sub-let without conveniences attached to the separate dwellings it should be possible to adapt many existing houses without necessarily increasing the rental, and to stem the downward progress of deterioration in decorative and structural condition caused by common usage, and at the same time to improve the habits and to stimulate the self-respect of the inmates, to the mutual advantage of landlord and tenant. But one has to recall the circumstances in which many of the existing blocks of separate dwellings were erected in London. The Metropolitan Board of Works never built on any of the numerous sites cleared by them since 1875, but the sites were sold at a price much below open market value, because the condition was attached to the sale that working-class dwellings must be erected upon the sites, and the companies and individuals who purchased them were to that extent practically subsidised. A similar course is adopted by the London County Council as successors of the Metropolitan Board of Works: they build upon the sites cleared, but before doing so they revalue the sites with the restriction upon them only for the building of working-class dwellings, and the difference between the open market commercial value and the restricted value is wiped off, again practically subsidising the dwellings upon the site. Furthermore, some bodies that construct buildings have been largely endowed by private philanthropy, so that they have no interest and no sinking fund instalments to pay, and are to that extent also subsidised. Therefore it is not to be wondered at that well-found flats are let to the working-classes at the same or a lower rental than bare incommodious floors in tenement houses and that house-owners are deprived of whatever inducement or incentive or desire they may have possessed properly to adapt houses made down into tenements to the altered purposes to which they are put.

At present there would appear to be only one way of counteracting the effects of subsidies or quasi-subsidies upon new buildings, and that is by subsidising or otherwise assisting pecuniarily the existing owners of houses made, or to be made, into tenement houses. If local authorities undertook to alter and adapt tenement houses they would have to purchase them compulsorily with 10 per cent. added.

If owners undertook to adapt and improve tenement houses so that they might be let in separate dwellings in properly equipped floors or flats they might be empowered to send to the borough councils plans and sections of the proposed improvements, to be submitted to the surveyor and medical officer to report upon. This report would embrace the consideration of open space about the buildings for external light and air, the height of the houses, the condition of stability and repair, the mode of construction and arrangement, the suitability of the premises to adaptation as separate dwellings, and the adequacy of the proposed improvement to convert the floors into healthy flats. If the owners' houses and plans be approved they might be empowered to make application to the borough council for loans upon the property at the lowest possible rate of interest with repayment by small instalments in a term of years, in a similar manner to that in which a land-owner obtains a loan from the Public Works Loans Commissioners for the building of new working-class dwellings. The conditions upon which the loans would be granted would be set out fully as to the structural improvements to the premises required before completion of the payment by the borough council. In addition to the benefit of a very low rate of interest and a small refunding charge, the certificate of medical officers of health would exempt the house also from inhabited house duty. By some such method owners might be induced to adapt their houses to the altered requirements in many areas vacated by emigrants to the suburbs. If not, then some small additional inducement should be offered to bring about the necessary equilibrium. Otherwise there appears to be a prospect that if the number of houses made down by usage into floors without structural adaptation continue largely to increase the number of sanitary inspectors and the amount of inspection will require also to be largely increased. Judging by the very much less inspection required in "flats" as compared with "floor" houses, even where there is no resident caretaker, it is not unreasonable to expect that the adaptation of the "floors" would enable a considerable annual expenditure to be saved and that the beneficial effect upon health and habits of the people so housed would make ample recoupment in kind, if not in money, for the expenditure incurred in adaptation. In any case it must necessarily be in appropriate instances a less costly procedure than entirely demolishing the houses and reconstructing them.

[6] Results of Housing the Working Classes, Howard Medal Prize Essay, Royal Statistical Society, 1901.

A BRIEF REVIEW OF THE HOUSING QUESTION.

To summarise briefly the question of the healthy housing of the people, our ideas must be cleared of the confusion between the march of two cognate but distinct events. The first is the pressure of urban population whereby all the requirements of healthy dwellings are compressed into the smallest limits, and the second is the making down and dilapidation of dwelling-houses and the deterioration of the health of the inmates whereby insanitary areas and unhealthy tenement streets are created. The remedy for the first is relief of the pressure and resistance to its injurious tendencies; the remedy for the second is the reconstruction of insanitary areas and the adaptation of tenement houses. The relief of the pressure of population will ultimately be brought about by the improvement of the means of transport between the suburbs and urban centres; the building of additional houses in the suburbs; the attraction to the suburbs of the better classes and those able to live at a distance; and the slow but ultimate relief of the pressure in the middle zone by the movement and circulation of the population and the gradual vacating of houses occupied by single families and sub-letting in separate dwellings. The remedy for the dilapidation and deterioration will be brought about by the reconstruction of the worst areas and houses in healthy flats; the adaptation of the best streets and houses of an unhealthy "floor" type to a healthy "flat" form of construction to suit the altered mode of usage; and the supplementing of sanitary laws and by-laws with the dwelling as the basic unit.

The Lettsomian Lectures

ON

DISEASES AND DISORDERS OF THE HEART AND ARTERIES IN MIDDLE AND ADVANCED LIFE.

Delivered before the Medical Society of London

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LECTURE II.[1]

Delivered on March 18th.

MR. PRESIDENT AND GENTLEMEN,—In my last lecture I presented to you a brief account of the condition of the organs of circulation between the ages of 40 and 75 years and I then proceeded to direct your attention to the principal influences which may disorder and damage them during that period of life. I will now attempt to describe the clinical characters and course of the affections of the heart and arteries as I have observed them in connexion with these different influences respectively, whether gout, mechanical stress, syphilis, or other. Thereafter, if time permits, I may be able to examine the different symptoms and signs individually in order to discover the value of each as a guide in diagnosis.

Now, as I have already pointed out, the causes of cardio-vascular disease in the second half of life are very often, indeed usually, complex. It follows, therefore, that if we desire, as we do most particularly, to discover the effects of each pathogenic influence as distinguished from the others, we must begin our study with the simplest, or purest, or most definite of all, and proceed from it towards those which are more difficult, as well as to combinations of causes. It is easy to adopt that method in our present inquiry.

TOBACCO-HEART.

We have in tobacco a single distinct influence at work, one that is universally acknowledged to affect the heart and vessels, and the physiological action of which is understood; one, further, that can be removed, perhaps not without some difficulty (for I have had a patient plead for his pipe with tears in his eyes), and certainly can always be resumed with remarkable readiness; in a word, a most favourable subject of observation by experiment. It is well, too, to begin the study of tobacco-heart in young men whose circulation is still structurally sound; and thereafter to follow up the subject in middle-aged and old persons. Adopting this line of inquiry, I have found that the uncomplicated effects of tobacco on young healthy hearts as they present themselves clinically are palpitation in every instance, a sense of irregular action,[2] post-sternal oppression and pain in half the cases, and in one out of every eight sufferers either angina or uncomfortable sensations in the left arm. Faintness or actual faints occurred in one-third, and giddiness and a feeling of impending death in a smaller proportion. Turning to the physical signs, the heart proves to be of ordinary size in 50 per cent. of the patients; in a few it is very slightly enlarged; the præcordial impulse is often very weak, but occasionally increased in force and frequency and almost as often irregular as not; the pulse tension, with insignificant exceptions, I have always found low. Very interesting, in the light of what I shall tell you later, is the fact that out of 20 of these patients complaining of the heart not one presented a cardiac murmur beyond a weak mitral systolic bruit, varying with posture or cubitus.

Now we are in a position to study the tobacco-heart in a man, aged 40 years; and again let us begin with a man who is sound, active, and healthy otherwise. He complains of his heart, and recognises willingly (for he belongs to our own profession) in the discomfort and anxiety from which he suffers the penalty of having smoked for years the strongest and blackest tobacco that he could buy. Yet his heart is not enlarged, and the cardiac sounds may be described as ordinary were they not peculiarly irregular, the frequency changing every moment and a falter occurring at short intervals. There is not a trace of murmur to be found in connexion with the valves and orifices. At ages over 40 years a clinical study of the tobacco-heart is highly instructive from a practical point of view. Whilst palpitation is still the common complaint, pain, including angina, is put forward more prominently, and so are faintness, actual faints, a feeling of impending death, and a sense of cardiac irregularity, each intermission being accompanied with a sudden stab through the præcordia. In these subjects the heart is more frequently found to be large and feeble, the same weak systolic murmur is occasionally to be heard, the radial pulse is often irregular, and the vessel-wall is thick. This, you will notice, is a combination of symptoms and signs sufficient to alarm the casual observer. But when we examine it more deliberately, in the light of our study of the tobacco-heart in young subjects on the one hand, and of our knowledge of the normal or natural condition of the heart and arteries at 60 years of age on the other hand, we are able to reassure ourselves and our patients. We are justified in concluding not only that every cardio-vascular lesion which may happen to be found in tobacco-smokers is not to be put to the credit of tobacco, but *vice versâ*—and this is of more interest to us in our present inquiry—that præcordial pain, angina, faintness, and irregular pulse in a man, 60 years of age, with a full-sized heart are not to be hastily regarded as evidences of grave disease without further inquiry as to his habits. The cardiac enlargement and large pulse may be nothing more than the result of a life of bodily and mental activity; the præcordial distress may be the result only of tobacco. How very necessary this caution is will be impressed upon your consideration by the two following cases. The first is that of a man, 60 years of age, actively engaged in professional pursuits, who first suffered from præcordial pain of an alarming character four and a half years ago and has had attacks since, particularly during exertion and after meals. One day last autumn, at the end of many hours' hard work, accompanied by at least 18 cigarettes, he was rushing off to dine with a friend when he was suddenly seized with præcordial pain, which he described as fearful, radiating down the left arm. He broke into a cold sweat, thought that his last hour had come, and for a short time had impairment of consciousness. Shortly after this event he took the advice of his medical men and gave up tobacco—shall I say for a time?—and from that day to this, now six months, he has had no further trouble with his heart. The second case

[1] Lecture I. was published in THE LANCET of March 9th, 1901, p. 692. Lecture III. will be delivered on April 1st.

[2] A medical friend who has suffered from tobacco-heart assures me that at one period he could distinguish the contractions of the auricles and ventricles.

is equally striking. A man, aged 55 years, of fairly active disposition and somewhat full habit of body, was suddenly seized with angina pectoris in October. 1899. The pain was of a dull bursting character over the region of the heart; and it passed into the left shoulder, down to the elbow, and settled particularly in the wrist. At the same time there was pain in the upper maxillary region. The heart slowed down from 75 to 50, and the sufferer felt that he was dying. From that time anginal attacks occurred in rapid succession, five, six, nine, or even 11 in a single day; occasionally they came on in the night. This experience continued for nearly two months on end; indeed, it was six months before the angina finally ceased. It was instantly relieved with amyl nitrite; nitro-glycerine was unsuccessful. In the course of giving advice to this patient I fortunately discovered that he had just laid in a stock of 2000 cigars. The line of treatment was obvious, and the result has been, as I have said, complete recovery.

I have dwelt on the subject of tobacco-heart perhaps longer than was necessary, addressing, as I am, a meeting of practitioners of experience and not a class of clinical students. I have done so to bring home to us an important consideration which we are all apt to overlook in diagnosis and still more in treatment—namely, that whether in an ordinary senile heart, or in a heart that is the seat of chronic valvular disease, or in arterial degeneration, something more than the pathological changes have in many instances to be regarded—usually some entirely adventitious disturbance which alone calls for treatment, such as indigestion, flatulence, worry, a bronchial catarrh, or it may be free indulgence in tobacco, tea, or coffee.

THE HEART IN ALCOHOLISM.

Let us pass on now to consider from the clinical point of view the effect on the organs of circulation of another morbific influence of a definite kind—namely, alcohol, or, perhaps more correctly, alcoholism, leaving on one side the questions of form and strength of the drink taken and its purity.

The direct effects of alcohol on the heart and vessels are by no means so easily determined as those of tobacco. In the first place they are complicated with the many indirect effects which it produces on these organs by deranging the functions of alimentation and assimilation, the nervous system and the kidneys, and with the secondary effects on the vessels and heart of chronic nephritis due to the same cause. In the second place, as we saw in my first lecture, alcoholism is very commonly associated with nervous strain, with gout and goutiness, with tobacco, with syphilis, and not uncommonly with two or more or all of these together. Eliminating as far as possible these sources of error by careful selection of cases, I find that the alcoholic heart presents clinical characters as a whole very different from those of tobacco-heart which we have just studied. The most striking and important of these are the evidences of actual pathological change in the size of the heart and the condition of the myocardium. We found no evidence that tobacco causes serious cardiac enlargement. Of 28 cases of alcoholic heart, on the other hand, which I examined clinically in connexion with the present inquiry (the average age being 46 years), only two hearts were of ordinary size, and, as a matter of fact, both of these patients were under 40 years of age. This result is in accord with my pathological observations. For instance, I have followed the condition of the heart carefully in an intemperate man, aged 43 years, and post mortem have found the heart to weigh 17 ounces, to be universally dilated in all its chambers, and to present enlargement of the mitral opening without valvular lesion, corresponding with a weak apex systolic murmur heard during life. These results are also in accord with those in Dr. R. Maguire's cases of acute dilatation of the heart from alcoholism, which he recorded as long ago as 1888,[3] and one of which occurred in a man, aged 23 years. Dr. F. W. Mott has found fatty degeneration of the myocardium in patients dying suddenly during alcoholism. With hardly an exception the præcordial impulse is weak—indeed, it is often imperceptible; the sounds are small and feeble and may be almost inaudible; in 20 per cent. of my cases a weak apex systolic murmur could be heard, varying with posture and from day to day, significant no doubt of leakage through a dilated mitral opening. The alcoholic heart is irregular and accelerated in about half the cases. The pulse tension is usually low; in one-third of the instances the radial artery was sclerosed; in one-fifth of them there was slight albuminuria; the legs may be œdematous. The complaints with which the patient comes to us are commonly of palpitation of the heart, faintness or actual faints, and præcordial pain; but it is very interesting to observe that angina pectoris is rare in the alcoholic as compared with the tobacco-heart in the ratio of from 4 to 15 per cent.

It is unnecessary for me to attempt to give you a sketch even in outline of the subject of either acute or subacute or chronic alcoholism. I would rather mention a form of acute alcoholic failure of the heart of which I have recently seen a case but which appears to be rare. A middle-aged woman at the end of each of her repeated bouts of active alcoholism has violent sickness; prostration passes into collapse, and for 24 hours or more she lies flat on her back with all the phenomena of what may be called acute air hunger; she breathes loudly and deeply, at the rate of 36 per minute, with groaning expiration. The expression is alarmed, despairing, and imploring; the nose is pinched; the surface is livid and cold; the breath is cold; the pulse is practically imperceptible at the wrist; and yet the præcordial impulse is both strong and extensive. The condition is at once one of collapse and urgent dyspnœa, much as in one form of so-called diabetic coma; and it is further remarkable in that it may pass off quite suddenly after having lasted, as I have said, for many hours. It is difficult to resist the conclusion that in such a condition as this some product of alcohol present in the blood is the cause of the remarkable phenomena.

The course of alcoholic heart in older subjects gradually becomes affected by the appearance of cirrhosis of the liver, Bright's disease, neuritis, and possibly dementia; and the method of termination is very various, including ordinary cardiac failure with dropsy. Sudden death occasionally occurs.

GOUT.

Of the many instances of disorder and disease of the heart and arteries that I have met with in gouty subjects at or over 40 years of age I have made a careful study of 29 taken from my private case-books. Twelve of these patients (10 males and two females) had suffered from ordinary articular gout; the other seventeen (six males and 11 females) had irregular gout as defined in my first lecture. The average age was 62 years. In no instance was there albuminuria. The physical condition of the heart and arteries and the complaints of the patients were remarkably alike in the two groups. In 23 out of the 29 cases the heart proved to be enlarged either on one or on both sides. In less than half the number the cardiac action was feeble; in a small number the impulse was entirely imperceptible; the heart-rate and pulse-rate were ordinary; the rhythm was but seldom irregular. It is a very remarkable fact that in no fewer than 12 out of the 29 cases of gouty heart a systolic murmur was to be heard over the aortic area, the manubrium and the right carotid, significant of disease either of the aortic arch or of the aortic valves—in every instance independently of rheumatism or other obvious cause than gout. This result is an interesting confirmation of the pathological observations of Dr. Norman Moore and Sir Dyce Duckworth, given by the latter,[4] and of the statement of Murchison[5] of his experience "that atheroma of the arteries at an unusually early period of life and diseases of the aortic valves which are not congenital and are independent of injury or rheumatism are met with far oftener in persons who are the subjects of the lithic acid dyscrasia or who have had gout than in those who have had no such tendencies." In seven (25 per cent.) of my cases a more or less developed systolic murmur was found in the mitral area, significant either of valvular atheroma and sclerosis or of leakage from ventricular dilatation. Very curiously, I have never met with aortic incompetence of gouty origin. When no murmur exists the cardiac sounds are commonly somewhat feeble and the second sound may be of ringing quality—this more commonly in goutiness than in developed gout. In agreement with this connexion the radial pulse is more often tense in the subjects of irregular than of regular gout; altogether high tension is found in more than one-half of the cases. The great majority presented distinct thickening of

[3] Transactions of the Clinical Society of London, vol. xx., p. 235.

[4] A Treatise on Gout, 1889, p. 108.

[5] Clinical Lectures on Diseases of the Liver, third edition, 1885, p. 637.

the arterial walls. Besides a distressing feeling of irregularity, fluttering or intermittency, and dyspnœa on exertion, men who are the subjects of gouty heart complain most frequently of præcordial pain; women more often of palpitation and faintness or actual faints. In quite one-fourth of all cases of gouty heart the pain is anginal and such angina may be of the most pronounced type. A friend of my own, aged 60 years, began to suffer from gouty angina (diagnosed to be such by his family physician 40 years ago) at the age of 20 years. Almost every year, sometimes more frequently, for the last 12 years of his life he was liable to be seized with intense pain in the left side of his chest which rapidly extended to the neck and down the left arm with tingling in the hand, a sense of great constriction in the chest, faintness, and distress of breathing. He had immediately to rest, whereupon the distress subsided, but it did not perfectly disappear for hours. On different occasions, also in connexion with these anginal attacks, I have known him have free hæmoptysis, complete unconsciousness, vomiting, and sudden violent evacuation of the bowels. He also suffered from articular gout and irregular gout in almost every possible form.

OBESITY AND GLYCOSURIA.

Closely related to goutiness is a clinical type of disturbed metabolism, mainly characterised by corpulence, a bulky, flabby build, and glycosuria. Of this type, represented by 12 cases in my series, nine had glycosuria and two albuminuria; eight were men; the average age was 58 years. Only one had suffered from true articular gout. Here, again, the interesting observation was made that no less than three-fourths of the number had a systolic aortic murmur, none of them a regurgitant aortic murmur, and nearly one-half of them an ill-developed mitral systolic murmur. Thus, there appears to be more liability to atheroma in the gross, corpulent diabetic even than in the gouty man. In all the cases the heart appeared to be enlarged, but accurate physical examination is difficult or impossible in many of these subjects. The impulse was more often feeble than in the gouty, the cardiac sounds were equally weak, and the second aortic sound was occasionally accentuated. The pulse corresponded with the gouty pulse in thickness and tension, but it was more often found irregular and hurried. As for the complaints of corpulent and diabetic patients, they prove to be very similar to those of gouty individuals in respect of pain, but neither palpitation nor faintness was so often mentioned.

It must not be understood from what I have just said in my account of these cases that all disturbances of the heart in gouty subjects progress to valvular or vascular degeneration with associated cardiac enlargement and degeneration. The friend whose case I have just described at some length had led an active life, as I said, for 40 years; and, as I hope to show in my next lecture, the condition is amenable to treatment if this be based on a correct appreciation of the cause that is at work. But it is equally true that if correct advice be not given, or if it be given but be neglected, as happens so frequently, the endocardium and the aorta and other arteries steadily degenerate, chronic interstitial nephritis makes its appearance, and the patient dies either slowly from cardiac failure or suddenly from cerebral hæmorrhage.

CARDIAC STRAIN.

I will now proceed to consider the clinical characters of a class of cases in which you, Sir, will be particularly interested—strain of the heart in middle and advanced life. To make this part of my subject more plain I will discuss in the first place acute strain of the heart as it occurs after the fortieth year; afterwards I will consider the condition of the heart and arteries at this age in persons who have strained them in youth or early manhod. A man, aged 65 years, who came to me complaining of his heart, gave the following account of the commencement of his trouble. Four years previously on making a very hard stroke at golf he was suddenly seized with a sensation of something having happened in his heart. He played up to the next hole, but now felt the chest oppressed; he sat down and got relief. This experience was repeated, and he gave up the round. Walking home two miles he had to sit down occasionally with the same feeling. Ever since that occurrence exertion has produced the same effect. I found the ordinary physical signs of enlargement of both sides of the heart, a scarcely perceptible impulse, the cardiac sounds extremely feeble, the second being of a finely ringing quality; the pulse tense, quiet, and regular, but the radial artery by no means sclerosed. The patient's principal complaints were of irregular action of the heart which troubled him on lying down or when he was dyspeptic, and, as I have said, of post-sternal oppression on exertion. This man had neither albuminuria nor emphysema, but he had frequently suffered from ordinary articular gout. Belonging to this type of cardiac strain I have notes in all of 11 cases which I will briefly summarise. Eight were men and three were women, and their average age was 56 years. In all but one of them the heart was large, with feeble præcordial impulse; the sounds were small and feeble; the aortic diastolic sound was often ringing; in but one case was there a murmur—aortic systolic; with few exceptions the rhythm and the rate of the heart were ordinary. In half the cases the radial artery was sclerosed; in the majority the tension was not increased. Persons who strain their heart after middle life chiefly complain of præcordial oppression, a sense of palpitation and irregular action of the heart, and pain, which may amount to angina; and they may tell us that distress and disability in these different forms have troubled them for years. You will have observed that the man whose case I have read in particular was the subject of gout; and this brings me to the interesting fact that of these eleven individuals seven were gouty. We have already seen how greatly reduced is the resistance of the cardio-vascular system in gouty subjects, and are thus prepared for the readiness with which their hearts may be strained by exertion—a matter of obvious importance prophylactically. In other cases not included in this group the strain took the form of valvular injury, or it affected hearts already the seats of old-standing valvular lesions of rheumatic origin, but the present is not the occasion to discuss these. Nor need I add that a not infrequent result of acute strain of the aged heart, whether its valves have been already damaged or its myocardium badly nourished, is sudden death.

Now, I can understand that some of you, like Professor Allbutt, our earliest and highest authority on this subject,[6] might object to this application of the term "strain" to the effect of exertion in senile hearts. You might say with great reason that exertion in these subjects is not a cause of strain or dilatation of the heart but simply a test, as it were, or the proof, of cardiac debility and disability. But when we come to consider cardiac strain a little more closely it may be maintained just as easily that every dilated heart, every dilated cardiac chamber, every dilated blood-vessel has been strained. Whether, on the one hand, valvular disease, Bright's disease, or emphysema, or, on the other hand, myocardial degeneration, has disturbed that cardinal condition of a normal circulation *that the driving power must always exceed the resistance ahead*, over-distension and dilatation of the cavities, with excessive stretching of their walls, constitute or consist in mechanical strain. However, laying aside theoretical discussions of this character, the great practical fact remains that when the aged or ill-nourished heart is over-distended from sudden and severe exertion it acts at a mechanical disadvantage, and that as often as this may occur the heart suffers more or less in its efficiency; whilst, on the other hand, in confirmation of this consideration, the heart sometimes diminishes in size and præcordial distress disappears under strict treatment continued for a sufficient length of time.

STRAIN BEFORE THE AGE OF 40 YEARS.

A more interesting group of cases than those which I have just discussed is composed of persons who have strained their hearts in youth or early manhood, have never been quite well since, and in middle or advanced life are at last driven to us for help. Cases of this character would furnish excellent material from which we might attempt to judge of the after-effects of excess or abuse of muscular exercise in the young. This is a tempting subject of discussion, but far too long and much too important to be taken up casually at this time. Therefore I will content myself with submitting to you as plainly as I can certain facts bearing on it that have come before me in my present inquiry along with a few simple observations of a practical bearing. First, then, let me read to you the history of what I should call a typical case of the kind. A man, aged 69 years, complains that as often as he walks any distance or climbs a stair he is arrested by a distressing

[6] Clifford Allbutt: System of Medicine, v., p. 843.

sense of having a bar across the lower end of the sternum, breathlessness, irregular palpitation of the heart, and a very little choking in the throat. The discomfort has lately deserved the name of pain His heart is very large, the area of præcordial dulness being increased in all directions, and measuring transversely seven inches. The impulse is weak over the left ventricle but definite in the epigastrium; the sounds come in couples, moderately good and very weak respectively, without murmur; and the radial artery is large and thick, with rather low pressure and irregular rhythm. It turns out that for the last 40 years these uncomfortable feelings have troubled this man more or less and that at three different periods of his life—at the ages of 31, 42, and 67 years—they increased so much as to incapacitate him for many months—the first time with a sudden sense of something snapping in the heart, the second time with a faint, and always, as he believes, consequent on overwork. Now this man never had rheumatism or gout or syphilis, and was always a temperate, careful liver; and he volunteers the statement that he first felt his heart at Cambridge where he was captain of his college boat and was tried for the university boat, but felt himself that he was not fit for it. Belonging to this type of cardiac strain I have selected 11 cases. The heart is always found to be enlarged, and in about one-half of the cases it is irregular. It may be weak and beating at the ordinary rate, but in other instances it is increased both in force and frequency. Only in quite exceptional cases did I meet with endocardial murmurs in this group of old strained hearts; as a rule, the sounds were ordinary, with a disposition to accentuation of the aortic second sound. High tension and sclerosis of the radial artery were respectively found in about one-half of the cases. The patients complain most commonly of a distressing sense of irregular palpitation of the heart, and very commonly of præcordial pain, but rarely of angina. Faintness, also, is sometimes mentioned. Let me hasten to add with respect to these cases that they do not include any instances of direct injury of the valves mechanically. Rupture or stretching of the aortic and mitral valves during exertion furnishes us with some very remarkable clinical cases; but it is with parietal strain that we are concerned now, physical over-stretching of the cardiac walls. The subjects of dilatation of the heart from mechanical stress suffer by no means from what is commonly called "heart disease" excepting in the worst cases, but yet they feel their hearts comparatively and it may be seriously disabled. Naturally they associate these feelings of disability with fresh attempts at exercise or exertion, as in the case which I have just read. As I pointed out in my first lecture, such exertion may not by any means be connected with the patient's occupation or daily duties, but quite often occurs during unwise attempts on his part to resume at 50 years of age the athletic exercises of his youth in order to reduce his weight, relieve his liver, or dispel gout. It is not wonderful that under such circumstances a permanently enlarged and badly-nourished heart should become embarrassed or even seriously deranged or still further strained. I have known a man, aged 43 years, going straight from London to the Alps, to have not only præcordial distress but dropsy of his legs after his first ascent in his regular holiday. Indeed, the man who has reached later middle-life with his heart enlarged by years of great bodily activity in youth, and settles down quietly on retirement, let us say, from the navy, sometimes finds that ordinary exercise is sufficient to produce alarming cardiac distress and curious loss of courage, obviously due to the muscular tissue of the thickened cardiac walls having fallen quite out of condition. How instructive, for instance, is the following case. A man, aged 60 years, who has led from his boyhood upwards a life of physical activity and at the same time of temperance, and has suffered from neither syphilis nor rheumatism, but possibly from a doubtful attack of gout, settles in a relaxing provincial town, continues to eat heartily, and considers that a little work in the garden is sufficient exercise for him. He increases in weight, his breath gets short, his heart flutters, and now he begins to get anxious about his health, fancying, as he says, that he has all sorts of diseases—a disposition to worry about himself which is entirely new and provoking to him I find his heart very large and feeble, the cardiac sounds scarcely audible, and in the mitral area a well-developed systolic murmur. The patient is ordered to reduce his diet as a whole and in respect of carbohydrates, to return carefully to walking exercise on the level, and to take a calomel purge followed by a saline twice a week and a mild strychnine mixture. He improves and continues to do so, is able to walk miles without discomfort, and in the course of two months not only do I find his heart reduced in size on physical examination, but I fail to hear the apical murmur, which must have been produced by dilatation of the left ventricle. The bearing of such a case as this on the pathology, prevention, and treatment of certain cases of senile heart disease will be obvious to all. We must be careful, however, to observe that neither unwise abandonment of wholesome exercise nor ill-advised return to physical exertion, separately or in succession, can be regarded as the only cause of the recrudescence of cardiac distress after 40 years of age in those who have strained their circulation in youth. Any one of the many circumstances that produce cardiac failure and dropsy in chronic valvular disease may lead to embarrassment and fresh dilatation of the simply enlarged heart: anæmia and chronic disease, the acute specific fevers, including pneumonia, emphysema, granular kidney, gout, syphilis, tobacco and alcohol poisoning, as well as anxiety and worry, and in women the advent of the menopause. In these cases of old cardiac strain, as in every form of chronic valvular disease and of chronic heart disease of all kinds, not only the original and permanent lesion but the recent and probably temporary circumstances that caused the failure have to be ascertained and fully respected in connexion with prognosis and treatment.

SYPHILIS.

Syphilis appears to account for a very considerable proportion of the more serious cases of heart disease which we meet with in older subjects, of course excluding chronic valvular disease originating remotely in endocarditis; but I ought to repeat here what I have already mentioned, that syphilis as a cause of cardio-vascular lesions is very often associated with other morbific influences, particularly strain and alcohol. Of its position as the principal cause of serious disease of the valves as distinguished from the walls of the heart originating in middle life there can be no question. No fewer than nine out of 28 patients of whose cases I have private notes were the subjects of double aortic disease; practically all the others had a loud ringing second sound over the aorta, significant of degeneration; pain of anginal type in half the cases was the prominent complaint; and two-thirds of the subjects had sclerosis of the radial artery. When we consider that syphilis does also affect the myocardium primarily, that fibroid disease, chronic aneurysm and fatty degeneration of the heart are all traceable to specific disease of the coronaries in many instances, and finally, that many of the subjects of syphilitic cardio-vascular disease have perished before the age of 40 years, the magnitude of this cause can be fully realised. I believe that the profession in general have not yet woke up, if I may say so, to the gravity of this subject. How seldom we inquire for a history of specific disease in patients coming to us with cardiac disease in middle life. To no one, as far as my reading goes, are we so much indebted for the truth on this subject as to my friend and colleague Dr. Mott. 13 years ago he published a paper on 21 cases of sudden death from cardio-vascular disease, and in nine of these there was a history of either actual or probable syphilis. What was of greater interest, however, at that early date, he drew attention to the association of syphilitic cardio-vascular lesions with Bright's disease in the broad acceptation of the term. Dr. Mott's work in the interval on syphilitic lesions of the arterial system of the brain has been so brilliant and is so generally known, that it requires nothing more than this appreciative mention by me; and it saves me the trouble of an excursion into the large subjects of cerebral hæmorrhage and thrombosis in connexion with these lectures.

NERVOUS STRAIN.

I confess that it is difficult to say much that is of real diagnostic value on the clinical aspect of cardio-vascular disorders and disease from nervous strain As I remarked in discussing this subject from the etiological point of view, several factors come into play besides nervous excitement followed by exhaustion and their effects on the heart, great vessels, and cerebral arteries; and the cases, therefore, are found to present a puzzling variety of features. Certain clinical characters are, however, common to the majority. Arterial tension is high; the radial artery is thick, sometimes markedly so; the heart

enlarges; and in about one-half of the cases a systolic murmur is to be heard either in the aortic or in the mitral area significant of chronic endocardial lesions. I have already pointed out that in some of these patients polyuria and temporary albuminuria occur along with the high tension and increased action of the heart; but later the heart may fail. The direct cardiac symptoms of which they complain are of the ordinary charac er, palpitation with accelerated cardiac frequency and pain—not angina—being the most common at first; feelings of indescribable discomfort and suffocation in the more advanced stage.

After having reviewed, as I have attempted to do, the principal clinical chara ters of the diseases of the heart in middle and advanced life under their several causes, it may appear for a moment strange that the most important of all the clinical types of cardio-vascular degeneration has been mentioned only incidentally. This is chronic Bright's disease, which, from its complex pathological relations, its widespread effects on the heart and circulation and the organs that they supply, and the far greater gravity of these than those of any of the other causes which we have studied, unless it be syphilis, is a subject of endless interest to us all. Fortunately for me, my immediate predecessor in this chair on the medical side, our distinguished Fellow, Dr. Samuel West, took for his subject the Clinical Aspects of Granular Kidney, and thus relieved me of a task which he was so much better able to discharge than I am.

BLACKWATER FEVER.[1]

BY J. W. W. STEPHENS, M.D. CANTAB.

I PROPOSE as briefly as possible to set forward what I believe are established facts concerning blackwater fever and to leave out of consideration mere hypothesis; and the facts as to its relation to malaria are those which it has been the chief aim of most observers to determine. I shall also leave out of consideration evidence of this kind which is not supported by microscopical examinations of the blood. A microscopical examination is of the utmost importance, but I believe that we have facts in our knowledge now which justify us in saying that the conclusions drawn from such an examination have been too comprehensive, and that, in fact, it is not true to say that if microscopical examination shows no parasites in the blood therefore the case is not one of malaria.

In making examinations of the blood of Europeans supposed to be suffering from malarial fever and who had not taken quinine our diagnosis was not infrequently against malaria, as after repeated search we could find no parasites or pigment. But can we get malarial fever without parasites in the peripheral circulation? The following cases prove, I think, that we can.

CASE 1.—There were daily rises of temperature to about 100° F. Then after a few days there was a tertian rise. There was daily vomiting. It was only after prolonged examination for some days that a single ring-form parasite was found.

CASE 2.—There were well-marked subjective symptoms and daily rises of temperature to above 100° F. Several examinations of the blood were made before any quinine had been taken. After prolonged search no parasites were found. In a few days the temperature was normal. A leucocytic count now gave: large mononuclear, 24 per cent.; small mononuclear, 10 per cent.; and polymorphonuclear, 66 per cent. We felt certain now (*vide* below) that this was a case of malaria, and a re-examination of the blood taken before the exhibition of quinine now revealed, again after a long search, one parasite, confirming thus the diagnosis based entirely on the leucocytic count.

CASE 3.—The following is a case where clinically there was not the slightest doubt as to the malarial nature of the attack, but there was absolutely no proof objectively. On Oct. 28th, 1900, the evening temperature was 99·4° F., the patient feeling unwell. At 5 P.M on the 29th the temperature was 103°. There was much vomiting. An examination of the blood proved negative. Quinine (1·0 gramme) was administered, but it was mostly vomited. On the 30th, at 6 P.M., the temperature was 100° and the patient was vomiting continually. Examination of the blood again gave negative results. Quinine was administered hypodermically. The leucocytes when counted gave the following percentages:—

—	Oct. 29th, 5 P.M.	Oct. 30th, 8 A.M.	Oct. 30th, 6 P.M.
Large mononuclear	16·4	15·2	15·0
Small ,, ...	7·0	11·2	14·0
Polymorphonuclear ...	76·6	73·6	71·0

Other cases will be found in our report. Türk [2] also has noticed the same fact.[3] Celli [4] has lately published similar facts. He says that in first attacks parasites may be quite scanty and not infrequently completely absent in the circulation. Ziemann [5] finds that in the Cameroons the number of parasites in the circulation is often in no wise proportional to the gravity of the attack. Plehn has also noticed this in the Cameroons. Our own observations, then, establish the fact that malarial fever is not necessarily accompanied by parasites in the peripheral circulation, so that it does not follow because in a case of blackwater fever parasites are absent that it is necessarily non-malarial.

But now let us consider if there is any evidence of the existence of a malarial infection in blackwater fever, and first we must revert shortly to a consideration of what is the evidence of malarial infection in a supposed case of ordinary "fever." 1. If parasites are present it is good evidence that the case is malaria, though we must now bear in mind that the relation of the number of parasites to the severity of attack is not that absolute one that has been supposed. 2. Besides the exceptional cases recorded above which refer solely to those where no quinine had been taken we get a large class of cases where parasites are absent simply from the fact that the patient has taken or is taking more or less quinine. 3. In the absence of parasites we have still two means of proof left: (*a*) the presence of pigmented large mononuclear leucocytes; and (*b*) the relative change in the percentage of large mononuclear leucocytes. Of the first little need be said. It is only necessary to point out that the number of pigmented leucocytes may be extraordinarily small, so that it is only after an examination of all the leucocytes in an extensive sheet of blood spread on a slide that one or two are found, and again they may in undoubted malaria be absent. A negative examination here, again, is not absolutely conclusive against malaria.

The leucocytic change.—It had been previously known that in malaria the relative value of the large mononuclear leucocytes was often increased. We found that this increased ratio was often very marked up to from 20 to 30 per cent., and we were able to show that it bore an inverse relation to the tertian temperature curve, so that the curve of this increased ratio was almost an exact inversion of that of the temperature. During the pyrexia the value was normal or low, while during the apyretic periods the value was high. Whether the relative increase was a real one we were not then concerned to determine. But seeing that we had constantly this disturbed ratio bearing a definite relation to the temperature curve, its diagnostic importance seemed to us great, and, in fact, after a time a glance at a slide was sufficient to show whether or not this relative increase was present and we could deduce safely the existence of a malarial attack. It is not uncommon, then, in malaria, especially during the apyrexia, to have a large mononuclear value of even from 40 to 50 per cent. From a large number of counts of European bloods we have come to consider a value as high as 20 per cent. of the large mononuclear leucocytes as proof of a malarial infection. We may refer here to the case quoted above. In spite of long-continued search in this case previously to the taking of

[1] For the detailed facts on which this paper is based see Reports to the Malaria Committee of the Royal Society (Harrison and Sons, London), by J. W. W. Stephens, M.D. Cantab., and S. R. Christophers, M.B. Vict.

[2] Klinische Untersuchungen über das Verhalten des Blutes bei Acuten Infections-Krankheiten.

[3] We may express here our regret that while working on the blood changes in malaria Türk's monograph, "Klinische Untersuchungen über das Verhalten des Blutes bei Acuten Infections-Krankheiten," was unknown to us.

[4] Centralblatt für Bakteriologie, November, 1900, No. 17, p. 531.

[5] Deutsche Medicinische Wochenschrift, Nov. 22nd, 1900, p. 755.

TABLE TO SHOW THE OCCURRENCE OF MALARIAL INFECTION IN BLACKWATER FEVER.

No. of case.	Parasites.	Pigmented leucocytes.	Necropsy.	Percentage of large mononuclear leucocytes.	Percentage of small mononuclear leucocytes.	Percentage of polymorphonuclear leucocytes.	Proof of malarial infection at time.	Parasites present in peripheral blood.	Remarks.
2*	—	Pigmented leucocytes.	Much pigment.	22·7	14·6	60·7	Yes.	No.	—
3*	Numerous parasites.	" "	" "	55·9	—	43·0	"	Yes.	22/5/99. Before onset of blackwater fever.
		" "	—	19·3	—	80·0		No.	24/5/99. Shortly after onset.
4*	Three crescents.	" "	—	48 8	8·4	41·6	"	"	—
5*	—	—	—	30·6	7·8	61·6	"	"	—
6*	—	—	Much pigment.	—	—	—	"	—	Post-mortem examination only.
7*	—	—	" "	—	—	—	"	—	" "
8*	—	Pigmented leucocytes.	" "	12·0	7·0	80·0	"	No.	—
9	—	" "	—	23·6	6·0	68·6	"	"	—
10	—	" "	—	27·0	19·0	54·0	"	"	—
11	Parasites.	" "	—	21·5	16·4	61·0	"	Yes.	12/7/00. Case seen earlier than usual
		" "	—	11·5	12·0	75·0	"	No.	13/7/00. Blackwater fever still present
12	—	—	—	6·4	4·6	89·0	No.	"	Only a single blood examination made.
13	—	Pigmented leucocytes.		21·0	13·5	65·0	Yes.	"	—
14	—	—	[illegible]	23·0	23·0	54·0	"	"	—
15	—	—	—	24·0	13·6	61 5	"	"	—
16	—	Pigmented leucocytes.	—	12·7	10·5	77·0	"	"	6/10/00.
				15·5	10·5	74·0	"	"	7/10/00.
17	—	—	—	22·7	12·6	64·0	"	"	Convalescent, six days.

* NOTE.—See the First Report to the Malaria Committee. Case 1 is not included on account of the insufficiency of the examination.

quinine no parasites or pigment had been found. The temperature after some days reached normal; a leucocytic count was then made and 20 per cent. of large mononuclear were found. We felt quite certain now that this was a case of malaria, and consequently again examination was made of the original films, and now after prolonged search one, and only one, typical young ring was found. This increased mononuclear value was also found in the blood of native children infected with parasites but presenting none of the ordinary symptoms of malarial fever. It should be added, too, that in blackwater fever, as in malaria, there is often a well-marked leucopenia as low as 2000 per cubic millimetre.

To two subsidiary means of diagnosis—viz., the presence of pigmented leucocytes and the leucocytic change—we attach great importance, and, indeed, they may be the only means of diagnosis, except the clinical features, we have; if the patient is taking quinine, for one of the most striking effects of quinine even in small doses is to cause a disappearance, it may be complete, of parasites from the peripheral circulation, even though the fever does not necessarily abate. We can now consider what the evidence is of the existence of a malarial infection in blackwater fever. It should be also borne in mind that the patients had in all our cases already taken quinine in varying amount before the onset of blackwater fever (vide Table).

In only three out of 16 cases were parasites present. In Case 3 the parasites occurred in large numbers during the course of a typical malignant tertian; when blackwater fever supervened, after the giving of quinine, they then disappeared completely. In Case 11, which was seen earlier than usual, parasites were at first present, but they disappeared completely next day. In Case 4 a total of three crescents only was found. So that, excluding the case where parasites were present before the attack only, we have two out of 16 cases—12·5 per cent—showing parasites or, excluding the case with three crescents only, one out of 16—6·3 per cent. On the other hand, Koch [6] in his collected series of 41 cases finds parasites in 18—i.e., 43·9 per cent. If, however, we analyse this table we shall see that though the occurrence of parasites is far less than in Koch's cases, yet there exists evidence of a malarial infection in 93·7 per cent. of cases, for in Cases 2, 4 5 8, 9, 10, 13, and 16 at least one typical crowded pigmented leucocyte was found, and in several cases these bodies were common. In Cases 14, 15, and 17, although neither parasites nor pigmented leucocytes were seen, yet the number of large mononuclear leucocytes was in every case over 20 per cent., a percentage which we believe to be strong evidence of a malarial infection. But we have further evidence of a somewhat different kind. It has been stated by A. Plehn [7] and by F. Plehn [8]—and a knowledge of their excellent contributions to the subject is indispensable for everybody who would consider the question—that if before the onset of the attack of blackwater fever the blood of a patient be examined parasites will always be found, and, in fact, an examination of such published cases—and they are necessarily very few, for unfortunately blood examinations are often entirely neglected—shows that this is so, and so far I have not been able in the published cases to find an exception to this, provided, of course, that those cases are not considered where the patient has already taken quinine. But I can readily believe that exceptions may be found, as I have already shown that typical malaria (without quinine) may exist without parasites in the peripheral blood. Thus, to give examples of this condition. Plehn.—Case A.—4/1/90: fever; scanty parasites. 5/1/90: quinine, 1·0 gramme; two hours later blackwater fever; no parasites. Case B.—4/3/90: occasional parasites. 5/3/90: morning, quinine, 1·0 gramme; 12 noon, blackwater fever. 6/3/90: no parasites. Koch.—Case 12.—Before the onset of blackwater fever tertiana simplex duplicata with sporulating forms; 0·75 gramme of quinine given; blackwater fever; disappearance of parasites. This case is peculiar in that three weeks previously during an attack of blackwater fever malignant tertian parasites were present, but in the peripheral blood there were no parasites of tertiana simplex. Ziemann.[9]—A case of malaria; parasites present; 1·0 gramme quinine; blackwater fever. Stephens and Christophers.[10] Case 3.—22/5/99: typical malaria; numerous parasites; quinine, 1·8 grammes, hypodermically. 23/5/99: parasites very scanty; 12.30 noon 0·6 gramme quinine. 24/5/99: 11 30 A.M., blackwater fever; parasites absent.

[6] Über Schwarzwasserfieber (Hämoglobinurie), Zeitschrift für Hygiene und Infections-Krankheiten, dreissigster Band, 1899.

[7] Beiträge zur Kenntniss von Verlauf und Behandlung der tropischen Malaria in Kamerun.

[8] Die Kamerun Küste.

[9] Deutsche Medicinische Wochenschrift, Oct. 9th, 1900, p. 643.

[10] Reports to the Malaria Committee of the Royal Society, First and Fourth Series (London: Harrison an Sons).

Again, a consideration of those cases where parasites are found during the attack makes it clear that, as a rule, they disappear very rapidly, and so constantly is this the case that one is led to suspect that there is some other chemiotactic factor (possibly the hæmoglobinæmia) at work besides the quinine in producing this. These cases, then, show that if a patient's blood is examined before the attack of blackwater fever and before the taking of quinine parasites will generally be found in the blood—that is to say, that the evidence, where procurable, shows that the initial illness of which a history is present is malarial, and we cannot lightly pass over these facts and fail to note that when the blackwater fever has supervened the evidence from existence of parasites is much less—in Koch's collected cases, for instance, 23 out of 41; in our own only two out of 16.

We have further again evidence of another class of cases—viz., those where no parasites were found during the attack of blackwater fever, yet they have reappeared later under conditions which exclude the possibility of re-infection, as in Europe; in fact, a relapse of malaria has occurred after the blackwater fever. Numerous examples of this might be quoted. We have already incidentally mentioned Case 12 in Koch's series, where three weeks after an attack of blackwater fever (parasites = tertiana maligna) a relapse of tertiana simplex occurred. Of the existence of this infection there had not been previously the slightest evidence. Koch.—Case 10.—Patient in East Africa, blackwater fever, no parasites; in Germany, many relapses, tertian parasites. Ollwig.[11]—16/7/98: patient in Germany; fever; quinine; blackwater; no parasites. 31/7/98: parasites; malaria tropica. Stephens and Christophers.[12]—Case 4.—8/7/99: blackwater fever. 9/7/99: crescent. 10/7/99: quinine; blackwater fever; no parasites; left hospital 22nd. 29/7/99: typical malaria; numerous parasites.

Let us now consider the post-mortem evidence. It has been argued that the finding of pigment post mortem means little in a resident in the tropics—that everybody might show this condition. Not only is this not so, but, on the contrary, Koch, in two post-mortem cases of blackwater fever in patients who had had many attacks of fever, records the complete absence of pigment in the organs, and we have also examined the organs of a patient long resident in malarial regions without finding a trace of pigment. It is necessary, however, in describing the existence of pigment to notice its amount and distribution, particularly as to its occurrence in the endothelial cells and the leucocytes of the tissues, e.g., spleen, for from this we can estimate the relation of the pigment to the actual attack. While in two of our collected cases we have not complete evidence on this latter point, yet in three post-mortem examinations made by us the evidence of very recent malaria was conclusive. It is important to note that one case in which before the blackwater fever there were numerous parasites, but afterwards none, showed post mortem in the spleen, not rings, but numerous parasites closely resembling developing gametes. Thin,[13] also, has recorded two cases where sporulating parasites were found in the brain post mortem with only a scanty development of pigment in the organs. With reference to Koch's two cases where pigment was absent it should be noted that death occurred on the ninth and fourth day of the disease respectively, possibly intervals long enough to allow of the disappearance of pigment resulting from mild attacks. We have, then, the following data with regard to the presence of pigment:—

Author.	Case.	Pigment.	Remarks.
Koch	1-2	Negative.	No parasites, no pigment.
Thin	3	Yes.	Pigment very scanty in spleen; sporulating parasites in brain.
F Plehn	4-16	Yes.	In all malarial pigment in organs, but sometimes very little.
Stephens and Christophers	17-21	Yes.	In all pigment in abundance.

This shows the presence of pigment in 19 out of 21—i.e., 90·4 per cent.

Bearing in mind our first conclusion that the absence of parasites did not necessarily exclude malaria, we have actual evidence of the existence of a malarial infection brought from these five points of view: (1) existence of parasites during the attack; (2) pigment and mononuclear percentage increase; (3) parasites before the attack; (4) parasites after the attack; and (5) the post-mortem evidence. To us it seems that this cumulative evidence is irresistibly strong. It is, perhaps, necessary to meet here an objection which has been raised of a similar nature to that brought against the post-mortem evidence—viz., that in any series of Europeans in the tropics taken at random would be found similar evidence of malaria. This supposition again is not supported by the facts, for of 44 Europeans examined among communities especially liable to malarial fever parasites were found with the greatest rareness and pigmented leucocytes not more frequently. Thus out of 44 cases only two showed parasites (crescents) and only two pigmented leucocytes—i.e., less than 10 per cent.—whilst if we include those patients who showed even a slight mononuclear increase the percentage still only reaches 20. For the complete details on these and other points we must refer to our reports to the Royal Society.

We regard, then, the evidence based on an analysis of our own cases as proving the existence of a malarial infection. If we consider also the evidence of a slightly different nature which we have brought forward we regard the conclusion that blackwater fever is essentially a malarial process as irresistible—that is to say, that blackwater fever can rarely, if ever, occur except in a person who is suffering from, or has quite recently suffered from, a malarial attack.

There still remains another side to the question—viz., is quinine the immediate cause of an attack of blackwater fever? Those who have so hastily criticised Koch and who attribute to Koch opinions not to be found in his writings do not appear to be acquainted with the fact that it was 40 years ago that Tomaselli[14] in Sicily published his first case of quinine intoxication in malaria, that F. Plehn and A. Plehn in the Cameroons have published a total of over 80 cases of blackwater fever, and that these observers had, before Koch worked on malaria, arrived at the conclusion that in the vast majority of cases quinine was the determining cause. Very exceptionally they allowed that the action of quinine could be excluded, and Koch has also virtually admitted this, suggesting that insolation even may be responsible for an attack.

There is little to be added to the question. Anyone who has read Tomaselli's, Plehn's and Koch's cases can surely have no doubt that quinine is the immediate cause of blackwater fever. In none of our cases could we exclude its action and the interval between the administration of quinine and the onset of hæmoglobinuria was very constant—i.e., from four to 10 hours. We, moreover, had one case in hospital (Case 4) in which quinine appeared definitely to induce a severe attack of hæmoglobinuria. It must be admitted, however, that it can be induced by other causes than quinine, for occasionally cases—e.g., by Plehn—are recorded in which it is positively stated that no quinine was taken. While not doubting this, we would point out how unreliable the statements of patients are, and we have notes of many cases in which the statements of patients on this point are directly opposed to the facts. Secondly, it is recorded among natives, who presumably do not take quinine. The authority of observers such as Plehn makes us accept the statement. We failed ourselves to find a case among natives; it was quite easy, however, to procure cases of so-called blackwater fever, but these were due to bilharzia hæmatobia. The state of things may perhaps be best illustrated by the analogy of hæmatoporphyrinuria. It is agreed that here sulphonal is the commonest cause, yet among those taking sulphonal it is a rare disease; on the other hand, it is not denied that hæmatoporphyrinuria also occurs among those who have not taken sulphonal.

It is worth recording here a series of observations we made on the isotonic point of the blood in malaria and blackwater fever. We found that in patients suffering more or less frequently from malaria the isotonic value is constantly raised, while in blackwater fever we found a value below that of normal blood. This low value, it is said, also occurs after loss of blood from various causes. In African natives also we found not uncommonly an isotonic value lower than that observed in any European. The difference was as great as 0·04–0·06 per cent. salt. It is possible that the raised isotonic value

[11] Ein Beitrag zur Behandlung der Malaria mit Methylenblau, Zeitschrift für Hygiene, Band xxxi., 1899, p. 317.

[12] Loc. cit.

[13] Brit. Med. Jour., 1899.

[14] La Intossicazione Chinica è l'Infezione Malarica.

in malaria may give some indication of the extent to which the corpuscles of the patient have been subjected to an injurious influence and so give some indication of those cases of malaria in which it would be dangerous to give quinine. It is interesting to note in this connexion that if to a dog a quantity of toluene-diamin be administered insufficient to produce hæmoglobinuria, yet we have in these cases a raised isotonic point—i.e., a lowered resistance of blood cell (Lapicque et Vast[15]).

Another factor that is of some use as an index of danger is the presence of albuminuria or a high-coloured urine. The colour in these cases is not due to bile pigment, but may be due to urobilin.

To conclude, blackwater fever is essentially a malarial infection in which quinine is the most common immediate determining cause of intoxication. Protection from malaria will insure protection from blackwater fever. Complete protection from malaria may, as my own two years' experience in tropical Africa under all kinds of conditions shows, be attained without the taking of any quinine, by paying scrupulous attention to clothing and the use of the mosquito net.

THREE CASES OF ACUTE DIFFUSE SEPTIC PERITONITIS RESULTING FROM APPENDICITIS; OPERATION; RECOVERY.

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CASE 1.—A lad, aged 13 years, was on Jan. 6th, 1900, getting ready at 1.45 P.M. to go into Newcastle with his mother, when he felt a little pain in his abdomen, low down on the right side. He spoke of it at the time, but, thinking that it was ordinary stomach-ache, he put on his coat and caught the 2 o'clock train at Heaton. Whilst shopping in town the pain became steadily worse and he had to walk about holding on to his mother's arm. Eventually he could bear it no longer and he was taken to the station, where he sat waiting for a train to go home. His mother then noticed that he was very ill. On arriving at Heaton at 4 o'clock he became much worse and was doubled up with pain, and whilst walking with great difficulty up the inclined way out of the station he vomited. After getting home he became feverish and was put to bed. At 10.45 he had a rigor and vomited again. At 1.30 A.M. on the 7th he was seen by Dr. A. Livingston who prescribed for him, and he slept until 7 o'clock, when he woke up feeling rather better but in a burning heat and the pain was still there. At 10 o'clock he was seen by Dr. F. Russell who found him delirious. During the afternoon he again had a rigor and he vomited twice. Heat was applied to the abdomen and gave some relief, but he still wandered in his talk. When I saw him with Dr. Russell (at 10 P.M.) he looked very ill, with pinched features, high temperature, rapid pulse, and dry tongue. His abdomen was slightly distended, rigid, and extremely tender all over. Dr. Russell agreed with me that his condition was due to general peritonitis and that the only useful treatment was an operation. As there was neither accommodation nor preparation for such treatment in his home, the boy was wrapped up in the bedclothes in which he lay and was at once taken in a cab to a private hospital. At 1 A.M., on the 8th—i.e., 35 hours from the onset of the illness—assisted by Dr. Russell, I operated by the method introduced by Mr. J. Rutherford Morison, making a long oblique incision from the outer edge of the right rectus abdominis upwards, outwards, and backwards into the loin. The abdominal cavity was full of milky pus and, after the excess had poured out of the wound, the appendix was found lying with its tip in the pelvis. There were no adhesions and the appendix was perforated. It was removed and the abdominal cavity was mopped out with gauze until all the pus appeared to have been cleared away. Gauze wrung out of normal saline solution was then put in as a drain; one piece in the pelvis, one amongst the small intestines, and one up to the liver. All the loose ends of gauze were brought out together at the hinder end of the wound. The wound was then sewn up in layers with catgut and a dressing was applied which was changed every four hours. The after history was uneventful and the boy is now perfectly well.

CASE 2.—A youth, aged 17 years, was at work on the morning of May 23rd, 1900, but he felt weary and complained of a little pain in the lower half of the abdomen. He went home and took his midday meal as usual and then lay down on a couch. Whilst so lying he felt a sudden acute pain in the abdomen, but did not vomit. His mother applied hot fomentations and gave him a dose of castor oil which acted freely, and he felt easier. (It appears that he had had two similar attacks—one two years before and the second a year afterwards—that both had been treated in the same way, and that each had passed off in a few hours.) He had a good night and in the morning he felt better, but he complained of feeling "sore across his belly." He got up, dressed, and lay on the couch. At 1.30 P.M. he jumped up suddenly and screamed with a violent pain in the abdomen. He then turned faint and vomited. He was seen for the first time by Dr. W. L. Ruxton at 3 o'clock, and at 4 o'clock I saw him in consultation. He was then very ill, with an anxious expression, a fast pulse, a slightly raised temperature, and a dry tongue. He appeared to be in great pain and his abdomen was very tender, hard, and slightly distended. He was taken at once in a cab to a private hospital where I operated at 7 P.M.—i.e., about 30 hours after the acute onset of illness—by the same method as was employed in Case 1. There was such a large quantity of similar milky pus that I turned him on to his side and allowed the pus to run out. His appendix, which was perforated and non-adherent, was removed, the abdomen was mopped out with gauze, and three gauze drains were left in—one under the liver, one in the pelvis, and one amongst the coils of small intestine—the ends of all emerging from the hinder end of the flank incision. During the two following days the patient was very ill and the abdomen became gradually distended with flatus. On the morning of the 27th he became unconscious, and I thought that he was dying. No flatus had passed for 48 hours. The tongue was dry, the teeth were covered with sordes, and the pulse was becoming weaker and steadily quicker. As no flatus came through an ordinary rectal tube I passed a Kelly's long sigmoid speculum, and a little flatus and watery fæces came away. By repeating this many times I got away what in the aggregate amounted to a large evacuation. The tube was passed every half-hour during the morning and afternoon, when, to my surprise, the pulse began to fall and the patient improved slowly through the night. He regained consciousness, made an excellent recovery, and is now in perfect health. I had never previously seen anyone who was so ill with acute septic general peritonitis recover.

CASE 3.—A married woman, aged 35 years, was on Nov. 13th, 1900, shopping all day in a town 10 miles distant from her home. On her return in the evening she did not feel well, and during the night she woke out of her sleep with great pain all over her abdomen. Having had similar attacks, which she had been told were due to appendicitis, on two previous occasions—the first in June, 1899, and the second six months later, during each of which she was laid up in bed for a few days—she thought that this illness arose from the same cause, and she sent for Dr. F. Hunton, of Sedgefield, who saw her on the morning of the 14th. Dr. Hunton found her with raised temperature, fast pulse, rigid but not distended abdomen, and marked tenderness in the right iliac region. During the morning she vomited. A purgative was administered and hot fomentations were applied. She continued to feel ill during the whole of the 14th, but the pain subsided somewhat towards night. Her bowels were moved and she vomited during the evening. At 1 A.M. on the 15th—i.e., nearly 24 hours after the initial attack—she was suddenly seized with excruciating pain in the abdomen, vomited immediately, and became very ill and collapsed. Early in the morning, when seen by Dr. Hunton, she was much worse than on the previous day. Morphia gave some relief. Early in the afternoon she was again seen and it was then noticed that her abdomen was beginning to swell. At 7 P.M. I saw her with Dr. Hunton. She was then looking very ill; she had pinched features, a dry tongue, and a feeble voice. Her pulse was rapid and hard. Her abdomen was moderately distended and the right iliac region was excessively tender, so much so that I could not make out whether or not there

[15] Comptes Rendus Hebdomadaires de la Société de Biologie, May, 1899, p. 369.

was a lump It was clear, however, that she was suffering from acute peritonitis, that her intestines were beginning to distend, and that if she could not be relieved she was likely to die. Believing that the source of the peritonitis was a rupture of the appendix we decided to operate at once, which I did by the same method as in Case 1 and Case 2. The appendix was found to be perforated and there was a great quantity of thin and milky pus amongst the small intestines, in the pelvis, and up under the liver. I removed the appendix, mopped up the pus with gauze until the peritoneum appeared to be clean, and then placed one gauze drain in the pelvis, another under the liver, and a third amongst the small intestines, bringing them all out at the after end of the flank incision. The following morning the temperature was 99° F., and the pulse was 100 and of good character. Slight sickness and hiccough, with some abdominal distension, were present. The gauze was removed on the fifth day. The patient made a good recovery and is now in excellent health.

These three cases are strikingly similar and are typical of the "fulminating" form of acute appendicitis which is the most fatal of all varieties. In the initial stages they were not distinguishable from ordinary cases of appendicitis in which recovery could take place either by resolution of the inflammatory process or by limitation of the disease to the formation of an abscess; yet in the more advanced stage, and without warning, the life of each patient was placed in immediate danger and death could only be averted by immediate operation, performed with the minimum amount of preparation which could be desired. In each of these cases there was a premonitory stage, lasting for a few hours, during which the patient felt unwell and uneasy in the abdomen. This was followed by the sudden development of acute symptoms which subsided somewhat after several hours of severe pain. This lull was followed in about 24 hours from the initial acute attack by strikingly violent and sudden increase of all symptoms and in seven or eight hours more the abdomen was found to be full of pus. In each case the appendix was seen at the operation to be acutely inflamed without any surrounding adhesions and to have a gangrenous perforation through its walls

The interpretation which I put on these symptoms is as follows. The appendix being strictured, or an enterolith becoming impacted fluid collected and distended the appendix, causing uneasiness—appendicular colic. This, I believe, might pass away and give no further trouble, but the tension in the appendix increased and then the pain, owing to the stretching of the peritoneal coat, became very great—the initial attack. The contents being septic, and no relief of tension having taken place, the appendix became acutely inflamed and the pain was aggravated—the period of local pain and of feverish symptoms. As the inflammatory process advanced the walls of the appendix gradually softened and lost their power of keeping up tension—the lull, during which the patient felt less pain, in fact, was "rather better." The relief was similar to that experienced when an inflamed lymphatic gland goes on to suppuration, for in such a case the pain becomes less when the capsule of the gland softens and stretches. After this period of relieved tension the peritoneal coat of the appendix gave way at one or more points, possibly where the gangrenous process had been accelerated by the pressure of an enterolith, and the septic contents escaped—the acute exacerbation of pain and vomiting. The entire process was so rapid that no adhesions had time to form, and from this stage onwards the symptoms of acute appendicitis became lost in the much graver symptoms of acute general septic peritonitis.

If, as I believe, the above is a true picture of the pathological process as revealed by the symptoms in these "fulminating" cases, then it may be possible to formulate some rule which will enable us to recognise them and to operate before such a catastrophe as general septic peritonitis supervenes; for the process differs only from the course of events in ordinary cases, which terminate by resolution or in the formation of an abscess, in the virulence and rapidity of the process and in such changes as are due to that rapidity. The difference is one of degree but not of kind. I do not wish to advocate operating in all cases of acute appendicitis; on the contrary, I believe that it is a fact, which is borne out by the experience of every medical man who is engaged in general practice to whom I have spoken, that for one case which requires operative treatment there are many which do well without operation. Not only many medical men but nearly every layman has been shocked by the death of some patient or acquaintance from peritonitis within two or three days of his being seen in perfect health. These cases are almost without exception examples of peritonitis following fulminating appendicitis; and although they represent only a small percentage of the total number of cases of appendicitis they actually amount to a great number. On Nov. 16th, 1900, I saw a man, aged 38 years, with the following history. He was at work all day on the 14th. During the evening, being then in his usual health, he went to the water-closet, but returned to the house looking ill and complaining of pain in his abdomen. The pain continued all night and he vomited. He was ill all the next day. Early in the morning of the 16th the pain became much worse and he vomited; he looked very ill and his abdomen commenced to swell. At 6.15 P.M. I saw him in consultation. He was lying on his right side with his legs drawn up. His abdomen was greatly distended and was dull in the right half; it was very tender, especially in the right iliac region, where there was a lump as big as a fist—so tender that the man cried out when it was touched although he was then dying. His medical man told me that this was the third similar case in his practice in a fortnight where the patients had died and all of them had died within 48 hours of the onset of symptoms.

In cases where adhesions are formed and an abscess develops there is not the same immediate necessity for operation as in these acute cases, where prompt action must be taken because a very few hours' delay may result in the death of the patient; therefore it is of the utmost importance to be able to recognise these urgent cases before perforation of the appendix occurs. The rule which I follow is this. If the patient is seen within a few hours of the onset of the illness hot fomentations are applied to the abdomen. Morphia is only given in cases of urgent need. I then wait and see what progress is made. If there is steady improvement waiting is persevered in as long as this continues. By "improvement" I mean improvement in *all* the symptoms. It is not enough that pain and tenderness should be less, for the period during which the pain diminishes may be the very time in which an operation should be performed. All the symptoms should subside together: the temperature should fall, the pulse should become less frequent, local pain and tenderness should grow less, and the patient should look better. The last is an uncertain quantity but a very important one. The chief points are a diminution of the local tenderness and lessened rigidity of the muscles, but these must not be taken as a certain guide when the patient continues to be otherwise ill. In illustration of this I may mention a case which I saw on May 2nd, 1899, with Dr. George R. Murray and Dr. W. T. Hall, at Whitburn. The patient was a little girl suffering from a first attack which began the day before. The local pain and tenderness had much improved, but the child still looked flushed and ill, and had a foul tongue and raised pulse and temperature. We decided to operate at once because we thought that the greater risk lay in leaving her alone. The appendix was found to be lying across the pelvis with its tip near the brim of the left side. There were no adhesions whatever, and the peritoneal coat of the appendix was bright scarlet, whilst, on opening it, the mucous and muscular coats were seen to be completely gangrenous. We all felt sure that this was a case in which general peritonitis would have followed sloughing of the entire appendix, as the inflammatory process was advancing so rapidly that there was no reasonable prospect of localisation by adhesions. This child—assuming my previous explanation to be the correct one—was operated on during the period of ease in which the peritoneal coat of the appendix had softened and relaxed sufficiently to reduce the tension and with it the local pain and tenderness, but the improvement in local symptoms was no indication of subsidence of the disease.

If such a rule be followed—namely, to remove the appendix in very acute cases which at the end of 24 hours do not improve in *all* the symptoms—a large number of lives will be saved which are often, perhaps usually, lost through the operation being performed after perforation has taken place. At the same time, it is obvious that by applying such a rule a number of cases will be operated on in which, although the appendix is on the point of giving way, it is yet guarded by adhesions. Against this must be placed the risk of waiting and the possibility of abscess formation, and above all the simplicity and safety of operating at this stage must be taken into account. This, however, must not be made an excuse for a

hard and fast rule of treatment that all cases of acute appendicitis must be operated on. Surely that is not sound surgery. If the appendix has perforated and general peritonitis has become established it is then a matter of supreme importance to operate without any unnecessary delay — unless the abdomen is distended with flatulent intestines or the hands are cold and red, when it is best not to operate at all, as there is evident general vascular and nerve failure and any operation could only hasten death.

In the first few hours of acute general peritonitis the distension is not due to gas in the intestines, but to a collection of thin milky-looking pus in the general peritoneal cavity; whereas in the later stages there is little or no fluid and the distension is due to gas in the intestines, which are then dark-coloured, dry, and sticky, with adherent lymph on the peritoneal surfaces, suggesting that the wall of the intestine has played the part of a sieve, allowing the fluid to pass through but retaining the solid portion of the pus as a covering of lymph.

The method of draining the peritoneal cavity with gauze appears to me to be preferable to that by drainage through a tube. When the coils of the intestines are lying in close apposition it does not seem to be a hopeful way to drain with a tube which can only be efficient for a limited area. It seems difficult to drain the pelvis against gravity by means of a tube which can only do good by relieving tension and allowing the pus to empty freely from the upper end. On the other hand, by using gauze drains packed loosely amongst the intestines a very large area of the peritoneal cavity can be drained, and more than drained, for the gauze acts as a suction pump and will for days continue to empty the peritoneal cavity as a wick will empty a bottle. It is not a painful operation to withdraw such gauze if it be left in for five days. The attempt to do this on the second or third day gives great pain, but later the meshes of the gauze are filled up by lymph which makes its surface smooth and slippery and its removal easy.

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RESECTION OF THE SUPERIOR CERVICAL GANGLION OF THE SYMPATHETIC FOR GLAUCOMA AND ITS RESULTS.

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IT may be seen on reference to a contribution by me on this operation which appeared in THE LANCET of Oct. 13th, 1900, p. 1071, in which I described my first case, how I there advanced the opinion that "if such an operation does permanently and satisfactorily arrest the glaucoma, preserve the sight, relieve the pains, and restore the patient to even comparative comfort, then I consider it may be undertaken." I may at once say that the later results of this, my first case, as also those of my second case, which I here briefly describe, are not so favourable as to lead me to regard the removal of the superior cervical ganglion of the sympathetic as successful in the cure of chronic glaucoma. It may, perhaps, be repeated here that these operations were based upon the work of Dr. Jonnesco of Bucharest.

My second case was that of a fairly well-nourished country woman, aged 44 years, unmarried. She was admitted into the Royal Free Hospital under my care on Oct. 16th, 1900, suffering from chronic glaucoma in both eyes. The disease commenced about two years before this date, when she began to have pain in the left eye which was operated upon in January, 1900. After the operation the eye was better for a while, but gave trouble again about three months later, and at this time the right eye also became painful. Both eyes were operated on in June, 1900, and the left one again in the following September. The pain and other symptoms not having lessened since this last operation, Dr. E. E. Maddox of Bournemouth, under whose excellent care she had been, thinking her a suitable subject for the bilateral removal of the superior cervical ganglions of the sympathetic, kindly sent her up to me for this operation, he having been interested in my previous case. When 20 years of age, that is about 24 years ago, the patient had cataracts removed from both eyes. Her general health had always been good.

On admission, in the right eye there was a large coloboma from iridectomy in the upper part of the iris which otherwise appeared to be fairly normal and free. There was no lens and the edge of the remaining capsule could be seen. The tension was about + 2. The field of vision was considerably and irregularly contracted. The disc was cupped and the fundus showed other signs of chronic glaucoma. The vision = $\frac{1}{60}$ c + 11 D = $\frac{6}{18}$. The patient complained of constant pain, varying in intensity, in the eye and head. In the left eye there was a large operative coloboma upwards, the iris being otherwise practically normal. The lens was absent and the pupil area showed some remains of capsule. There was also a very little pericorneal injection. The tension was about + 3. The vision was reduced to perception of light only. The disc was cupped and there were other indications of glaucoma in the fundus. The patient had a considerable amount of pain, more or less constant, in this eye, which also was somewhat tender.

In my former case I removed the two superior cervical ganglions at one sitting, but I found this to be a somewhat heavy and trying experience for the patient. Wishing also to notice the effect of the unilateral operation I determined in this case to remove the ganglions at different times. Accordingly, on Oct. 19th I removed the superior cervical ganglion of the left side. The operation chosen was that described by Dr. Jonnesco under the name of "pre-mastoid" which has been previously fully reported in my communication alluded to above and therefore need not be repeated here. Immediately after the resection of the left ganglion the tension of the eye became a soft normal. On the next morning there was slight ptosis, the eyeball appeared to be a little sunken in the orbit, and the tension remained a soft normal. There was also a little injection of the conjunctiva. On the 22nd the tension was still low. There was some alteration in the voice, which sounded somewhat gruffer than usual, and it hurt the patient to talk. She protruded her tongue with difficulty. There was no excessive amount of mucus in the pharynx. She did not complain of any pain in the neck or head on that side. There had been no pain in the eye since the operation. On the 26th the wound was practically healed and the patient sat up for a short time. On Nov. 1st the patient felt very well, the wound was quite healed, and there was no pain in the eye. The tension remained soft. On the 5th the same operation was repeated on the right side of the neck, with like results as to tension, ptosis, &c. The stitches were removed on the 12th, and on the 15th the wound was quite healed, the case having done uninterruptedly well since the operation. On this day there was no pain in the right eye and the tension was a soft normal. On the 16th the patient complained of some pain over the right eye during the previous night. The tension in the right eye was normal, but that in the left eye gave a faint suspicion of being slightly raised. On the 19th the tension was normal in both eyes. There was no pain in either eye nor in the head. The ptosis had practically disappeared. The field of vision of the right eye was considerably increased, and the vision itself had improved from $\frac{1}{60}$ to $\frac{6}{60}$ without glasses, c + 11 D sph. = $\frac{6}{18}$. The patient was discharged on the next day.

The method of operating at intervals on the two sides of the neck appears to be a more satisfactory procedure than that of removing the two ganglions at one time.

Dr. Maddox, about Christmas time, kindly reported by letter that the tension had returned and that he found it necessary to employ pilocarpine drops. On Feb. 18th, 1901, Dr. Maddox wrote to say that the tension was then + 2. The eyes then have returned to the same state as they were in before the operations for the removal of the ganglions were performed. Therefore, though in this case the immediate effects were extremely favourable for a few days, the permanent result of the operations for the cure of the glaucoma is *nil*. Inasmuch as this patient had no lenses she was thought to be a suitable subject for this operation. The possibility of the glaucoma resulting from cicatricial changes was naturally also considered.

I also here give the final results of my former case.[1] It can be seen on reference to the details that in that case also the immediate effects were distinctly satisfactory. It is

[1] THE LANCET, Oct. 13th, 1900, p. 1071.

now about seven months since the operations were performed. The vision of the patient is exactly what it was before I removed the ganglions and the tension is about +1 which is about the same as formerly. The pupils, however, which became contracted at the operations, remain so, and are active to light and to accommodation. The patient thinks that the pains in the eyes and head are in no way lessened. In the region of the scar on the right side of the neck she frequently has a moderate amount of pain which seems to run "into the throat and up into the back of the head." She herself does not consider that she has derived any benefit from the operations I therefore again express my opinion that from the results obtained from these two cases the removal of the superior cervical ganglion of the sympathetic system does not cure chronic glaucoma.

The central origin of chronic glaucoma may be a fact, but if it be so, the removal of the superior cervical ganglion apparently does not interrupt the connexion with the eye Either the connexion is not by this route or some other means of communication are established very soon after the resection of the ganglion. These cases seem rather to point to chronic glaucoma being a peripheral trouble.

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THE ELIMINATION OF ARSENIC THROUGH THE HAIR AND ITS RELATION TO ARSENICAL POISONING.

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THE differentiation of arsenical peripheral neuritis from ordinary alcoholic peripheral neuritis has been hitherto purely a clinical one, though it must, of course, be granted that when Dr. E. S. Reynolds made his alarming discovery of the prevalence of the arsenical form in beer-drinkers the necessary confirmation was provided by the detection of arsenic in the beer which those people had been in the habit of drinking. Such confirmation, whilst undoubtedly of great value, could not, however, be universally applied as an aid to diagnosis, and a method of detecting with certainty the arsenical causation in any particular case has naturally to be sought in another direction. The ability to detect the specific bacterial causation of certain diseases has made a wonderful difference in the accuracy with which such complaints can be diagnosed, so that, from analogy, we would naturally conclude that the ability to separate from the body and estimate with certainty the specific agent in the causation of arsenical peripheral neuritis would prove of immense value. The difficulties, however, surrounding investigation with this object in view have up to the present been insuperable. It is well known that arsenic is rapidly eliminated from the system *viâ* the kidneys and can be readily detected in the urine, but this test can only apply to cases where the ingestion of the contaminated material has been recent. The deposition of arsenic in organs such as the liver can be left out of the question, at any rate during the life-time of a patient. Again, the predilection of arsenic for the skin and its appendages is common knowledge and Mr. W. Kirkby has gone so far as to confirm a diagnosis of arsenical neuritis by the detection of the noxious element in a scab from the patient's body. Scales are but rarely met with in cases of this character, but there are very few patients who do not possess some amount of hair upon the body. As a quantity of hair sufficient for analysis can easily be removed and taken away for investigation, it certainly does appear strange that such should not have been better made use of as a medium of universal efficacy for showing that arsenic has been present in the system. Dr. Dixon Mann in his work on forensic medicine simply notes the fact that arsenic has been detected in the hair, but no English writer appears to have gone further into this phase of the subject. The likely explanation of this is to be found in the difficulty of estimating arsenic in the hair by the ordinary methods.

As having a direct bearing upon this question, it is well to draw attention to an article in the *Comptes Rendus* of August 6th, 1900, by Armand Gautier of Paris. This observer takes an important and extended view of the part played by arsenic in the animal organism and makes special reference to the function normally exercised by hair as a means of eliminating this element from the system. He does not, however, deal with the question from a pathological point of view, nor does he state any quantities except in the case of the thyroid gland and the blood. If Gautier's construction respecting this special eliminating function be correct, it might reasonably be expected that the hair of people taking an abnormal amount of this drug for any length of time would contain the element in an increased and appreciable amount. That such is the case is beyond doubt.

Samples of hair taken from six people (males) were submitted to analysis. Two samples were from well-marked cases of arsenical beer poisoning, another from a patient who had been taking one-ninth of a grain of arsenic per diem for an extended period, and three from healthy individuals, aged respectively 16, 23, and 35 years. In the three last-named samples arsenic was found to be present, but in quantities too minute to be estimated in one gramme of substance. The sample from the patient who was taking the drug medicinally was found to contain arsenic in the proportion of 0·3 in 10,000. One of the two patients who were the subjects of arsenical beer poisoning had present in his hair arsenic to the extent of 0·3 in 10,000, whilst the other showed the much larger proportion of 1 in 10,000. The vast difference in the proportion found in these samples to that in the three healthy samples shows in a marked manner the value of chemical analysis of the hair from a diagnostic point of view.

The estimation of arsenic in the hair may also prove to be of immense value from a medico-legal point of view—viz., in the post-mortem examination of cases of chronic arsenical poisoning, and particularly in exhumed bodies, since hair is one of the last parts of the body to undergo organic decomposition.

The method employed in the estimation of arsenic in the samples referred to above was Sanger's modification of the Marsh test. To preclude the possibility of any of the arsenic being overlooked by reason of its being present in the hair in organic combination the weighed samples (one gramme) were in each case first dissolved in fuming nitric acid (specific gravity, 1·5), and after boiling in this until the violent evolution of nitrous fumes had subsided the solution was transferred to a glass tube which was carefully sealed and heated for two hours to 250° C. The tubes were then opened with the usual precautions and the solution was evaporated to dryness to expel all nitric acid and then transferred to the Marsh apparatus. At least two estimations were carried out in each case.

A SHORT ACCOUNT OF A FATAL CASE OF LARYNGEAL DIPHTHERIA COMPLICATING MEASLES.

BY GEORGE J. MAGUIRE, M.B., B.CH. R.U.I.

THE interesting cases recorded in THE LANCET of Feb. 2nd (p. 321) and 23rd (p. 549), 1901, where these two diseases were synchronously manifested, give rise in one's mind to some doubt as to whether the rarity of this particular mixed infection is not apparent rather than real, and due more to the paucity of published notes than to the scarcity of clinical material. The following short account of a case that impressed me very strongly at the time, and of which many of the details remain vividly in my mind, may prove not to be uninteresting.

In the spring of 1898, during an epidemic of measles in the district of Paddington, I saw an infant, aged about 18 months, who was covered with a typical exanthem and had all the typical symptoms of morbilli. The other children of the family, and of the two other families occupying the different floors of the house, were in various stages of recovery from the disease. As the infection seemed to be pursuing an ordinary course no medical advice was sought. In the early morning of the day on which I

visited the child, however, some difficulty in breathing had suddenly arisen and was gradually increasing, so that the mother became alarmed and sent to the surgery. When I saw the infant it was suffering from the most intense inspiratory dyspnœa, all the muscles of respiration, ordinary and extraordinary, being in violent action, air being drawn into the lungs only by the strongest efforts and a loud crowing noise accompanying every breath. The child was somewhat cyanosed and evidently in terrible distress. The possibility of membranous obstruction, probably diphtheritic, at once suggested itself; but on careful examination of the pharynx not a vestige of membrane was anywhere to be seen. The mother was most positive in her assurances that neither the patient nor any other member of the family had had sore-throats and that there was no diphtheria in the house, though in the same street a few houses away there were one or two cases. I saw the child again in the afternoon and evening, and at the fourth visit, as the remedies, medicinal and otherwise, that were ordered had brought about no alleviation of the symptoms, and as the condition of the child was gradually and steadily becoming more serious, I sent it to St. Mary's Hospital for tracheotomy. The operation was at once performed, and successfully, but the patient never rallied, dying some few hours afterwards. I communicated later with the hospital authorities, and learned that the operation had afforded much relief, but that the child was too collapsed for it to be of much avail. It was further stated—what is in view of the subject the most interesting fact—that the cause of the condition was very uncertain, and it was not till the necropsy that it was cleared up. It was then found that the larynx was almost occluded by a thick, tough membrane, clinically that of diphtheria, and proving on bacteriological examination to be diphtheritic. There had been no definite objective sign, nor was it possible to diagnose the case till the necropsy.

Had there been no post-mortem examination in this case it would have escaped recognition and a focus of infection would not have been notified to the local health authorities. It is highly probable that many cases of diphtheria go unnotified, either because of the mildness of the symptoms, subjective and objective, or from some concomitant masking of them.

Richmond, Surrey.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

WASTED QUININE PILLS.

BY JOHN CURNOW, M.D., F.R.C.P. LOND.

A PATIENT suffering from enteric fever, after 22 days of pyrexia of a very intermittent type and obstinate constipation, was treated on Feb. 4th with five grains of quinine in the form of two pills three times a day. On the 11th, after a simple enema, the pills were found in the stool. They were seven in number, hard, and apparently unacted upon by the gastric or intestinal juices. Enemata had been given on the 4th, 6th, 8th, and 10th, as well as on the 11th. It was subsequently ascertained that in making the pills water had been used instead of the glycerine ordered in the Pharmacopœia. The pills were not coated.

Wimpole-street, W.

A CASE OF HYDROPNEUMOTHORAX.

BY EDWARD FRAZER, L.R.C.P., L.R.C.S. IREL.

THE history of the following case and the treatment adopted may be of some interest.

On Jan. 1st I was called to see a girl, aged 22 years, who had been complaining of illness for five days previously. I found her quite delirious; her pulse was 140 and very feeble, her temperature was 103·8° F., and her respirations were 44 per minute. On examination she presented all the symptoms and physical signs of left pleural effusion with considerable displacement of the heart. The respiratory murmur over the left apex was absent and on percussion there was a distinct tympanitic note to the lower border of the third rib. The condition of the patient demanded immediate interference, so I at once decided upon aspiration and removed over two pints of a greenish, cloudy fluid, with numerous small flakes of lymph floating in it. The patient was put on a suitable diet and was given a mixture of iodide of potassium with cinchona. The removal of the fluid had no effect on the apical note. I again saw the patient on the 4th and found that the delirium had passed off. Her respirations were now 32, her temperature was 102·5°, and her pulse was 134. There was a considerable amount of fluid in the chest. On the 6th I removed one and a half pints of fluid similar to the first in appearance. The apical note was still unchanged. On the 11th I found the fluid was increasing, and on the 17th I again removed over a pint of a darker and more cloudy fluid, leaving almost as much more in the pleura. It had now become evident that the air at the apex must be got rid of in some way or otherwise the patient would not recover. Accordingly, I procured a small hollow needle, and having fitted it to the indiarubber tube of the aspirator I placed the patient on her knees and chest, when the air, with a never-to-be-forgotten gurgling sound, rushed to the back of the chest. The patient, unfortunately, could not remain in this attitude, and on resuming the dorsal position the air immediately returned to the apex. I then passed the needle into the chest along the upper border of the third rib and in an upward direction and removed a considerable quantity of air. The patient experienced instant relief. I then firmly strapped the chest. On the 30th I removed the strapping and aspirated half a pint of fluid somewhat clearer than on the third occasion. The after treatment consisted of iodide of potassium with tonics, small blisters, and a good sustaining diet. The patient is now convalescing and there is only a trace of fluid left. How the air got into the pleural cavity remains a question. There was no injury and no trace of phthisis. The result of the case seems fully to justify the treatment adopted.

Riverstown, co. Sligo.

NOTE ON A CASE OF ENTERIC FEVER WITH SEVERE HÆMORRHAGE FROM THE SIGMOID FLEXURE.

BY STEPHEN G. LONGWORTH, L.R.C.P. IREL.,
ASSISTANT MEDICAL OFFICER TO THE SUFFOLK COUNTY ASYLUM.

AN imbecile patient, a female, aged 26 years, in the Suffolk County Asylum, sickened on Nov. 2nd, 1900. The nature of her illness during the first week was very indefinite and was regarded as being probably nothing more than constipation. Her temperature, which was 101° F. on the first day, fell gradually and reached almost to normal on the fifth day. Her bowels, which had been confined for three days prior to the commencement of her illness, were opened by means of simple enemata. On the evening of the fifth day her temperature again commenced to rise, reaching 101° on the evening of the seventh day. She had some diarrhœa on the seventh and eighth days, but for the three following days she passed ordinary-formed motions. On the evening of the ninth day the temperature again commenced to rise and it continued to do so for the four following days. There was generally a rise of about 1·5° each evening and a fall of about one degree each morning. The temperature reached 103·4° on the evening of the thirteenth day, diarrhœa again supervened, and rose spots appeared for the first time. On the morning of the fourteenth day the patient suddenly became collapsed and her temperature fell by 3·5°. This was followed in the course of half an hour by the passage of at least a pint of dark red blood-clot per rectum. By the evening she had rallied, and for the next few days the temperature ranged between 101° and 102·5°. There was also constipation. (It should be said that the patient was taking opium.) Examination of the blood on the fourteenth day gave a positive reaction to Widal's test and the urine showed a marked diazo reaction. During the afternoon of the seventeenth day her temperature again fell suddenly from 102·4° to 96·8° and she became collapsed. This was followed almost immediately by the passage of about another pint of similar dark red blood-clot from the bowel. The patient never completely rallied from this hæmorrhage; although her temperature rose again to 102° on the

eighteenth day her pulse remained at about 140 and very thready in character. On the nineteenth day another recurrence of the hæmorrhage took place andon the day following she died.

At the post-mortem examination, which was made 12 hours after death, the condition of the small intestine was as follows. The mucous membrane of the ileum as a whole was pale; it presented about a dozen superficial ulcers which varied in size from one-eighth of an inch to one inch in diameter. The bases of the ulcers were clean and free from sloughs and showed no signs of hæmorrhage having taken place from them. As regards the large intestine, the sigmoid flexure, as viewed before opening, presented for about six inches in extent a purplish colouration, the peritoneum over it having its usual glistening surface. On opening up this portion it was found to contain a mass of dark red clot which was firmly adherent to the mucous membrane. On detaching this, which was done with some difficulty, the mucous membrane was seen to be quite free from ulceration, but there was a general thickening of the walls corresponding to the extent of the discolouration and due to a hæmorrhagic infiltration of the coats of the bowel. The remainder of the large intestine was quite normal. The spleen was much enlarged, congested, and weighed 340 grammes.

The above case ran a more than usually obscure and atypical course, but the point of special interest was the site from which the hæmorrhage took place. After having seen the pathological condition and on referring to the clinical notes of the case one might perhaps regard as a point of differentiation between hæmorrhage occurring from the usual site and hæmorrhage taking place much lower down in the bowel (as in this case), the fact that the passage of the blood per anum followed so soon on each occasion after the external manifestations pointing to internal hæmorrhage. Another point also in favour of this idea was that the blood-clots passed were on all occasions quite unmixed with fæcal matter. The only other case of which I can find any record in which possibly the post-mortem appearances might have been similar is one mentioned by Dr. Julius Dreschfeld.[1] He states that he has seen one case in which hæmorrhagic infiltration of the whole of the large intestine was found post mortem.

Suffolk County Asylum, Melton.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

SALISBURY INFIRMARY.

A CASE OF PERITONEAL CYST SIMULATING OVARIAN CYST; LAPAROTOMY; RECOVERY.

(Under the care of Dr. GILBERT KEMPE.)

THE very rare condition described in the following case is somewhat difficult of explanation. Such a cyst might be derived either from the formation of extensive pleuritic adhesions or from the persistence and dilatation of some fœtal structure. The former hypothesis is in this case hardly tenable, and it is probable that the cyst was derived from some congenital abnormality, though it is difficult to say what the abnormality was. Occasionally urachal cysts (that is, cysts due to a dilatation of a urachus which was closed at both ends but not between) may attain large dimensions.

A married woman, aged 39 years, was admitted into the Salisbury Infirmary on Jan. 23rd, 1901, for progressive enlargement of the abdomen of about 12 months' duration. The patient, who had always been healthy, was the mother of four children, the last child being born four years ago. She got up on the fourth day after confinement and was very ill and had to return to bed again. There had been no miscarriages. The catamenia had been regular every four weeks, being normal in character and duration. The abdomen had been steadily enlarging for the last 12 months. This enlargement had been painless and the only trouble had been that of obstinate constipation. She had lost flesh lately.

On admission the patient was somewhat emaciated and had the characteristic facies. The abdomen presented the usual appearance of a large unilocular ovarian cyst. On the skin were many large scars which the patient said were the result of boils, from which she suffered about two years ago. Many of these scars were of the size of a shilling. The whole of the abdomen was occupied by a large tumour, the greatest circumference (42 inches) being just below the umbilicus. Midway between the umbilicus and the pubes a broad flat transverse band could be seen, which was resonant to light percussion and was evidently the transverse colon. On palpation the tumour fluctuated readily, and a fluid thrill could be felt over the whole of it. The tumour seemed to be fairly moveable and the abdominal wall appeared to move over it. The whole of the abdomen was dull to percussion, with the exception of the transverse colon above-mentioned and some slight resonance in the left hypochondrium and in the flanks. Per vaginam the uterus was drawn up almost out of reach but did not seem to be connected with the tumour. A slight sense of fluctuation was felt in the anterior fornix but none in the posterior. There was no evidence of any secondary deposit.

Laparotomy was performed on Jan. 25th. An incision was made in the middle line from the umbilicus to one and a half inches above the pubes. On opening the abdominal cavity the parietal peritoneum was found to be closely adherent to what appeared to be the cyst wall. An attempt to separate it failed. The cyst was then tapped with a glass cannula and 21 pints of fluid were drawn off. The fluid was dark green in colour and was sparkling with cholesterin crystals. A further attempt was then made to separate the cyst which again failed and the cyst was opened and explored from within. Both ovaries and tubes and part of the fundus uteri were found within it and were apparently healthy. Laterally the cyst extended into both flanks. Superiorly there was a large cul-de-sac extending to the posterior margin of the liver. The stomach and transverse colon could be identified in the anterior superior wall. No small intestines could be seen or felt. The kidneys and spleen could be felt behind the cyst wall. No attempt to remove the cyst wall seemed likely to be successful, so the wound was closed and a drain was inserted into the cyst at the lower angle of the wound. No dermoid structure was seen or felt.

The after-progress was satisfactory. The temperature never rose above 100°F. The drain was removed on the third day and the sutures were taken out on the tenth day. The walls of the cyst seemed to fall together quite easily. On Feb. 10th the wound was quite healed with the exception of a small granulating area where the drainage-tube had been. Palpation of the abdomen revealed nothing abnormal except around the abdominal incision, where there was a hard and seemingly solid tumour of about the size of half an orange, which was not tender and was freely moveable. This was considered to be the contracted cyst wall and showed no signs of refilling. On March 2nd the patient was discharged from the hospital quite well.

Remarks by Dr. KEMPE.—This case is reported on account of its rarity. Serum-containing pseudo-cysts of encysted peritonitis are not uncommon but it is, I think, rare for such a cyst to contain a fluid holding an abundance of cholesterin crystals in suspension. The mimicry between this cyst and an ovarian cyst was singularly complete. Four other medical men saw the case and concurred in the diagnosis and it was not until the ovaries and tubes were found within the cyst that the true state of affairs was made clear. The presence of the cholesterin is not easily explained; there was no bile in the fluid nor was any connexion with a dermoid cyst apparent. Perhaps it and the colour of the fluid resulted from some old hæmorrhage or inflammation. The glass cannula mentioned I invariably use for emptying ovarian cysts, &c. It consists simply of a plain glass tube with a rubber tube attached to carry away the fluid. A small opening is made in the cyst with a scalpel which is plugged with a finger until the glass tube is inserted; this can readily be made to fill the opening by holding it more or less obliquely to the surface of the cyst.

[1] Enteric Fever: Allbutt's System of Medicine.

It is easily cleaned, is not so complicated in use as any of the ovariotomy trocars sold, and fulfils every purpose for which it is wanted.

I am indebted to Mr. R. T. Richmond, house surgeon, for the notes of the case.

BIRMINGHAM GENERAL HOSPITAL.

A CASE OF DERMATITIS FOLLOWING ACUTE LICHEN PLANUS.

(Under the care of Dr. T. SYDNEY SHORT).

WITH regard to the following case of lichen planus the fact that the mother of the patient was also affected with the disease is of interest, for it is not usually considered to be hereditary in origin. The very extensive character of the rash is also noteworthy.

An anæmic young woman, aged 21 years, was first seen on Nov. 8th, 1900. She said that she first noticed an eruption which itched badly in June. It came out in small pimples with flat tops on the inner surface of the right arm near the wrist. She thought that they were heat lumps as they kept her awake at night on account of the itching they produced and the consequent scratching which ensued. Within a week a large number of pimples came out on the front and inner surface of the right thigh. Here the pimples soon formed patches and were terribly itchy. Somewhat rapidly they then broke out on her back and on the front and back of her chest, being especially abundant between the breasts; they also appeared on the calves of the legs, being accompanied in this position by much swelling. The worry and loss of sleep consequent on the continual itching had rendered her weak and ill so that she lost flesh and colour.

When seen the patient was covered practically all over the body, with the exception of the face, ears, hands and fingers, and toes, with a very characteristic lichen planus rash. Here and there were small areas of healthy skin in wavy lines along the arms and upper parts of the legs; but all the trunk, the legs below the knees, and even the backs of the feet, were completely covered. The rash consisted of the characteristic quadrangular flat-topped shiny papules in large closely-packed patches with outlying papules. They were covered with a fine scurfy scale which sparkled when viewed sideways in a strong light. The ankles and feet were very much swollen and both legs below the calves were covered with a thick purplish skin of the typical vinous hue, having a rough coarsely granular surface with much infiltration. Her legs ached so that she could scarcely stand. The right leg was worse than the left, the thick bluish hide extending upwards to the lower part of the thigh being extremely well marked on the inner side of the knee. The mucous membranes showed no sign of any eruption. It is noteworthy that the palms and soles were not affected in this case.

The patient was admitted into the Birmingham General Hospital under the care of Dr. Stacey Wilson, to whose courtesy Dr. Short was indebted for the opportunity of continuing the treatment of the case. This consisted of a warm bath with a good soaping all over, rapid drying, and then complete inunction with an ointment composed of equal parts of unguentum sulphuris and unguentum hydrargyri ammoniati put on in sufficiently large quantity to saturate the sheet in which she was closely rolled and kept. A considerable amount of dirty scaling took place during the first week. The papules gradually lost their shiny tops and the swelling of the legs diminished. The intense itching was relieved by the first thorough inunction and troubled her very little afterwards. She was kept closely rolled in the ointment-saturated sheets for five weeks, with a soap bath each week. She was then allowed to be up with sufficient ointment rubbed in to keep her underclothing greasy. On Jan. 10th, a week after her discharge, she showed no papules at all; the thickening of the skin of the legs had not quite disappeared, but the vinous hue had gone. The whole of the skin which had borne the eruption was stained with dark bronze-looking pigment, which was, she said, daily becoming fainter. Her general condition was greatly improved. No arsenic was given in this case, the only internal treatment being carbonate of ammonia and gentian as a tonic, nor was any soporific required, the external treatment being alone relied upon, and this cleared off the papules in six weeks.

Remarks by Dr. SHORT.—It is interesting that the mother of this patient has suffered from chronic lichen planus for 21 years. Hearing that she had a rash I sent for her and inspected a patch of well-marked lichen planus over the lower part of the back. She said that the rash first appeared six days after her daughter was born and had been present on and off since. She might be free from it for so long as two years at a time. It itched a good deal when it came out, but it did not trouble her much. When the itching was particularly annoying she had some treatment but not otherwise.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

The Lysigenic Action of Sera.—Observations on the Bactericidal Action of Blood.

A MEETING of this society was held on March 19th, Mr. W. WATSON CHEYNE, the President, being in the chair.

Dr. W. BULLOCH made a communication on the Lysigenic Action of Sera. After referring to the fundamental facts of the destruction of bacteria by serum he alluded to the experiments of Watson Cheyne, Fodor, Wyssokowicz, Nuttall, Behring, and Nissen, and pointed to the gradual evolution of the humoral theory of Buchner. R. Pfeiffer's work was next discussed and the experimental results which had led Pfeiffer to formulate the theory that in "antifectious" sera there were two distinct bodies—one in the immune serum itself possessing only slight inhibitory powers on the growth of the bacteria, but representing, as it were, the forerunner of the active bacteriolytic substances; the other produced in the body of the animal which had received the serum, and analogous or identical with alexin. By a combination of the inactive body with the alexin a specific bacteriolysis was induced. The experiments of Bordet, Ehrlich, and Morgenroth on hæmolysis were then discussed, and the close analogy of hæmolysis and bacteriolysis was emphasised. Dr. Bulloch then proceeded to detail the experiments performed by himself. They consisted in the injection of rabbits with the blood corpuscles of the ox. In the serum of such rabbits a hæmolysin made its appearance as the result of the injection. This hæmolysin was composed of two perfectly distinct substances which could be separated from each other. They were the intermediary or immune-body and the alexin ("addiment" or "complement" of Ehrlich and Morgenroth). By accurately titrating the immunised rabbit's serum he had been able to follow from day to day the course of the immunity and the amount of the hæmolysin. After every injection there was a profound fall in the hæmolytic dose, and this fall (which had been denied by Ehrlich and Morgenroth) was shown to be due to a diminution in the amount of the alexin. By a special method he had been able completely to separate the alexin dose from the immune-body dose, and charts were shown to demonstrate that there was no relation between these two factors. Further, the immune-body dose of the serum was found to be extraordinarily small (in one case $\frac{1}{20000}$ of a cubic centimetre accompanied by 0·2 cubic centimetre, which was the hæmolytic dose, of the serum by itself). By thus separating the two factors of the hæmolysis their relation to leucocytes could be easily demonstrated. Artificial leucocytosis was found to increase the amount of alexin without influencing the amount of the immune-body in the slightest degree. A complete chart was also shown exhibiting the minute changes during the first days of the immunisation against blood corpuscles. The relation of the experiments to bacteriolysis, and especially to R. Pfeiffer's work, was emphasised and the connexion with practical bacterio-therapeutics was pointed out. In order to ascertain what cells contained the alexin Dr. Bulloch produced artificial leucocytosis by sodium cinnamate, the white corpuscles going up from 10,000 to 28,000 per cubic millimetre. This had no influence on the immune-body, but the amount of alexin went up at once. The kind of animals used in experimentation was of great importance, for different animals differed enormously in their hæmolytic and bactericidal properties and in the elaboration

of the two substances referred to. The cause of congenital immunity was certainly connected with this question of alexin. He had attempted to produce an anti-complemental serum, but rabbits and guinea-pigs were not suitable animals for its manufacture.

Professor A. E WRIGHT communicated the results of an Investigation into the Bactericidal Action of the Blood, undertaken by Major W. B. Leishman, R.A.M.C., and himself. Professor Wright congratulated Dr. Bulloch on his survey of the recent work which had been done on the subject of immunity. He was not quite sure, however, that what was true of blood corpuscles held good as regards bacteria. It might be so, but it was a question which wanted to be investigated. He then described the technique which he had employed to test the bactericidal power of the blood. They had to work with extremely small quantities of blood. All the work that had been done hitherto had been qualitative only, but here the result aimed at a quantitative measure of the bactericidal power of blood under certain conditions. By the methods employed, which he described, almost absolute accuracy was obtained and the bactericidal power of the blood could be expressed quantitatively by the number of bacteria which could be killed by a definite quantity of blood. In normal conditions the bactericidal power of a person's blood varied very little from day to day. He had measured his own blood with typhoid bacilli and found it very constant. Experiments were made with various microbes. On staphylococci the blood had practically no effect and on streptococci it had not much more. On plague bacilli the blood had no bactericidal power. With typhoid and cholera bacilli the blood was very powerful. One cubic centimetre of blood would kill about 10,000,000 cholera bacilli, and after a dilution of about 20 the blood would still be able to kill off typhoid bacilli. Rabbit's blood had also been experimented with; this had enormous bactericidal power for cholera. A patient was referred to who had had for many years a constant succession of boils. He was inoculated with staphylococcus cultures. It was found that the inhibitory power of his blood on staphylococci was increased and he remained free from boils for three months. After inoculation there were three days during which the bactericidal power of the blood was diminished. After that time it went up. In conclusion, he (Professor Wright) thought that Dr. Bulloch had assumed too much in certain directions, but that his researches on hæmolysis were of great value.

Mr. W. C. C. PAKES remarked that it was a well-known fact, and one which he had often observed, that in an animal which had been inoculated with bacteria and after a lapse of time killed all attempts to regain the bacterium failed. Perhaps Professor Wright's experiments might throw some light on the explanation of this.

Dr. GEORGE DEAN complimented Dr. Bulloch on his communication. He (Dr. Dean) had taken great interest in the subject of hæmolysis and had performed several experiments confirmatory of the results of others. The alexin of diphtheria reached a high degree of immunity in certain animals. He had found that fresh serum added nothing to an immunised horse. The injection of certain kinds of serum which destroyed the hæmolytic power of the blood only destroyed it for a few minutes and it was regained in a few hours. This and other facts went to show that they could not always draw inferences from the hæmolytic to the bactericidal power of blood.

Dr. BULLOCH, in replying, remarked that a good deal of the older literature on the bactericidal power of blood would require to be revised, for the older methods were too coarse. The methods proposed by Professor Wright offered great promise of accuracy.

Dr. A. RUFFER (Cairo) exhibited Photographs of Kidneys and Ureters showing polypoid outgrowths due to the bilharzia hæmatobia.

CHELSEA CLINICAL SOCIETY.

Discussion on the Clinical and Pathological Relations of the Chronic Rheumatic and Rheumatoid Affections to Acute Rheumatism.

THE annual clinical debate of this society was held at the Jenner Institute of Preventive Medicine on March 12th, Dr. WILLIAM EWART, the President, being in the chair. The debate was opened by the reading of a paper by Dr. ARCHIBALD E. GARROD, which was printed in THE LANCET of March 16th, p. 774.

Dr. F J. POYNTON then delivered a joint communication by himself and Dr. ALEXANDER PAINE dealing with the infectivity of acute rheumatism with especial reference to the chronic types of the disease. They considered that the mean result of many years of experience had established acute rheumatism as a definite disease with definite peculiarities, and if that were granted it followed that if one micro-organism was constantly found to be present which when isolated produced identical lesions in animals then it was most probable that that organism was specific. In their experience acute rheumatism was probably the result of infection by one micro-organism. They held that pericarditis, pleurisy, and nodules were manifestations of the rheumatic affection and not superadded phenomena, so that to regard polyarthritis as the criterion of rheumatic fever and the other affections as complications was not in accord with present knowledge. Though salicylates were of great value in some cases of acute rheumatism there was no justification to consider them as tests of the rheumatic nature of the disease. The subsidence of the rheumatic process under the use of salicylates must have some meaning, but in their opinion a phase of rheumatism could not be claimed as a distinct disease. They thought that they had considerably weakened the position of those who considered acute virulent rheumatism as due to a mixed infection because organisms were not found in the simpler arthritic type by having demonstrated that the organisms in acute rheumatism were rapidly destroyed at the sites of the lesions and were therefore not easy to demonstrate in the tissues. They had isolated from 14 cases of rheumatic fever a diplococcus which grew in liquid media in streptococcal chains and on solid media in staphylococcal masses. Triboulet before, and Wasserman and Malkoff during the time they were working had also isolated a diplococcus from acute rheumatism. During the present year Fritz Meyer had published the results of a prolonged investigation of the bacteriology of rheumatic angina and had also isolated a diplococcus which in many respects, and especially in the experimental results which it produced, resembled the one they had described and with which they had obtained similar results. Their researches had been more detailed than those of others, and though different media had been used by various workers it seemed very probable that the organism in each case was the same. Though Meyer used a medium of high alkalescence and they used a faintly acid medium, in both instances the organisms grew well on blood agar which was only faintly alkaline. They had isolated the organism three times from the blood of patients suffering from rheumatic pericarditis, twice from the throat, four times from the pericardium, growing them also in the exudations, twice from the urine, three times from the cardiac valves, and once from the rheumatic nodule. The anatomy of the lesions they had produced in the rabbit was identical with that of those in man. For the inoculations all the cases that were chosen were undoubted cases of rheumatic fever and not a shadow of doubt as to their nature entered the minds of the physicians, who were Dr. W. B. Cheadle, Dr. D. B. Lees, Dr. F. G. Penrose, and Dr. A. E. Garrod. They had therefore concluded that the organism was a cause of rheumatic fever, for if they stripped that disease of valvulitis, polyarthritis, pericarditis, pleurisy, nodules, and chorea it was difficult to believe in its existence as there was then only left the constitutional tendency and not the disease itself. Though more researches were needed to prove the point they further believed that the organism was the only cause. If their observations were corroborated the pathology of rheumatic fever was in a firmer position than heretofore, and when once the toxins could be isolated they would be in a position to approach the explanation of the various lesions, both acute and chronic, with more confidence than they could at the present time. They had repeatedly demonstrated the diplococcus in the joint exudate in rabbits and had also found them in the joints in rheumatism. The organisms were rapidly taken up by endothelial cells and polynuclear leucocytes in those situations, and possibly this might account for the difficulty of demonstrating them in acute rheumatic arthritis, which was usually of less severe type than that produced experimentally in the rabbit. The presence of the organisms in that form of arthritis brought acute rheumatic affections of

joints into line with arthritis the result of septic gonorrhœal and pneumococcic infections. According to the researches of Dr. G. A. Bannatyne, Dr. A. S. Wohlmann, and Dr. F. R. Blaxall rheumatoid arthritis must be included in that group also. Gouty and syphilitic arthritis remained as examples in which no micro-organism had been demonstrated, the former perhaps not being the result of a microbic infection, the latter almost certainly being micro-organic. Another point to which they wished to call attention was the condition of the kidneys in acute rheumatism. In fatal cases they had found very definite changes in the parenchyma, especially of the convoluted tubules. There were marked cloudy swelling of the protoplasm of the renal cells and some desquamation. The change was diffuse, affecting a great number of the convoluted tubules. Further, they had isolated the diplococcus from the urine in acute rheumatic pericarditis. In rabbits, possibly because of their fur, the kidneys were more severely affected, but the changes were of the same type. There were much cloudy swelling and also some desquamation of the renal cells, and in their kidneys they had repeatedly demonstrated the micro-organisms. In the rabbit they had traced this condition step by step to the formation of a white infarct, which certainly in the rabbit and most probably in man was not the result of a gross embolism, but was the result of the invasion of a considerable number of the diplococci in the particular area, and as a result the cloudy swelling in that area passed over the limit to the stage of necrosis which accounted for the white appearance of the infarct. It appeared to them that the kidney was an important site for the elimination of the poisons produced by the rheumatic infection and that in that process the kidney itself to some extent suffered. Usually, the injury was not gross, for though albuminuria, and in some malignant cases hæmaturia and nephritis, occurred in this disease, as a rule there was not albuminuria or evidence of serious renal inflammation. When a white infarct healed they knew the result was a scar, and it was possible that repeated attacks of acute rheumatism might do permanent damage to the renal tubules, not of the gross nature found in the infarct, but of a grade sufficient in severity to destroy the functions of many tubules, leading perhaps to the gradual destruction of the renal cells and their replacement by fibrous tissue. Repeated attacks of acute rheumatism in the young might lead to fibrosis of the kidney in the adult or, short of that, might impair the kidney's function for the elimination of the rheumatic poison in later life. As a result of this it might be that a subsequent attack of rheumatism in adult life, though less severe because the adult was less susceptible, was more chronic, because the poisons were eliminated with more difficulty. When they considered gout they knew that the kidneys suffered much in that disease and that some authorities gave to the kidneys first place in its causation and all allowed that the impairment of their function was a prominent factor in the more chronic inveterate and cachectic type. For those reasons it seemed to them important to study the kidneys very closely in acute rheumatism, and perhaps it might be found that albuminuria was more frequent than was generally supposed or that the peculiar condition of cyclical albuminuria might sometimes be a result of the impairment rather than destruction of function that appeared to be the result of rheumatic fever. They had collected facts to show that some cases of malignant endocarditis were truly rheumatic and not the result of secondary infections. This suggested that some of those lesions of joints that run on to ulceration and destruction of cartilage were really rheumatic. The disease had altered in type and for some reason had become locally malignant in those situations as it sometimes became in the valves. This, they pointed out, was no new suggestion, but was commented upon in the classical work upon pathology by Wilks and Moxon.

Mr. N. C. MACNAMARA said with reference to the toxic origin of rheumatoid arthritis that it was evident that some of the chemical substances produced by specific micro-organisms led to rapid destruction of tissues, such as was witnessed in pyæmia; others took years to run their course, such as leprosy; and there was a class of cases such as those known as "gonorrhœal rheumatism" which in point of time ran an intermediate course. There could be no question as to the toxic nature of this last form of disease, or as to the fact that the gonococci were present in the structures implicated in cases of gonorrhœal arthritis, which was an affection not far removed from chronic rheumatoid arthritis. Dr. Todd had many years ago dwelt on the connexion that existed between certain instances of chronic arthritis and leucorrhœa. He believed that the absorption of unhealthy secretions from the uterus led to symptoms of rheumatism, and ultimately to the ankylosed and deformed joints characteristic of chronic rheumatoid arthritis. In the year 1835 Mr. Macnamara met with a case in which a woman, 25 years of age, presented typically deformed and fixed joints, which he, like Dr. Todd, attributed to the absorption of septic matter, not from the uterus, but from the sockets of teeth extensively affected with dental caries. From that time onwards he had watched cases in which the only curative treatment for symptoms of chronic rheumatoid arthritis that could be relied on was the removal of the cause of septic infection. He fully recognised the fact that the symptoms and pathological changes characteristic of this form of arthritis were attributable in some cases to rheumatism, in others to gout, or it may be to a neurosis, but some of these cases unquestionably depended on toxic poisoning, and any form of rational treatment must be based on the appreciation of the origin of the disease with the object of its removal and of overcoming its deleterious influence.

Dr. C. O. HAWTHORNE, in discussing the relation of acute rheumatism to chronic rheumatoid arthritis, said they were all agreed in calling the acute disease characterised by general febrile disturbance and pain and swelling affecting several or many joints "acute rheumatism." They were all further agreed that subacute rheumatism was possibly of essentially the same nature as the condition called "rheumatic fever." It was admitted that there was a condition, chronic in its course for the most part, marked by swelling and deformity in many joints, usually called "chronic rheumatoid arthritis." To the question, Was chronic rheumatoid arthritis simply a chronic form of the disease known as rheumatic fever or was it an entirely different disease? some authorities said that it was simply rheumatism, others stated that whatever it might prove to be it was certainly not a rheumatic arthritis. There was the theory that chronic rheumatoid arthritis was a disease dependent upon micro-organisms, and there was the theory that the condition was due to septic absorption. Another theory was that the phenomena of rheumatoid arthritis depended upon disturbances in the trophic nervous apparatus, some of these being primary changes in the spinal cord, others being induced in the spinal cord by irritation reflected from the pelvic organs or from some other viscera. A not inconsiderable number of cases of chronic rheumatoid arthritis were found in patients who had at some previous period in their life suffered from rheumatic attacks. There were instances in which the chronic rheumatoid condition followed immediately upon an attack of acute rheumatic fever. If the family histories of these patients were examined there were not infrequently found evidences of rheumatism in members of the family immediately related to the patient. There were certain cases in which the symptoms, the history, and the physical signs and conditions were such that it was impossible to exercise any confident judgment and to say that that was a case of rheumatism and not rheumatoid arthritis. Dr. Hawthorne then proceeded to give in detail the history of a case in point and exhibited photographs illustrating the condition. One of the most confident grounds on which an endeavour had been made to mark a distinction between rheumatism and rheumatoid arthritis was the absence from the latter condition of cardiac disease. Endocarditis, they all recognised, was in the great majority of instances an evidence of rheumatism, but it was an expression of rheumatism which was specially prone to manifest itself in childhood and early adult life. It was by no means a common expression of rheumatism in middle life, but the majority of patients with chronic rheumatoid arthritis were those who were approaching or had reached middle age. Therefore it by no means followed that the absence of cardiac complications from the great majority of cases of rheumatoid arthritis proved that it was a condition quite distinct from rheumatism. Moreover, Charcot had stated that cardiac complications and valvular disease occurred fairly frequently in cases of rheumatoid arthritis. Trousseau had noted the occurrence in "nodular rheumatism," as he termed it, of lesions in the pericardium. For his own part, Dr. Hawthorne had been able to satisfy himself of the evolution of valvular disease during the study of an individual case of rheumatoid arthritis. Quite recently

they were taught that subcutaneous nodules were pathognomonic of rheumatism. Later experience had shown that similar nodules undoubtedly emerged during the progress of a certain number of cases of rheumatoid arthritis. In most instances the nodules of rheumatoid arthritis were larger and more persistent than the typical rheumatic nodule of the child and young adult, but considering the extremely chronic character of the majority of cases of rheumatoid arthritis it was not surprising that nodules when they occurred assumed a more persistent character than the subcutaneous nodules in the comparatively fleeting attacks of rheumatism which came on in childhood and early adult life. It seemed to him that it was a very suggestive fact that they observed nodules in rheumatoid arthritis essentially similar to those which were claimed as distinctive of rheumatism. He did not, however, wish to press the point too far because it had been shown that similar nodules also appeared in gout and in various other conditions. Still, he put it to them as a subject which was worthy of careful consideration. In regard to the development of muscular atrophies in chronic rheumatoid arthritis it seemed at first sight to savour of strong presumptive proof of the accuracy of the teaching that the phenomena of rheumatoid arthritis depended upon changes in the central nervous system. It was recognised that changes in the central nervous system and diseases of the spinal cord might produce muscular atrophies and it was known also that certain lesions in the cord were competent to produce severe articular disturbances, hence it was not unnatural to argue from the development of muscular atrophy that all the phenomena of the disease depended upon trophic nervous change. It had, however, been taught by Sir James Paget many years ago, and his teaching had not been seriously disputed, that any joint lesion might be followed by atrophy affecting the muscles which acted upon that joint. The joint lesion might be very slight, but the atrophy which followed might be very considerable. The atrophy was certainly not due to disease, for it was too rapid to be thus account for, and, further, it selected certain groups of muscles and neglected others, so that there was no issue upon the question of disease. The suggestion was that the joint lesion through the afferent nerves led to trophic disturbances in the spinal centres and the disturbances so produced were prejudicial to the nutrition of the muscle. No one was prepared to argue that in a case of a sprain the whole phenomena, including atrophy, depended upon trophic nervous disturbances, and it therefore followed that muscular atrophy in cases of chronic rheumatoid arthritis was no proof at all that the regular changes of marked rheumatoid arthritis depended upon central changes in the spinal cord. He was loth to commit himself to the definite opinion that chronic rheumatoid arthritis was due to changes in the trophic nervous apparatus, but he was not prepared to go so far as to say that he held very strongly that rheumatoid arthritis was certainly rheumatism. He did not think the charge of halting between two opinions was a serious one, for, although the cross-bench type of man was not popular amongst politicians, it could hardly be urged as a reproach in medical circles where so little was known and so much was vague and uncertain.

The meeting then adjourned to Tuesday, March 19th.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF STATE MEDICINE.

Notification of Tuberculosis.—Meat-supply.

A MEETING of this section was held on Feb. 15th, Sir C. A. CAMERON, the President, being in the chair.

The PRESIDENT read a paper on the Compulsory Notification of Tuberculosis in which he said that the contagious nature of tuberculosis of the lungs was now universally admitted. In December, 1900, the Public Health Committee recommended the Corporation of Dublin to add tuberculosis of the lungs to the schedule of notifiable diseases. After a debate the further consideration of the proposal was adjourned for six months in order that more information on the subject should be obtained by the Public Health Committee and submitted to the corporation. The Local Government Board for England had received from several authorities applications for permission to make tuberculosis compulsorily notifiable but the Board had not given the required sanction. It was unlikely that the Irish Local Government Board would have acted differently had the Dublin Corporation adopted the report of the Public Health Committee recommending compulsory notification. Voluntary notification of tuberculosis existed in several English towns and payment was made for the notifications. There was no available fund in Dublin, or probably in any other Irish town, for such a purpose. Many English and Scotch towns had funds which enabled payment to be made for voluntary notification, whilst the Dublin Sanitary Authority could only pay for compulsory notifications. It was with this inability in view that the Public Health Committee recommended compulsory notification as the only kind that could be paid for. As to the desirability of making phthisis notifiable opinion seemed to be divided. It had lately been made compulsorily notifiable by the Norwegian Legislature. In some of the United States it was notifiable; for example, in Michigan and New York. The principal objection to notification was the difficulty in determining the proper time to notify. He thought that cases should not be notified unless the physical signs of phthisis were unmistakeably present or unless the bacilli of tubercle had been detected.

Dr. HENRY O'NEILL of Belfast read a paper entitled "Our Meat-supply and How it may be Improved." Meat inspection in Belfast was conducted under the control of the Market Committee of the county borough by the inspector of meat and provisions. The staff consisted of one superintendent of the public abattoir and three practical meat inspectors. After inspection the meat was stamped, and the public were recommended when purchasing meat from a butcher to see that it was marked with the stamp. Belfast was probably the first city in the United Kingdom to adopt a scientific method of meat inspection. It was well known that large quantities of diseased meat were sold for human food. Much diseased meat was taken to manufactories where various kinds of minced meats were made, such as German sausages, pork or meat pies, brawn and other delicacies, highly seasoned to cover any imperfections in quality. Dr. O'Neill then enumerated several of the diseases of domestic animals which made their flesh unfit for food, and he described some of the frauds practised by butchers, such as the dressing of carcasses to represent the flesh of totally different animals. At Leadenhall Market a hamper was found containing unborn lambs, dressed like Ostend rabbits. A retriever dog was killed and dressed as lamb; the owner was convicted and got three months' imprisonment. At the Central Meat Market, London, parts of a donkey were dressed and exposed for sale as deer. In Paris all meat was inspected, whether killed at home or foreign, and when the meat was found to be sound it was stamped with a stamp bearing the signature "P.P.," which meant Prefecture of Police. In Berlin all cattle to be offered for sale in the city had to be brought to the public abattoir, and the slaughtering of cattle anywhere else within the municipal boundary was absolutely forbidden. No butcher in Berlin might offer meat for human food which did not bear the official stamp of the inspecting department of the central market.

SECTION OF PATHOLOGY.

Stenosis of the Cardiac Orifices.

A meeting of this section was held on Feb. 22nd, Dr. A. C. O'SULLIVAN, the President, being in the chair.

Sir GEORGE DUFFEY exhibited a remarkable specimen of Stenosis of the Tricuspid, Mitral, and Aortic Orifices obtained from a man of fine physique, aged 33 years. As a boy he was in the Royal Hibernian Military School and from the records of that institution, furnished by the medical attendant, Lieutenant-Colonel Whittaker, A.M.S. (retired), there was evidence of his having had acute rheumatism, followed by valvular disease of the heart, before he was 13 years of age. He was under treatment at the Royal City of Dublin Hospital on different occasions during the last two years for heart disease, the most prominent symptom being ascites, for which he was repeatedly tapped, altogether 40 times. In the intervals between the tappings he was able to follow his occupation as a porter in a wine store. He drank heavily. On Jan. 8th, 1901, he was admitted to hospital suffering from extreme dyspnœa, cough, ascites, and œdema of the legs. He was much cyanosed. The pulse was feeble, irregular, and intermittent. The heart was

enlarged; its impulse was diffused and weak. He died on Feb. 4th. At the necropsy the heart was found to be greatly enlarged; it was somewhat square in shape and weighed 25 ounces. The pericardium was thickened and universally and closely adherent. The girth of the heart was 14½ inches and from the commencement of the aorta to the apex it measured eight inches. The right auricle was dilated. Its cavity measured four inches vertically by three and a half inches transversely and its walls were hypertrophied. The tricuspid orifice was extremely contracted. It admitted the middle finger only. The valves were thickened and fused together by their free margins in the form of a funnel which projected into the ventricle. The opening of the funnel was oval-shaped, measuring three-quarters by five-sixteenths of an inch. The right curtain of the valve was adherent to the septum. The walls of the right ventricle were hypertrophied and the endocardium over some of the columnæ carneæ especially was thickened. The pulmonary artery and valves were normal. The walls of the left ventricle were much hypertrophied, being eleven-sixteenths of an inch in thickness. The mitral valves were thickened, atheromatous, and contracted, forming a slit-like opening, smaller than the stenosed tricuspid and admitting the tip of the index finger only. The aortic valves were competent, but much thickened and calcified, and the orifice was so much contracted that it only admitted a No. 10 catheter. The left auricle was dilated; its lining membrane was thickened and atheromatous. The arch of the aorta was atheromatous. The liver and spleen were both enlarged and hard, and the capsule of each was thickened and adherent. Their weights were 3 lb. 8 oz. and nine ounces respectively. The pancreas was hypertrophied and hard. Both kidneys weighed together eight ounces and were congested.

CAMBRIDGE MEDICAL SOCIETY.—A meeting of this society was held on March 1st.—Dr. J. S. Hinnell showed a specimen of Sarcoma of the Choroid. The patient was a man, 53 years old, who, in September, 1898, complained of failing vision, specially towards his right side. The left eye was normal except for a little hypertropia. In the right eye vision was = $\frac{4}{60}$ and less than J.20. To external examination the eye showed nothing abnormal, but the ophthalmoscope revealed a considerable detachment of the retina inwards and upwards, with a sharp firmly defined edge crossing the circular red reflex from above downwards and inwards. The detachment was very dark, did not move with the movements of the globe, and showed no folds. On closer examination there were seen on the summit of the detachment some dark hæmorrhages and irregular whitish patches. The detachment shelved off from its summit gradually in the downward, inward, and upward directions, but towards the temporal side it was precipitous, with a firm dark edge, which overhung its base on that side and just hid the optic disc. There were two small retinal hæmorrhages. The detachment was from four to five millimetres deep. The eye was excised and sent to Mr. C. D. Marshall, the curator of the Moorfields Museum, who reported that it contained a sarcoma of the choroid and that the optic nerve was apparently not involved. The interesting features of the case seemed to be that in spite of the absence of such signs of intra-ocular growth as increased tension or enlarged episcleral vessels, yet the character of the detachment was so unusual as to create suspicion at once. For there were no whitish or grey reflex, no folds of the retina, and no flapping of the detachment; above all, the causes of an innocent detachment were absent, there were no myopia, no cyclitis, no hyalitis, no choroiditis, and no history of injury. The patient was last seen in April, 1899, when he seemed to be quite well.—Dr. Hinnell also showed a boy, eight years old, having a Foreign Body on the Iris. In May, 1897, he was struck in the left eye apparently with a stone. Seven days after the accident the left eye was nearly quiet, but flushed on exposure to bright light. The cornea was clear except for a minute opacity close to its centre. The aqueous was clear and the anterior chamber was normal. The iris acted well to light, there were no synechia and no iritis. On the pupillary edge of the iris was a minute foreign body not larger than a small pin's head and not unlike a piece of stone. The lens and the vitreous were clear. The minute foreign body had obviously pierced the cornea and become imbedded in the iris. The case was watched and in a few days the eye was quite quiet and apparently none the worse for the accident. There had been no attacks of inflammation nor any trouble with the eye since. Vision had not been affected. The foreign body was in the same place now (February, 1901) and the scar in the cornea could still be seen by careful examination.—Dr. Griffith exhibited (1) a specimen of Proliferating Papilloma involving both Ovaries which he had successfully removed from a young woman; (2) a boy, 11 years of age, from whom the Astragalus was Removed for Severe Talipes Equino-varus of the Left Foot; and (3) a woman who 18 months previously had the Left Breast and Axillary Glands Removed for Carcinoma and who two and a half weeks ago had a secondary growth, together with the breast, removed from the right side, but there had been no recurrence on the left side.—Dr. Boxall read a paper on the Dangers of Incomplete Abortion, in which he related a series of 18 cases seen mainly in consultation; in all of them abortion or miscarriage had taken place, but the uterus had been incompletely evacuated. One of these cases proved fatal from acute septicæmia, all the others recovered. He recommended that in such cases the uterus should be thoroughly emptied. Incomplete removal of the uterine contents was dangerous and futile, and operative interference was, in his opinion, likely to result in more harm than good unless the retained products were completely removed. For this reason curetting was often necessary. Douching the uterus with a strongly antiseptic solution was also frequently called for. But both measures required care in use—curetting that the uterine wall itself be not damaged, and the douching to prevent injurious absorption of the poisonous antiseptic used in the solution. After douching freely with a strong antiseptic solution—such, for instance, as 1 in 2000 sublimate—he was in the habit of adding water sterilised by boiling to the douche before the douche-apparatus was completely emptied, so that at last little more than sterilised water passed into the uterus and any excess of antiseptic was washed away. He had never found a blunt curette of the smallest use in cases where with the finger it was impossible to bring away the retained and adherent products. He thought it advantageous to use a fair-sized stirrup-shaped curette in preference to a mere bow, as at each scraping it denuded a larger surface and shortened the operation considerably when an extensive curetting was requisite. Hæmorrhage of a serious extent rarely occurred in the course of the operation, and all bleeding was as a rule controlled immediately by using the douche at 115° F. As a rule he made no direct chemical application to the denuded surface, regarding it as unnecessary when the douching had been efficiently performed, nor did he pack the uterus when decomposition had occurred, thinking it better in such cases to maintain free drainage through the cervix.

LIVERPOOL MEDICAL INSTITUTION.—The eleventh ordinary meeting of the session was held on Feb. 28th, Mr. Edgar A. Browne, the President, being in the chair.—Mr. Richard Williams reported two cases of the Removal of a Piece of Steel from the Vitreous by Means of Haab's Magnet. In the first case the metal had been in the eye for over four months. Cataract had been produced, but apparently the eye was otherwise sound. In the second case the foreign body had remained in the eye for over seven months and the eye had lost its vision from the first. A small incision was made in the cornea and when the magnet was applied the piece of steel shot out with great force and adhered to the point of the magnet.—Mr. Charles Shears was impressed with the value of Haab's magnet and considered that many eyes would be saved by its use. He referred to a case, however, in which the magnet had failed. The injury was a fortnight old, the cornea, the iris, and the lens were wounded and severe inflammatory reaction had occurred. The x rays demonstrated the presence of a piece of metal about the centre of the eyeball and Haab's magnet, which was used on three occasions, failed. Later the eyeball, being inflamed and softening, was removed. On opening the globe a small piece of steel was found firmly embedded in the abscess cavity between the back of the iris and the lens. Possibly the severe inflammatory reaction and inclosure of the foreign body which closely followed the injury was the reason why the magnet failed to draw the steel forwards.—Dr. W. Blair Bell related the case of a man, aged 65 years, who had used a Twig from an Elm Tree as a Bougie, a piece of which, two and a half inches long and as thick as a No. 12

catheter, had broken off in the bladder and was removed a week later by suprapubic cystotomy, the patient making a rapid recovery.—Dr. Blair Bell also related a case of Acute Primary Miliary Tuberculous Peritonitis in which a perfect recovery was made after laparotomy. He had performed the operation nearly a year ago. He advocated laparotomy in all such cases because (1) this was the only safe and effectual way of evacuating encysted fluid; (2) it produced the vasomotor shock (? dilatation) which he thought was responsible for the cure; (3) the condition of the Fallopian tubes could be investigated in women; (4) all adhesions could be broken down; and (5) the mortality after laparotomy was less than that after medical treatment.—Dr. T. R. Glynn referred to a case of tuberculous peritonitis with effusion where recovery followed the spontaneous discharge of the ascitic fluid through ulceration in the neighbourhood of the umbilicus. He had also seen cases of recovery in the same condition after paracentesis. While his experience led him to recognise the value of laparotomy in tuberculous peritonitis he thought that in the cases complicated with effusion tapping and evacuation of ascitic fluid might be resorted to with advantage before the graver operation.—Dr. W. Alexander remarked that many of these cases were not strictly tuberculous, no tubercle bacilli being found; it was surprising how easily such cases were often cured by draining and yet how difficult it was to treat cutaneous tubercle even by most heroic measures.—Mr. W. Thelwall Thomas mentioned a case of tuberculous peritonitis operated upon seven years ago, the boy now being in perfect health. He had removed a portion of the thickened peritoneum for microscopical purposes and sections exhibited miliary tubercle. He urged the importance of thus verifying the diagnosis and not trusting to naked-eye pathology.—Dr. T. B. Grimsdale remarked upon the apparently acute onset of tuberculous peritonitis. It was certain that tubercle could be present in the peritoneum without causing symptoms. The disease remained "latent" until some cause lighted it up and produced what appeared to be an acute onset. He thought that the removal of the fluid had a great effect in curing the disease and related a case in support of this view.—Dr. C. J. Macalister considered that statistics were required showing the results of surgical treatment of tuberculous peritonitis, both favourable and unfavourable; in his experience the prognosis was not bad in a number of cases treated by medical means. He cited the case of a child who had wasted greatly but had ultimately recovered on being sent to the country. He considered discrimination necessary in the selection of cases for operation; those cases in which large tuberculous masses were present were unfavourable for surgical treatment. —Dr. H. Briggs, Dr. E. T. Davies, Mr. G. A. Hawkins-Ambler, and Mr. Rushton Parker discussed the case and Dr. Bell replied.—Dr. Arthur Evans read a very interesting paper entitled, "With the Imperial Yeomanry Field Hospital in South Africa." The particular hospital was that associated with the name of the Countess Howe. Dr. Evans illustrated his paper by means of lantern slides from photographs taken during the various marches of the hospital which had done excellent work, had never been more than two weeks in any one place, and starting from Cape Town had gone through Bloemfontein to Pretoria, which place they had gone from and re-entered five times, after seeing service in various districts. Dr. Evans remarked upon 100 cases of gunshot wounds treated in the field.

MANCHESTER MEDICAL SOCIETY.—A meeting of this society was held on March 6th, Dr. W. Milligan, Vice-President, being in the chair.—Dr. J. Howson Ray showed a case of Pyonephrosis treated by Drainage and Abdominal Nephrectomy. The patient, a man, aged 24 years, received an injury to the right loin in February, 1900, having previously enjoyed good health. Four months later he noticed a swelling in the right loin and was admitted to hospital under the care of Dr. Dixon Mann. The swelling subsided with rest in bed and he left the hospital in three weeks' time. A fortnight later he was readmitted with a return of the swelling and this soon filled up the right loin, the hypogastrium, and the left iliac fossa. On August 15th Dr. Ray operated through the right linea semilunaris, excluded the peritoneal cavity, and on incising the kidney drew off 161 ounces of pus and water The left kidney was apparently normal. On Nov. 29th Dr. Ray enucleated the kidney through the right semilunar line without opening the peritoneal cavity. The ureter was found to be kinked about its junction with the renal pelvis. The patient made a good recovery, the left kidney acting well. The excised right kidney was shown and proved to be a case of traumatic hydronephrosis with secondary infection.—Dr. Dixon Mann also made some remarks upon the case.—Dr. F. J H. Coutts (for Professor S. Delépine) demonstrated the Widal Reaction for the Diagnosis of Typhoid Fever.—Dr. R. W. Marsden opened a discussion on the Diagnosis and Treatment of Typhoid Fever. He considered that a definite conclusion could be arrived at either from the history and clinical manifestations of the attack or from the use of specific tests. Separation of the bacilli from the stools, &c., being impracticable and tapping of the spleen unjustifiable reliance must be placed on the Widal reaction. The difficulties in connexion with the serum test were next dealt with. Dr. Marsden then mentioned the diagnosis of cases in which indefiniteness of the symptoms or their special localisation caused the difficulty and in both of these the greatest value was attached to the Widal reaction or in some of the latter group to the necessity of a bacteriological examination. Proceeding next to the treatment of typhoid fever the discussion was limited to (1) diet; (2) hydrotherapy; and (3) surgical interference. Dr. Marsden favoured the earlier administration of solid food in certain cases and on a definite plan, whilst whenever possible he laid great stress on the importance of a regular system of tepid baths from 75° to 85°F. The necessity for more accurate and earlier diagnosis of the various abdominal complications was then insisted on in order to allow of an operation being attempted with greater chance of success, since if so-called pathognomonic signs of peritonitis, &c., were waited for the time for intervention would often have gone by.—The following members took part in the discussion: Professor Delépine, Dr. J. Dreschfeld, Dr. Dixon Mann, Dr. J. Niven, Dr. E. S. Reynolds, Dr. Coutts, Dr. Moore, and Dr. McDougall.—Professor Delépine drew attention to the Dangers Attending the Use of Methods of Higher Dilution in performing the Serum Reaction which allowed the action of gravity to take part in the process. Professor Delépine among other remarks stated that the value of Widal's test should be estimated by comparing the results obtained between the seventh and fourteenth day of the fever by the test and by ordinary clinical methods respectively, the criterion being the subsequent course or termination of the cases. He had found that under those conditions the test had given reliable information in from 97 to 98 per cent. of the cases, and in some series in 99 per cent. Some suggestions as to the best method to be used had been made by Dr. Marsden who unfortunately had not based his remarks on his own personal experience. Over 6000 cases had been tested in Professor Delépine's laboratory since July, 1896, the method adopted by him having been adhered to from the first. He had found on the basis of numerous comparative experiments that if care was taken to prevent the bacilli running together as easily as they did in tubes, pipettes, or hanging drops (*Medical Chronicle*, March, 1897), it was simpler to use a uniform dilution of 1 in 10, and to estimate the degree of the reaction by its rapidity and completeness than to have recourse to dilution, which did not increase the accuracy of the reaction. With regard to the absence of reaction in a few typical cases of typhoid fever Professor Delépine had on previous occasions shown that this was observed chiefly in cases of typhæmia where the invasion of the blood by typhoid bacilli indicated an absence of reaction on the part of the tissues. In such cases the examination of the blood for bacilli could be resorted to with advantage.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 28th, Dr. E. Wearne Clarke, the President, being in the chair.—Dr. W. S. Porter showed a case of Diffuse Scleroderma. The patient was a woman, aged 39 years. There was a history of enlargement of the thyroid when she was about 18 years of age; also a history of head injury and unconsciousness lasting several hours at the age of 24 years and of liability to headaches ever since. She had been married for 14 years and had had nine miscarriages, all under three months, and one child subsequently which had lived. The scleroderma came on quite suddenly six months ago with a nervous attack in which the patient had twitching and was unconscious for three hours. The following day both the hands and the forearms and the right leg were considerably swollen and the swelling of the upper extremities had persisted ever since. A second seizure, similar in character,

but shorter in duration, occurred three months ago. Since then she had lost nearly two stones in weight and had become progressively weaker. When admitted into the Sheffield Royal Infirmary a fortnight before the hands and forearms were typically hard, pale, and waxy-looking and glossy, and hardly any movement was possible in the joints of the wrists and fingers, the hands being claw-like from the flexion of the first phalangeal joints. There were also large areas of leathery skin over the front of the thorax and abdomen, neck, and cheeks and in the lower extremities. The mouth was then drawn and widened to some extent by rigidity, altering the facial expression, and there was some difficulty in protruding the tongue and in the movements of mastication. The forehead and eyelids were fairly mobile. There appeared to be almost complete atrophy of the thyroid. The patient was bright and intelligent and there was no slowness of speech or mental defect. There was no acute pain but chiefly inconvenience from her hide-bound condition and a feeling of exhaustion. The temperature was normal, the pulse was rather quickened, and the heart, the lungs, the kidneys, and the alimentary tract were apparently normal. She had been treated for a fortnight by rest in bed and general friction with oil and warm bathing. Internally only thyroid extract had been given. There had been a very marked improvement generally and locally, and the skin, which had been quite dry for some days after admission, had begun to act with considerable relief to the patient. —Dr. S. White showed a case of "Scissors Legs."—Mr. R. Favell related a case of Cæsarean Section performed for obstruction of labour by a dermoid ovarian tumour. The patient was a primipara, aged 30 years. She had been in labour some hours when the medical man in attendance found a swelling below the presenting part. This he endeavoured to push up out of the pelvis but without success. Mr. Favell saw the patient about six hours after the onset of regular pains the os was then fully dilated; and a semi-solid, doughy tumour was felt in the back of the pelvis below the presenting part. A dermoid tumour of the ovary was diagnosed. The distance between the under surface of the pubes and the tumour was one and a half inches; the child was presenting by the breech. Cæsarean section was performed. After extraction of the child and placenta the tumour was brought out of the pelvis and removed. It was a dermoid cyst containing balls of hair, bones, and sebaceous matter. The uterine wall was sutured in the usual manner. There was very little bleeding. The patient made a good recovery.—Mr. R. J. Pye-Smith showed: 1. A girl, aged 10 years, the subject of Congenital Bilateral Displacement of the Hips. There was but little deformity and the movements of the limbs were almost perfect. A confirmatory skiagraph of the case was also shown. 2. A girl, aged five years, with Congenital Displacement of the Left Hip. A considerable limp was present but the movements of the limb were nearly perfect.—Dr. Porter read a paper on the Certification of the Insane, dwelling principally on the difficulty in dealing with certain forms of incipient insanity, cases of concealed insanity, and alcoholics, in conformity with the requirements of the ordinary lunacy certificate, and suggesting some modifications to meet special cases. He illustrated some of his points by reference to cases which had come under his own observation.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.—A meeting of this society was held on March 15th at the Belgrave Hospital for Children, Dr. Edmund Cautley being in the chair.—Dr. George Carpenter showed two sisters with many curious Deformities of the Skull, Face, Fingers, &c. There were also developmental heart lesions and ruptures in the abdominal wall. There was no history of maternal impressions.—Mr. Sydney Stephenson pointed out that the eyes were displaced by some developmental fault in the position of the roof of the orbits and that the left cornea of the elder child was imperfectly differentiated from the sclerotic.—Dr. Sutherland and Mr. Clement Lucas also made some remarks.—Dr. William Ewart showed an infant, aged seven months, suffering from Asthma. During the paroxysms all the symptoms of true asthma were present, while during the interval the child was quite comfortable. Gastric disturbance and vomiting were dominant features of the case. Relief was obtained by regulation of the diet and the internal administration of apomorphine and iodide of potassium and hydrochloride of cocaine. Some benefit was also obtained from the application of expiratory pressure to the thorax.—The Chairman agreed that such cases were rare and were sometimes difficult to diagnose from capillary bronchitis.—Dr. Chapman, Dr. Chaffey, Mr. A. H. Tubby, and Dr. Sutherland also discussed the case.—Mr. F. Jaffrey showed, for Mr. T. Clinton Dent, a case of Sub-dural Abscess treated by operation. The patient, a lad, aged 12 years, made a rapid recovery.—Mr. Jaffrey also showed a Tumour occupying nearly the whole of the Sacrum and Coccyx in a girl, aged two years. It had been tapped twice and found to contain dark-coloured fluid not of cerebro-spinal origin.—Mr. Clement Lucas, who doubted whether the tumour had any connexion with the spinal cord and canal, said that the proper treatment would have been early excision.—Mr. Jaffrey, in reply, said he now agreed with Mr. Lucas's view.—Dr. Cautley showed a lad, aged about eight years, who developed left hemiplegia and athetosis after the occurrence of "fits." The probable explanation was a cortical hæmorrhage and thrombosis due to a fit with some persistent local irritation of the nature of sclerosis.—Dr. Cautley also showed two cases of Microcephaly in boys, aged respectively five and four years. Both patients had suffered from head-nodding associated with nystagmus in the elder. He was not prepared to recommend operation. —Dr. Leonard Guthrie, Dr. Turnbull, Dr. Sutherland, and others discussed the cases.—Dr. Henry Ashby (Manchester) read a paper on a case of Congenital Acute Nephritis. An infant was stated to have shown signs of dropsy on the second day after birth and to have vomited and passed but little urine. When examined at four weeks of age there was excessive œdema of the face, trunk, and limbs. The child died in uræmic convulsions. At the post-mortem examination the kidneys were found to be lobulated, and upon section they were pale, resembling the appearance of "the large white kidney." The heart was small and contracted, and the liver and lungs were gorged with dark blood. Microscopically the kidneys showed many greatly dilated convoluted and straight tubes; many blood casts and fibrinous casts were present; the epithelium for the most part was granular; and there were commencing peri-globular nephritis as well as interstitial changes between the tubules. There was no evidence of syphilis.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY. A meeting of this society was held at the dispensary on March 6th, Dr. C. H. Cattle, Vice-President, being in the chair.—Dr. Cattle read a paper on the Prognosis and Treatment of Epilepsy, with an account of a case complicated by mitral stenosis which had been under his observation for 18 years. The patient was a healthy girl till when about 20 years of age, during the mental strain of a competitive examination, she had her first definite attack of petit mal—short unexpected attacks of unconsciousness. The heart was carefully examined by Dr. Cattle and Dr. W. H. Ransom and was found to be normal. Three months' rest from her duties as head-mistress of a large school and dosing with bromides caused cessation of the fits for a time, but they returned on resumption of her duties. The first major attack occurred three years afterwards at night. One or two months would elapse between the attacks; then two or three would occur in rapid succession. Bromides were taken continuously and she continued her duties as head-mistress for nine years and then married, the attacks thereupon becoming more frequent. A year before this she was under treatment for excessive menstruation and an indistinct apical systolic murmur was noticed. Her anæmic condition then was thought to explain it, but in the course of two or three years its character altered to a loud presystolic rumble with palpable thrill and slapping second sound. The heart's apex was not displaced; the pulse was small and regular. The patient was very liable to bronchial attacks and occasional slight attacks of hæmoptysis. She had never had rheumatism in any form or any disease likely to cause endocarditis and Dr. Cattle could offer no suggestion as to the cause of the heart disease or trace its connexion with the epilepsy, but considered the prognosis very bad owing to the circulatory risks during an attack when respiration was for a short time suspended. As regards treatment Dr. Cattle thought success could only be hoped for when cases were treated at an early stage of the disease by drugs, mental rest, &c.—Mr. A. R. Anderson read notes of nine recent cases of Simple Fracture treated by wiring, five of the patella, two of the

olecranon, one of the tibia and fibula, and one of the femur. In four of the patellar cases the fracture was transverse, in one it was comminuted. In four the separation between the fragments varied from one and a half to two and a half inches, and in all these the lateral expansions of the capsule were badly torn. In the two olecranon cases the process was broken off at its base. No splints were employed in the after-treatment of these cases and passive movements were begun at about the end of 10 days, when the wounds had healed. They all recovered with perfect use of the joint. The fracture of the tibia was a long oblique one four and a half inches in length, and it was found impossible to keep the fragments in position by any means short of operation. The same difficulty existed in the case of fractured femur. The bone was broken rather above the middle of the shaft. At the time of operation an oblique fracture was found with the lower end of the upper fragment thrust through the quadriceps extensor, which effectually prevented reduction. Both these cases made good recoveries without noticeable deformity. In the femoral case there was an inch of shortening.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 15th, Dr. A. G. Barrs, Vice-President, being in the chair.—Mr. A L. Whitehead read a paper on the Treatment of Glaucoma by Excision of the Superior Cervical Ganglion of the Sympathetic. The paper will be published in THE LANCET shortly. —Dr. James Kerr (Bradford) said that the indications for the operation required defining; it was still purely experimental and probably might be useful in the rare cases of glaucoma which occurred in young adults and went on to blindness.—Mr. Moynihan, Mr. Lawford Knaggs, Dr. S. Long, Dr. J. E. Eddison, and Dr. Barrs also joined in the discussion.—Dr. J. Allan described a case of Tetanus treated by Antitoxin. The patient was an intemperate man, aged 54 years, who had sustained a compound fracture of the right thumb. At first he had no medical treatment. Twelve days later symptoms of tetanus began to develop and the disease was well marked when the antitoxin treatment was commenced on the nineteenth day after the injury. Antitoxin from the Jenner Institute was used and 180 cubic centimetres in all were administered during twelve days. There was marked relief after three days' treatment when 70 cubic centimetres had been given. Every night a draught of half a drachm of chloral hydrate was taken. The injured thumb recovered. The injections were given subcutaneously at various parts of the abdominal wall; no irritation or rash resulted; the case was one of moderate severity.—Dr. E. F. Trevelyan said that he had never seen any real benefit from the antitoxin treatment of tetanus, even including a case in which the antitoxin had been given by the intra-cerebral method.—Dr. A. Wear read a paper on Intra-uterine Fœtal Rigor Mortis. This condition, he said, was somewhat rare. Spiegelberg, in his recent work upon Obstetrics, said in his brief notes upon the condition: "This form of rigidity is undoubtedly extremely rare; indeed, so rare that Schwartz denies its occurrence." Batelsen and Scultze reported cases as early as 1856–57, and later on the continent others were recorded by Haake and Schroeder. Grigg, Boxall, Jones, and Davidson had since reported cases in England. Dr. Wear's patient, a big-boned woman, the mother of 10 children, was easily delivered of a stillborn child in a state of rigor mortis. The colour of the child was bluish and mottled; its limbs were rigid; its arms were semi-flexed at the elbows and the legs at the knees. The fœtus was well developed with no sign of maceration; the rigor mortis was so marked that it was impossible to bend or straighten the limbs. The labour was in this case, if anything, rather precipitate, but in a little woman with a small pelvic inlet the want of adaptation of the fœtus would greatly increase the dystocia. In the recorded cases forceps had generally been employed with success.—Mr. C. J. Wright discussed the paper.—Cases and specimens were shown by Mr. T. R. Jessop, Professor de Burgh Birch, Dr. E. W. Selby (Doncaster), Mr. W. H. Brown, Dr. T. Wardrop Griffith, Mr. E. Ward, Dr. A. L. Whitehead, Mr. P. J. Cammidge, Mr. Lawford Knaggs, Mr. H. Littlewood, Dr. Trevelyan, and Mr. Mayo Robson.

SOCIETY OF ANÆSTHETICS.—A meeting of this society was held on March 1st, Dr. J. F. W. Silk, the President, being in the chair.—Dr. R. J. Probyn-Williams, in conjunction with Mr. Harold Barnard and Dr. R. J. Howard, communicated a paper on a Modified Form of Dr. Schleich's Anæsthetic Mixture. The composition of the mixture employed was that recommended by Dr. Wertheim of Vienna—viz., chloroform one part, petroleum ether one part, and sulphuric ether two parts. It was pointed out that petroleum ether was now included in the appendix of the British Pharmacopœia, where it was stated to have a specific gravity of from 0·670 to 0·700, but that actually used in these observations had a specific gravity of only 0·643. Experiments were first made upon animals and some of the tracings thus obtained were thrown upon the screen. With petroleum ether alone it was very difficult to kill the animal (a cat). The blood-pressure fell slowly but steadily, the heart-beat became more rapid, and the heart-volume increased, owing probably to the rise in the venous pressure. These effects contrasted strongly with those produced when chloroform was inhaled. If the above-mentioned mixture was substituted for the petroleum ether there was hardly any fall in the blood-pressure noticed until the inhalation was pushed to the extreme. In practice a special form of Skinner's frame was used. 34 administrations had been undertaken varying in duration from five to 45 minutes. Induction was easy, free from struggling, and occupied on the average eight minutes. There were no excessive secretion of mucus or saliva and no signs of circulatory failure or cyanosis. The anæsthesia, though sufficient, was light and patients came round rapidly; relaxation was perfect. The pupils reacted as when A.C.E. was used; shallow breathing was not observed so long as the mixture was given sufficiently freely, there were no serious after-effects, and sickness was much the same as in chloroform.—Dr. Dudley Buxton said that he had tried one of Dr. Schleich's mixtures that was practically identical with that used by Dr. Probyn-Williams. On the whole his results were not very satisfactory, and although Dr. Probyn-Williams's paper encouraged one to try again he thought that many more cases would have to be recorded before a definite decision could be arrived at.—In reply to Mr. H. Hilliard, Dr. H. Low, Dr. G. Flux, and the President, Dr. Probyn-Williams said that the amount of the mixture used in each case had not been measured, but it must be given with a very free hand. It was not suited for the Junker's bottle.—Mr. Barnard said he thought that this was a very good example of the advantages of physiological experiments, the substance being tried upon animals before it was used on human beings; he had not specially determined the effects of change of posture.

WINDSOR AND DISTRICT MEDICAL SOCEITY.—A meeting of this society was held at the Guildhall, Windsor, on March 13th, Mr. W. B Holderness, the President, being in the chair.—Dr. R. Paramore showed (by permission of Dr. Norris) the Intestines from an Infant, aged seven months, who had suffered from intussusception. The patient had been treated successfully by hydrostatic pressure. The intussusception was seen to be completely reduced, but death had occurred 57 hours after the operation from ulceration of the cæcum.—Cases and specimens were also shown by Dr. A. G. Paterson, Dr. E. B. Hulbert, Mr. T. H. Scutt, and Dr. G. E. Hale.—Dr. H. D. Rolleston read a paper on the Uses and Abuses of Arsenic. Arsenic, he said, was a drug that often produced unexpectedly brilliant results—e.g., in preventing a tendency to catching cold and to the recurrence of labial herpes. For morning diarrhœa it often acted like a charm. Its uses as a digestive stimulant were referred to and its mode of action in pernicious anæmia and other blood diseases as well as in chorea was discussed. The question as to how chronic skin diseases were benefited by arsenic was raised. The mode of administration was next considered and stress was laid on the good results obtained by hypodermic use. The cacodylate of soda had at any rate in his experience been somewhat disappointing. In connexion with the effect of the drug on the skin, the production of keratosis, warts, and in long-standing cases, epithelioma was described. The irregularity with which peripheral neuritis developed was discussed and examples were given, a case of leukæmia being cited in which 105 grains of arseniate of soda were given hypodermically in 271 days without any neuritis following. The influence of other poisons, such as alcohol or those of disease, in accelerating the onset of neuritis was insisted on, and an example from Sir A. Cooper's lectures on arsenical paraplegia was quoted. Failure of the heart from the toxic effects of arsenic was also mentioned. In conclusion, remarks were made on the different action of the iodides and salicylates

on the one hand, which had been known to induce growths like sarcoma, and arsenic on the other hand, which, as already mentioned, in exceptional instances induced epithelioma.—The paper was discussed by Dr. F. Hawkins and Dr. Paterson.

OTOLOGICAL SOCIETY OF THE UNITED KINGDOM.—A meeting of this society was held on March 4th, Sir W. B. Dalby, the President, being in the chair.—Mr. Cheatle showed a patient upon whom he had performed the Complete Post-aural Operation. The whole antro-tympanic cavity had become lined by a dry glistening epithelium and he wished to ask how such an epithelial lining differed from the lining membrane of a cholesteatomatous cavity.—Dr. Urban Pritchard said that in the one case the epithelium was derived from skin and in the other from mucous membrane.—Dr. Dundas Grant urged the advisability of leaving the lining membrane of a cholesteatoma in certain cases.—Mr. C. A. Ballance said that in the ordinary form of cholesteatoma there was no lining membrane at all and that the appearance of a membrane was simply due to the flattening from pressure of the cells forming the cholesteatoma. He strongly deprecated leaving any portion of the cholesteatoma behind.—Mr. C. H. Fagge showed a patient with a Closed Meatus and with Facial Paralysis as the result of a Mauser bullet wound and asked whether the meatus should be opened up, considering that the middle-ear appeared to be intact.—Mr. Cheatle, Dr. Law, Dr. Milligan, and others discussed the case.—Dr. Dundas Grant showed some Teaching Diagrams for the Explanation of Weber's and Rinne's Tests.—Mr. R. Lake showed the following specimens: (1) Absence of Tendon of Tensor Tympani; (2) Pigmented Warty Growth from the Auricle of a Female, aged 50 years; and (3) Caries Necrotica of the Outer Antral Wall from a Child, aged four years.—Dr. StClair Thomson showed a Foreign Body which had remained innocuously in the Meatus for 26 years.—Dr. Macnaughton Jones referred to a case where a grain of shot had remained in the ear for 17 years.—Dr. Pritchard referred to a case where a cherry-stone had been in the ear for 50 years.—Dr. H. Jones read the notes of a case of Temporo-sphenoidal Abscess in which operation had been followed by recovery and showed a Specimen and Microscopical Sections from a child, aged two years, who died in convulsions 24 hours after the ordinary mastoid operation.—The cases were discussed by Mr. Cheatle, Mr. Lake, and Dr. Milligan.

LARYNGOLOGICAL SOCIETY OF LONDON.—A meeting of this society was held on March 8th, Dr. Cresswell Baber, the President, being in the chair.—Sir Felix Semon showed a case of Malignant Disease of the Larynx treated by Thyrotomy and removal of the diseased area, shown seven months after the operation, occurring in a man, aged 47 years. The patient was in excellent health and there was no sign of any local recurrences.—Mr. Betham Robinson showed a specimen of Retention Cysts of the Lymphoid Follicles of the Vallecula. He also showed a case of Chronic Laryngitis, two cases of recent Perforations of the Septum Nasi, and a case of Tumour of the Base of the Tongue. In the last-named case the diagnosis lay between syphilis and sarcoma.—Dr. de Havilland Hall showed a man, aged 26 years, with the left vocal cord in the cadaveric position, paralysis of the parts supplied by the right seventh nerve, palsy of the right genio-hyo-glossus and of the left half of the palate. Dr. Hall thought that the symptoms were due to a disseminated polio-encephalitis.—Dr. L. H. Pegler showed a case of Exaggerated Deflection of the Septum Nasi and one of Advanced Malignant Disease of the Larynx.—Dr. Jobson Horne showed a case of Malignant Disease of the Tonsil with Glandular Enlargement.—Mr. F. Harvey showed a man in whom Total Extirpation of the Larynx had been performed for Epithelioma with a very favourable result.—Mr. H. Davis showed a man with most exaggerated Elongation of the Uvula and also some specimens of Post-nasal Adenoid Growths removed *en masse* with a curette.—Mr. P. R. W. de Santi brought forward a case of Sub-mucous Hæmorrhages in the Mouth.—Dr. Watson Williams showed a drawing of Congenital Fenestration of the Faucial Pillars.—Dr. Dundas Grant showed a case of Fixation of the Left Vocal Cord probably due to Ankylosis.—Mr. W. G. Spencer showed a boy with a Tumour of the Right Vocal Cord and a Swelling on the Right Leg. The latter was probably of syphilitic origin, but the opinion of the members was that the former was of a simple nature.—Dr. W. Permewan showed a case of Pharyngeal and Laryngeal Tumour for diagnosis, which was thought to be malignant.—Dr. F. W. Bennett also showed a Laryngeal case for diagnosis.

PATHOLOGICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on March 13th, Dr. A. T. Wilkinson, the President, being in the chair.—Dr. W. Milligan showed a series of specimens illustrating some of the chief Intracranial Complications resulting from Suppurative Middle-Ear Disease and made some remarks as to the more usual routes by means of which disease spreads from the middle-ear to the brain.—Dr. Bannister and Mr. Southam showed a Papilloma of the Large Intestine which had produced symptoms of intussusception. The patient was a female, aged 77 years, who about once a month used to have a severe attack of diarrhœa. The growth was felt per rectum during one of these, and was pulled down by forceps, ligatured, and removed. It was attached to the margin of a considerable intussusception. Microscopically the tumour consisted of pure villous material. The patient had had a normal motion daily for the last 16 months.—Mr. Stanmore Bishop showed (1) a specimen of Ovarian Fibroma and (2) an Enlarged Gall-bladder the interior of which was entirely converted into a multilocular cystic tumour. There were no hydatids or gall-stones present.—Dr. Arthur Helme made some remarks on certain Degenerative Processes occurring in Uterine Myomata and showed specimens.—Dr. Powell White showed some sections of lung from two cases of Plague Pneumonia. The sections showed that the lesions were histologically identical with those of ordinary croupous pneumonia, the exudation consisting of fibrin, leucocytes, erythrocytes, and epithelial cells. The fibrous tissue of the lung and pleura was densely infiltrated with fibrin. The bacilli were found in the alveoli, in the subpleural lymphatics, and in the lymphatics accompanying the blood-vessels.

FORFARSHIRE MEDICAL ASSOCIATION.—A meeting of this society was held in the University College, Dundee, on March 7th, Dr. A. J. Duncan being in the chair.—Dr. A. McGillivray showed eight ophthalmic cases, one of which was a case of Green Vision associated with a Subhyaloid Macular Hæmorrhage in a man, aged 29 years. The hæmorrhage came on seven weeks ago during straining at stool and was of the usual shape but only about twice the size of the optic disc. On the following day when looking out of the window and at a distance of nine feet from it he discerned on the window pane a circular disc three feet in diameter and of a brilliant green colour. The size of the disc varied as the distance from the window. The green colour remained for 21 days when it was replaced by a dark shimmering.—Dr. McGillivray also showed a case of Subhyaloid Macular Hæmorrhage similar in shape and position to the other but without any green vision.—Dr. W. E. Foggie showed, for Dr. G. Halley, a girl, aged 15 years, the left half of whose lower maxilla had been excised for recurrent Myeloid Sarcoma in November last. An interdental plate had been inserted 14 days after the operation and retained for six weeks. There was now no deformity and the patient was able to masticate fairly well with the right side.—Dr. Foggie also showed a case of Syringomyelia of the cervical region in which, together with a marked muscular wasting in the upper left arm, there were associated trophic changes in the left elbow-joint.—Professor J. A. C. Kynoch showed several specimens, including two Multilocular Ovarian Cysts.

BOURNEMOUTH MEDICAL SOCIETY.—An ordinary meeting of this society was held in the library of the society, Shaftesbury Hall Chambers, on March 13th, Dr. Arthur Ransome, the President, being in the chair. There were 27 members and three visitors present.—The minutes of the previous meeting were read and signed.—In reference to the communication as to the Congress on Tuberculosis to be held in London in July, 1901, the recommendation of the committee that the President be requested to represent the society as a delegate was adopted unanimously.—The President said that he intended being present at the Congress and would be pleased to represent the society.—A ballot was taken for the election of a candidate whose name appeared on the agenda and who was duly elected.—Dr. S. L. Clift showed a patient with Chronic Synovitis of the Left Knee with Effusion into the Joint.—Dr. W. Hooper Masters showed a patient, a man, aged about 50 years, with Torticollis.—Dr. C. D. Muspratt showed a patient with Ankylosis of both Wrist-joints and Right Hip-joint the

result of subacute rheumatism. After this patient had been examined the left arm was submitted to the Tallerman treatment of superheated dry air. During the time the arm was in the apparatus Mr. Tallerman, at the request of the President, made a statement as to the apparatus and the kind of cases which had been benefited by being submitted to superheated dry air.—Several members asked further particulars which Mr. Tallerman gave.—The President conveyed a vote of thanks to Mr. Tallerman.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.—The sixth meeting of the session was held in the Medical Library of University College on March 13th, Dr. D. S. Davies being in the chair.—Dr. J. Beddoe was elected an honorary member of the society.—Professor Michell Clarke showed the following specimens: (1) Tumour of the Right Optic Thalamus and Crus Cerebri; (2) Tumour of the Right Cerebral Hemisphere involving the Corpus Callosum; and (3) a large Intestine from a case of Dysentery.—Dr. J. L. Firth and Mr. C. A. Morton discussed the specimens.—Dr. T. Fisher showed a series of sketches and diagrams of Displaced Abdominal Organs.—Dr. J. Swain, Mr. Morton, Dr. Aust Lawrence, Professor Michell Clarke, and Mr. T. Carwardine spoke on the various conditions.—Mr. Morton read a paper on a case of Successful Operation for Diffuse Peritonitis from Perforation of the Appendix.—Dr. Swain, Dr. P. W. Williams, Mr. Paul Bush, Mr. F. Lace, Mr. Carwardine, Mr. W. H. Harsant, Professor Michell Clarke, and Dr. W. C. Swayne discussed the paper.—Dr. B. M. H. Rogers read notes on a case of Acute Pemphigus.—Dr. J. O. Symes and Dr. Fisher remarked on the case.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.—The sixth meeting of the session of this society was held on March 11th, Dr. A. E. Maylard, Vice-President, being in the chair.—Dr. A. Maitland Ramsay showed a series of patients the subjects of Penetrating Wounds of the Eye, with Foreign Body in the Globe. The diagnosis of the condition had been helped by skiagraphy and in the treatment a modified magnet had been found of use.—Dr. W. L. Reid and Dr. A R. Ferguson exhibited a Papillomatous Cyst of the Ovary. The tumour had been removed by abdominal section and the patient had died the same evening from apoplexy.—Dr. G. H. Edington described a case of Epithelioma of the Mammæ of a Cat and showed macroscopical and microscopical specimens.—Dr. A. R. Ferguson showed microscopical sections of a Myxoma occurring in the Epidermis of the Finger after a punctured wound.—Dr. H. Rutherfurd showed a skiagram of a finger in which Dorsal Dislocation of the Middle Phalanx had occurred; the condition had been treated by the dorsal incision to divide the glenoid ligament.

PLAISTOW AND CANNING TOWN MEDICAL SOCIETY.—A meeting of this society was held on March 6th, Mr. H. A. Nelson being in the chair.—Dr. E. Hay showed two cases of Valvular Disease of the Heart in middle-aged men—one a case of greatly hypertrophied heart with a double aortic murmur; the other a case of both aortic and mitral incompetence with a greatly dilated heart. The cases were examined by those present and their conditions were discussed.—Dr. B. Dawson then gave an address of Dyspepsia and other Stomach Diseases. In the course of his address he stated that severe cases of neurasthenic dyspepsia were best treated by rest in bed. He pointed out the value of light solid food in some cases where "slops" were usually prescribed, and went on to describe the different clinical signs of dilated stomach, including the new method by the use of the x rays. He exhibited two patients with greatly dilated stomachs on whom he demonstrated the various signs described.—A discussion followed in which Mr. Nelson, Dr. J. Parker, Dr. J. Webster, and others took part.

ROYAL NATIONAL PENSION FUND FOR NURSES.—The annual meeting of this society was held last week at River Plate House, Finsbury-circus, E.C. Sir Henry Burdett, K.C.B., in moving the adoption of the report, said that it was with the deepest gratification that the council were able to announce that His Majesty King Edward VII. had graciously consented to remain patron of the fund and Her Majesty Queen Alexandra to remain the President. The total funds had increased during the year from £506,000 to £576,000. Mr. Eric Hambro, M.P., seconded the motion, which was carried.

Reviews and Notices of Books.

Essays on Consumption, together with some Clinical Observations and Remarks on Pneumonia. By J. EDWARD SQUIRE, M.D. Lond., D.P.H. Cantab., M.R.C.P. Lond., Physician to the North London Hospital for Consumption and Diseases of the Chest, and to the St. Marylebone General Dispensary. London: The Sanitary Publishing Company. 1900. Pp. 302. Price 10*s.* 6*d.*

THIS volume consists of reproductions of papers and articles which the author has at various times read before the medical societies or published in the medical journals. Dr. Squire has contributed freely to medical literature and some 25 articles appear in his book. The earliest dates back to 1889—"The Causation of Consumption"—a paper read before the Epidemiological Society, in which a full account is given of the various factors which tend to the production of pulmonary tuberculosis.

Chapter VIII. is an interesting one; it is headed "To what Extent can Legislation Assist in Diminishing the Prevalence of Consumption and other Tubercular Diseases?" The paper was read before the International Congress of Hygiene and Demography in 1891. Dr. Squire therein discusses various means which might be employed to combat the spread of tuberculosis. His remarks on "Notification" are a little difficult to follow. He says: "And yet there might be great advantage in requiring that a case of tuberculosis should, under certain conditions, be notified to the health officer." He does not define what he means by "certain conditions," but from his subsequent remarks we presume he would include amongst them the cases occurring in tenement houses, single-room dwellings, or common lodging-houses. He also points out with great frankness the difficulties which lie in the way of notification and which we have frequently dwelt upon. He is of opinion, however, "that the question of preventive legislation directed towards the diminution of tubercular disease is not one to be put aside because of its difficulties, though they are many and great." With most of his remarks we agree; to others, however, we must demur. General hygienic measures have done much to lessen the prevalence of tuberculosis, but to adopt some measures which have been proposed and which are beset with practically insuperable difficulties would inevitably end in failure.

As all the matter in this volume has been previously published we need not comment further; suffice it to say that there is the result of much valuable work scattered through the various chapters, the language employed makes them pleasant reading, and the latest phases of thought concerning "consumption" are here well reflected.

Sir William Broadbent contributes an "Introduction" to the collection of papers.

The Principles and Practice of Hydrotherapy: a Guide to the Application of Water in Disease. By SIMON BARUCH. M.D., Visiting Physician to the J. Hood Wright Memorial Hospital, &c. London: Baillière, Tindall, and Cox. 1900. Pp. 435, numerous Illustrations. Price 16*s.*

WE are informed in the preface that this book "is written by a general practitioner for the guidance of his colleagues." The experience is derived from a private hospital practice extending over a third of a century, and more recently from "special institution practice." We may congratulate the author on the advantage that he has taken of his opportunities for studying hydrotherapy, and he has done good work in publishing the conclusions at which he has arrived for the benefit of the medical profession in general. The work, however, is not a panegyric upon hydrotherapy, but a calm survey of the uses of water as a remedial agent precisely as medicinal remedies are discussed in the text-books on therapeutics.

The first part of the book deals with the physical properties of water and its mode of action in health. We do not remember to have seen such a complete and thorough discussion of the subject. Laboratory experiments are freely discussed and the author has made himself well acquainted with the literature of the subject and marshals his facts in an interesting and scientific manner.

In order properly to comprehend the action of water upon the surface of the body the anatomy, physiology, and functions of the skin must be understood, and Dr. Baruch therefore pays a due amount of attention to this subject, and the effects of hydriatic applications upon the distribution and composition of the blood are also fully considered. The author is of opinion from his clinical and experimental experiences that the changes produced by the thermic and mechanical stimulation arising from hydriatic procedures are very intense and far reaching; further, "that an enormous influence must be exercised by procedures which impress such changes upon the calibre of the vessels, the action of the heart, and the composition of the blood in health, and that its effect in disease must be equally pronounced."

The second part of the book is devoted to the practice of hydrotherapy. The various methods of applying water in disease are clearly and minutely described and illustrated, the *rationale* of each procedure is discussed, and its special therapeutic indications are outlined. The technical details having been thus fully considered the reader is introduced to the practical application of hydrotherapy in acute and chronic diseases.

We notice a marked absence of constant reference to the various spas and health resorts. This is commendable and tends to concentrate the reader's thoughts on the use of water as a remedial agent apart from the general effects of the *régime* of a recognised institution. The author maintains that a fallacious idea still prevails that cases of chronic disease must be sent away from home in order to obtain good results from hydrotherapy. He states that while it is true that the treatment in institutions offers the best prospect in chronic cases, the reason lies not so much in the facilities offered by them as in the experience and consequent skill acquired by physicians from the large *clientèle* of such establishments, and he believes that the requisite knowledge may be as readily acquired by the practitioner as is that of any other department of therapeutics. The question is a difficult one. No doubt Dr. Baruch is, generally speaking, correct, but the thoughts of the reader will at once advert to the so-called hydropathic establishments in this country which were, in the first instance, founded for the purpose of furthering the advantages of hydrotherapeutics, and although in a few this object is still upheld the majority have been turned into resorts for social gaiety, carried to an extent which by no means tends to the comfort and welfare of patients. Returning, however, to Dr. Baruch's book, we can speak in high terms of the manner in which his objects have been carried out, and the volume will serve as a good work of reference to students and practitioners of medicine on a subject but scantily dealt with in ordinary text-books.

A Text-book of Histology, including Microscopic Technic. By A. A. BÖHM, M.D., and M. VON DAVIDOFF, M.D., of the Anatomical Institute in Munich. Edited, with extensive additions to both text and illustrations, by G. CARL HUBER, M.D., Junior Professor of Anatomy and Director of the Histological Laboratory, University of Michigan. London and Philadelphia: W. B. Saunders and Co. 1900. Pp. 500. 351 Illustrations. Price 15*s.*

THIS volume, an authorised translation by Herbert H. Cushing, M.D., of the Jefferson Medical College, Philadelphia, contains substantially all the subject matter and illustrations of the second revised German edition of Böhm and Davidoff's well-known "Lehrbuch der Histologie des Menschen." Additions to the German text have been freely made, and more than 100 illustrations, the majority of which are original, have been introduced into the present work. These additions are to be found chiefly in the section which deals with the modes of termination of sensory and motor nerves. Here excellent descriptions and illustrations are given from the paper by Huber and Lydia de Witt, published in the *Journal of Comparative Neurology*.

We already possess an excellent translation of the "Lehrbuch der Histologie" of Stöhr, and the present work, though somewhat different in arrangement, essentially covers the same ground. The introduction to "Microscopic Technic" has wisely been condensed, so that only the simpler methods of fixing, hardening, and staining are described. The formula for Delafield's hæmatoxylin omits to give the necessary methyl alcohol, and Kultschitzky's hæmatoxylin, which is invaluable as a modification of the Weigert-Pal method, might well have been included among the logwood stains. The use of hæmatein in place of hæmatoxylin crystals, or the addition of various chemical agents which hasten the ripening of stains made with the latter, is now such a general practice that these details might have been supplied with advantage, and the use of carminic acid instead of carmine is useful for a much larger variety of stains than merely for Mayer's paracarmine, the single example which is given.

The use of compressed carbon dioxide, as recommended by Mixter, in place of the common ether-spray is of great service. The advantages of this are pointed out quite clearly, but the description which is furnished of the methods of preparing and soaking tissues for this apparatus are so meagre that we are satisfied no histologist would think of following the directions which are given. The various methods of impregnation with salts of gold, silver, or mercury might with advantage have been transferred to this introductory chapter instead of being distributed under the special technical methods which follow the sections descriptive of special organs or systems. The formulæ for the preparation of injection masses should have been accompanied by more explicit directions for performing artificial injections, and the method suggested, in which a syringe is used, is not often successful except in the hands of a skilled worker, and can never be regarded as more than a rough though rapid method which compares unfavourably with the perfect injections which can only be obtained by the use of an apparatus where a constant pressure of mercury, water, or air is employed. In order to obtain the best results in histological work it is also absolutely necessary in the case of the lower animals to inject the entire blood system with some fixing fluid, and we think that the importance of this procedure might have been pointed out, for although the majority of the illustrations are those of human histology some are necessarily made from preparations of the organs of the lower animals.

Both the text and illustrations of the book are, as a rule, excellent. Of the latter a considerable number have already found a place in many recent English text-books. The figures given of the minute structure of bone-marrow, germinal tubules, the spleen, hairs and hair follicles, and the mammary gland are obviously most accurate representations. The plate of a cell-ball from the glomus caroticum of man is so good that it is a matter for regret that there are no figures of such organs as the pituitary and pineal bodies. The section which deals with muscular tissue, though differing widely in its description from that adopted in most English works, treats the subject with great clearness, and attention is drawn to the histological appearances which indicate that the development of muscle fibres continues throughout the life of the individual. This tissue is to be

regarded as in a perpetual state of transition, the destruction and compensating reproduction of its elements going on hand in hand. The continuous loss of substance is replaced by new elements or myoblasts which are developed from free sarcoplasm which is characterised by rapid growth and increase in the number of its nuclei.

The description and illustration of the liver leave nothing to be desired. The figures of the bile capillaries displayed by the method introduced by Kopsch and the reticulum (Gitterfasern) of connective tissue between individual cells which Kupffer has demonstrated by a special gold-chloride method are exceedingly good and give a knowledge of the minute anatomy of the liver which is quite up to date.

The section which deals with the spinal cord and brain, together with the technique concerned in the demonstration of the histology of the central nervous system, is, in our opinion, not quite equal to the rest of the volume. Apart from the methods the whole subject occupies only about 14 pages, and of these three are occupied by full-page illustrations. In a text-book which is in many respects the best that has been written a somewhat fuller amount of information might have been given. The English student will in particular feel the want of figures of the various regions of the medulla, and if a good description of the variations in histological structure exhibited by various regions of the cerebral cortex and hippocampus had been supplied a real want would have been met, as this important information is omitted in most English text-books. In the technique Stroebe's beautiful aniline blue method and Kultschitzy's hæmatoxylin method might have been included as they are so good and trustworthy. Pal's method as given in the text is by no means the best of the various modifications of the one originally devised by Weigert. The omission of Marchi's method may possibly be defended on the ground that its use is purely pathological, but Marchi's fluid is employed in the methods of both normal and abnormal histology. It is undoubtedly difficult to include in one volume with descriptive histology an exact and detailed account of methods: these alone would require a volume. Historical accounts of such methods as Golgi's are out of place in a text-book of human histology. A few selected methods, the result of actual experience, are the ones required in a book of this kind. It is for the descriptive matter, and especially for the excellent illustrations, that the work will be useful, and as a thoroughly trustworthy and accurate account of human histology this text-book, which deservedly possesses a great popularity in Germany, may be warmly recommended to the attention of students in this country.

Transactions of the Ophthalmological Society of the United Kingdom. Vol. XX. Session 1899–1900. London: J. & A. Churchill. 1900. Pp. 338. Price 12*s.* 6*d.*, or subscription to the Society, which includes the volume, £1 1*s.* annually.

THIS volume opens with a short introductory address by Mr. G. Anderson Critchett, in which he reviews the methods that have been employed for the extraction of cataract during the last century and a half and dwells upon the improvements that have been made. The address is succeeded by the Bowman Lecture which was delivered on June 15th, 1900, by Mr. R. Marcus Gunn, who took for his subject "Visual Sensation." The effects of light on chlorophyll granules and on pigment cells were described, with the structure of the retinal elements as given by the most recent inquirers, and the general physiology of vision was discussed. The "Reports" follow Mr. Gunn's lecture; the subjects are arranged topographically, the diseases of the eyelids occupying the first place, then in succession come those of the conjunctiva, cornea, iris, retina, and choroid; intra-ocular tumours are next considered and finally the diseases of the orbit, congenital abnormalities, and injuries and operations.

It is impossible to notice the numerous individual cases that appear in this volume, many of which are of considerable value, but we briefly refer to one or two of them. Mr. W. T. Holmes Spicer describes a case of spring catarrh and gives illustrations of the appearances presented by sections of the mucous membrane of the conjunctiva under high powers of the microscope. The sections exhibit some thickening of the epithelium which in places dips into the substance of the tissue beneath in the form of finger-like projections which, when cut across, give the appearance of nests of cells. Mr. Arnold Lawson brought under the notice of the society a rare case which is here fully reported, of a cicatrix horn growing from the cornea. Mr. Treacher Collins suggested that the pathology of this condition was that there had been originally a perforating ulcer of the cornea leading to exposure and inflammation of the iris, which was followed by the formation of a mass of granulation tissue developing into a pseudo-cornea. This becoming prominent, dry, and scaly constituted the horn. Mr. John Griffith has an article on Iritis as a Sequel to Gonorrhœa. The intervals between the occurrence of the two diseases are very considerable—in one case 15, in another 12, years—and corroborative evidence seems to be required. Three cases of Ophthalmitis are recorded by Dr. Percy Flemming occurring in children with pseudo-glioma; one resulted in recovery and two proved fatal from meningitis. Dr. Flemming regards the meningitis and the ophthalmitis that proceeded concurrently in these cases as the result of a pyæmic or septicæmic condition. He thinks middle-ear suppuration to be a likely source of the pyæmic process in some cases and recommends that the ears should be examined in all cases of ophthalmitis and that both tympanic membranes should be punctured even if they appear to be healthy. Interesting accounts are given of various intra-ocular growths by Mr. Work Dodd, Mr. J. Herbert Fisher, and Dr. Charles R. Box. Various interesting cases of changes in the fundus oculi are recorded, especially a series reported by Dr. F. Menteath Ogilvie of concussion injuries of the eye, one of the characteristic features of which is a hole at the macula. Dr. Ogilvie has collected 15 of such cases. The holes in general have a very sharply-defined edge, though radiations may proceed from it. As a rule there is a well-marked central scotoma, but the intensity of this varies. The last article which we shall mention is one by Dr. Walter Edmunds on experimental exophthalmos and enophthalmos in which the effects of the ablation of the thyroid body are well given. The volume contains the accounts of many interesting cases and is enriched with 14 plates, many of which are coloured.

This volume of the Transactions contains an index of volumes XI.–XX. inclusive, which is very complete and will prove useful to all who have occasion to refer to the "Reports." A list of the additions to the library since November, 1900, also accompanies the volume.

L'Avortement. By Professor P. BROUARDEL. With 15 Figures in the Text. Paris: J. B. Baillière et Fils. 1901. 8vo, pp. viii.–376. Price 7 fr. 50 c.

THE occurrence of natural abortion is so frequent and the practice of procuring criminal abortion is spreading to such an extent at the present day that the whole question is one of great interest to those practising obstetric medicine both from the medical and the medico-legal point of view. The distinguished position and the great experience of the author of this work render it one of much value.

In a historical review Professor Brouardel shows that

amongst primitive peoples there existed the most complete indifference towards the preservation or destruction of the products of conception. Aristotle and Socrates both thought the production of abortion a perfectly justifiable measure, and Hippocrates was the first to state that he would neither countenance nor carry out such a procedure. That it was frequently practised in his day is shown by the long list which he gives of the complications that may ensue.

After considering the history of the subject, the author gives some very interesting facts as to the period of pregnancy at which abortion is most commonly procured. He also points out that at the present time there can be no doubt but that large numbers of so-called midwives in Paris practise as abortion-mongers. The number of such women is too large to allow of their making a livelihood by legitimate practice. In considering the etiology of natural abortion a great deal of information is given as to the action of various metallic and organic poisons upon the uterus. The various procedures that may be employed for the production of criminal abortion are described under the following heads. 1. The administration of abortifacient substances. 2. Various manipulations that may be carried out either upon the body, such as massage or forcible compression of the abdomen, or direct manipulations upon the vagina, the cervix, and the body of the uterus. The plants that are regarded as having a direct abortifacient effect upon the uterus are as follows: yew, savin, juniper, arbor vitæ, tansy, rue, and ergot. The question as to whether it is possible for a woman herself to introduce various substances directly into the uterus is answered in the affirmative. The immediate and remote effects of abortion are dealt with, including the possibility of sudden death and the occurrence of septic infection. The last two sections deal with some most important medico-legal questions—the examination of the patient, the examination of various substances expelled from the uterus, the performance of necropsies, and the recognition of the signs of recent abortion.

In the last section the author gives a number of examples of the kind of questions that the medical expert in such a case may be called upon to answer.

In an appendix the details of a number of important cases are cited, illustrating various points in such cases, and containing a number of very interesting medico-legal reports. The book is well worthy of its distinguished author and will be of assistance not only to medical jurists but also to anyone who may have to give evidence in one of these very serious and often very difficult cases.

Report on the Water-supply of the County of Essex. By JOHN C. THRESH, D.Sc. Lond., M.D. Vict., D.P.H. Camb., &c. Chelmsford: Meggy, Thompson, and Co. Pp. 180. Price 3*s.* 6*d.*; in cloth, 5*s.*

THIS little book gives an excellent description of the water-supply of Essex. It deals briefly with the geological formation of the county, with records of the average amount of rainfall, and gives many analyses of the water obtained from the subsoil and from deep wells. There are no less than 11 maps showing the river basins, the undulations of the chalk, and the distribution of the water mains in places which have a public supply. The most interesting map is one which gives the situation of the deep wells in the chalk and which marks the distribution of those which yield what Dr. Thresh calls "soda-water"—a beverage which must not be confounded with the aerated water popularly known by that name. The author disarms criticism by saying that the book was hurriedly prepared for the use of the Essex County Council, and he invites corrections and suggestions for alterations. In the compilation of such a report the author must necessarily depend to a very large extent on the information which is supplied to him, but in the case of a quotation it is always best that the passage should be distinctly marked in the usual manner. In Dr. Thresh's book this is not always done; for example, on p. 88 the reader is struck by a footnote referring to the text above to the effect that "These opinions are certainly curious and imply a very limited knowledge," &c. On looking back two pages it is evident that the author of the curious opinion is either an officer of the Local Government Board or Mr. Sasse, the borough surveyor of Chelmsford. For the casual reader a good index is desirable; for the busy man using a work for reference an index is almost indispensable. We hope to see one in the next edition of this book.

Dr. Thresh's report should be read by all county medical officers of health, and all County Councils in the country should try to obtain such a report in the case of the districts which they represent.

LIBRARY TABLE.

Medical and Surgical Nursing. Edited by H. J. O'BRIEN, M.D. New York and London: G. P. Putnam's Sons. 1900. Pp. 278. Price 6*s.*—This manual for nurses is the united work of several authors, mostly connected with the St. Joseph's Hospital Training School for Nurses, St. Paul, U.S.A. The contents consist of 15 chapters, of which the most important are those dealing with asepsis and antisepsis, general nursing, and cooking for the sick. The latter is, perhaps, the most valuable contribution of the series; it advocates precision and claims that cooking is an exact science and "cannot be done for the sick by guesswork without great risk." This plea for accuracy in the feeding of the sick is in marked contrast to a slovenly article on Infant and Child. In this latter chapter accuracy is sneered at, nurses are recommended to allow infants to consume as much food as they fancy, and the troubles of teething are regarded as myths. "They are due to improper methods of feeding," and such troubles would be many, we fancy, among infants brought up on the methods advocated. With the exception of three or four articles it is difficult to see what useful object the contents of this book can subserve in the training of nurses. Many better works on the same subject have been published both in England and in America; the price, too, is almost prohibitive for a nurse, and considering that the book is small and contains no illustrations it is altogether too expensive.

Transactions of the American Orthopædic Association. Vol. XIII. 1900. Philadelphia: published by the Association. Pp. 356.—This volume contains in all 36 papers, including the Presidential address delivered by Dr. H. M. Sherman of San Francisco. Dr. Sherman's address gives details of the results of an inquiry into how far orthopædic surgery is taught as a special subject in American medical schools. Out of 76 colleges only 38 mentioned the subject as being taught, while 60 "specialised" in gynæcology, 59 in pediatrics, and 58 in neurology. Of the various papers perhaps the most notable are those of Dr. A. M. Phelps upon the Treatment of Abscesses of the Joints with Glass Speculum, Drainage, and Pure Carbolic Acid, with a report of 70 cases. Dr. Phelps opens the abscess cavity, removes diseased tissue, and fills the cavity with pure carbolic acid which is allowed to remain for one minute. The acid is then washed away with alcohol which is in turn washed away with a 2 per cent. solution of carbolic acid. A large glass drainage-tube is then placed in the cavity, which tube is packed with gauze or some similar material. The tube is of as large a diameter as the cavity will take. Patients thus treated were discharged from hospital within three weeks from the date of the operation. Another interesting paper is that by Dr. R. W. Lovett of Boston upon the Mechanics of Lateral Curvature of the Spine. By means of using cadavers and living models flexion simultaneously forwards

and laterally was shown to be accompanied by rotation of the bodies of the vertebræ. In forward and lateral flexion the bodies of the vertebræ, both in the cadaver and the model, turned towards the convexity and the spines towards the concavity. In backward flexion with lateral flexion just the reverse occurred. The chief conclusion of the paper was, therefore, that to correct the torsion observed in scoliosis the spine should be extended and that side bendings should be taken from extended positions.

The Law of Joint-Stock Companies Acts, 1862–1900. By JAMES WALTER SMITH, LL D. London: Effingham Wilson. 1901. Pp. 212. Price 2*s.* net.—This volume, which is one of Mr. Wilson's legal handy books, gives a great deal of information in a comparatively small space about the law relating to joint-stock companies. Directions for forming a company are also given. A feature of the book is the index, which is very full.

La Surdi-Mutité: Étude Médical. Par ÉTIENNE SAINT-HILAIRE. (*Deaf-Mutism: A Medical Study.* By ÉTIENNE SAINT-HILAIRE.) Paris: Maloine. 1900. Pp. 354.—Dr. Saint-Hilaire has been in charge of the Seine Department Institute for Deaf Mutes since its foundation in the year 1893 and has made the very best use of the unequalled opportunity of studying this affliction which has been thus placed within his reach. The result is the work that he has now presented to the profession. Dr. Saint-Hilaire's is the first monograph on the subject in French and it is at the present time the most complete work on the subject extant, the recent works of Holger Mygind and Kerr Love as well as no fewer than 670 works and papers having been made use of in the compilation of the statistical and other portions of the book. The first chapter deals with Definition and Classification, and the second with the Distribution of deaf mutes, not alone in France, but also in the whole world, the distribution in France naturally being most minute. The third chapter, under the heading Pathogénie, deals first with Heredity, this being considered under the subdivisions of similar and dissimilar heredity. By similar is meant the transmission of the disorder from the parents, grandparents, or collateral branches, dissimilar being the existence of deaf-mutism in the progeny of the subjects of other nervous disorders, "La maladie nerveuse qui se transmet se transforme a dit Legrand du Saulle; c'est ainsi qu'on voit se succéder, dans les mêmes familles, la manie, &c." (p. 56). Upon the consideration of heredity follows the consideration of consanguinity, of causes of degeneration and of acquired deaf-mutism. The fourth chapter consists of a thorough description of the Pathology and Pathological Anatomy of Deaf-mutism; and the last three chapters deal with Symptomology, Diagnosis and Prognosis, and Prophylaxis and Treatment respectively. Dr. Saint-Hilaire has exercised the greatest care in the production of his book and it will amply repay perusal and will form a valuable addition to any medical library. In particular the chapter on Prognosis and Treatment will be of the greatest assistance to all who have to treat or to advise in the treatment of this most unfortunate class of humanity.

The Nursing Profession: How and Where to Train. By Sir HENRY BURDETT, K.C.B. London: The Scientific Press, Limited. 1901. Pp. 390. Price 2*s.* net.—This is the third year of publication of Sir Henry Burdett's useful book of information for nurses and would-be nurses. The introductory chapters contain an account of the general requirements of the schools and an excellent abstract of the laws which affect nurses in so far as their duties are concerned. The remainder of the book is taken up with details of hospitals and other training institutions, of establishments where nurses are employed but not trained, of Government and other appointments, together with a list of colonial, foreign, and American hospitals and nursing institutions. A list of provident funds, examining bodies, and associations for the benefit of nurses, is also given.

JOURNALS AND MAGAZINES.

THE *Medical Magazine* for March contains an article upon Duodenal Ulceration by Dr. H. W. Syers which sums up very well the difficulties of diagnosing the generally obscure cases of this affection. Dr. Syers points out that, as is well known, the class of patient usually the subject of duodenal ulceration is quite different from that of the anæmic woman in whom gastric ulcer most commonly occurs. Middle-aged men are the subjects of duodenal ulcer and commonly—a point which Dr. Syers does not mention—they are men who take alcohol too freely. Dr. Syers lays great stress upon melæna as the most important symptom. As regards the etiology of the affection we cannot entirely agree with Dr. Syers's opinion that this will be only thoroughly understood when the anatomical distribution of the small vessels in the intestinal mucous membrane has been worked out. There is more chemistry in the matter than this, we suspect. Dr. Syers believes that Cardinal Wolsey died from duodenal ulceration. Dr. R. Tanner Hewlett contributes a comprehensive paper on Mediterranean or Malta fever. He gives typical charts of the long undulating pyrexia and a photograph of cover-glass preparations of the micrococcus melitensis. The Prison Act of 1898 is discussed by Mr. A. G. Whiteway who raises the question of paying greater attention to the previous history and the present mental and physical conditions of culprits. Greater facilities should be given, he holds, for training medical men in the necessary work, and medical students should be instructed at prison infirmaries.

The *Practitioner* deals mainly this month with Malaria and those who have lately added to our knowledge of the disease. Just as more popular magazines are wont to heighten the interest of a forthcoming serial by giving beforehand incidents concerning the life and habits of its author, so the *Practitioner* preludes the articles on malaria with short biographical notices of some of the chief workers in this field. Then follow articles by Dr. Patrick Manson, Mr. D. C. Rees, Dr. Louis W. Sambon, Mr. E. E. Austen, and Dr. Tanner Hewlett. In "The Month" the editor comments on Mr. Burdett-Coutts's criticism of the Royal Commission on medical affairs in South Africa.

The Journal of Physiology. Edited by Sir MICHAEL FOSTER, K.C.B., M.D. Cantab., F.R.S., and J. N. LANGLEY, Sc.D., F.R.S. Vol. XXVI., Nos. 3 and 4. London: C. J. Clay and Sons. Feb. 28th, 1901. Pp. 165. Price 10*s.*—The articles contained in these numbers of the *Journal of Physiology* are: 1. The Movements and Innervation of the Small Intestine, by Mr. W. M. Bayliss and Dr. E. H. Starling. The authors in a previous paper had taken for the subject of their experiments the dog; in the present one their researches were made upon the rabbit and upon the cat. 11 woodcuts giving tracings accompany the text. 2. On the Effects of Venous Obstruction on the Secretion of Urine, by D. H. de Souza. This observer finds that either partial or complete obstruction of the renal vein always causes a diminution or cessation of the urinary secretion, and further that the flow of urine from the kidney is (other things being equal) directly proportional to the velocity of the blood-flow through the kidney. He does not consider that the function of the glomeruli has been quite satisfactorily determined. 3. On Metabolism in Forced Feeding, by Dr. W. Hale White and Dr. E. I. Spriggs, with three figures in the text. 4. On a Method of Estimating the Interference with the Hepatic Metabolism Produced by Drugs, by Dr. D. Noel White and Dr. J. Eason. 5. On the Origin from the Spinal Cord of the

Vaso-dilator Fibres of the Hind Limb and on the Nature of these Fibres, by Mr. W. M. Bayliss. The author shows that there are vaso-dilator fibres in the posterior roots of the fifth, sixth, and seventh lumbar, and in the first sacral, nerves. They pass directly into the lumbo-sacral nerves. Their trophic centres are in the ganglia of the posterior roots. There are 17 figures in the text. 6. An Attempt to Estimate Fatigue of the Cerebral Cortex when caused by Electrical Excitation, by Dr. A. G. Levy, with 10 figures in the text. The plan adopted in this research was to anæsthetise the animal, which was usually a cat, though occasionally a dog, and to stimulate the cortex with a current of electricity; the length of time during which the muscles affected by such stimulation continued to contract and the vigour of their contraction were then determined. 7. The Physiological Effects of extracts of Nervous Tissues, by Dr. W. D. Halliburton, with 21 figures in the text. The injection of brain and other nerve extracts produces a fall of blood-pressure in cats which the author attributes to the presence of cholin. 8. The Composition and Action of Orchitic Extracts, by Dr. Walter E. Dixon, with 25 figures in the text. These extracts lower the blood-pressure. 9. On the Action of Iodine and Iodides, chiefly with regard to the Muscles of the Frog, by Dr. Ralph Stockman and Dr. Francis J. Charteris. 10. On the Nature of the Sugar Present in Normal Blood, Urine, and Muscle, by Dr. F. W. Pavy and Mr. R. L. Siau. The part concludes with the Proceedings of the Physiological Society.

The Journal of Physiology. Edited by Sir MICHAEL FOSTER, K.C.B., M.D. Cantab., F.R.S., and J. N. LANGLEY, Sc.D., F.R.S. Index to Volumes I. to XXV. inclusive. London: C. J. Clay and Sons. February, 1901. Pp. 192. Price 15*s*.—This is a much-needed and excellently executed volume. In looking up authorities and the labours of previous observers on any given subject nothing is more wearisome than to have to look through the indices of numerous volumes, especially when, as in the case of the *Journal of Physiology*, there is only a table of contents and a list of authors' names prefixed to each volume. The scheme here adopted is sufficiently comprehensive and no difficulty can arise if either the name of the author or the subject of inquiry is known in ascertaining when and by whom any specific item of work was done, whilst if the investigator only wishes to ascertain what original work has been carried out in almost any department of physiological knowledge during the last quarter of a century in this country he still has the means at his disposal in the pages of this index. It is conveniently divided into three parts. In one the names of the authors are arranged in alphabetical order, and a short title of the several papers written by each author is appended with the date and the volume and page of the journal in which they are to be found. In a second part, distinguished by a different-coloured paper, the contents of each volume are given, together with the full title of the articles; cross references enable the date of publication to be readily seen. In a third part or index proper the contents of the 25 volumes are arranged in accordance with the subjects of the several articles. This part is the one that will prove most generally useful. The scheme that has been adopted was devised by Professor J. N. Langley who is responsible for its execution, but due praise must be given to Miss L. J. Naylor, to whom has fallen the task of corresponding with authors (who have in many instances given *précis* of their papers) and of copying the slips. A glance through the headings of some of the more important subjects will show that the preparation of the index must have involved much time, care, and consideration, and it really affords an excellent idea of the recent work that has been done in that particular direction. Thus under the heading "Heart" there are references to no less than 112 articles, under the heading "Kidney and Urine" to upwards of 60, and under that of "Brain and Spinal Cord" to about 80. The task of the searcher is lightened by the references being arranged according to certain subdivisions which are given immediately under the heading. Thus under the heading "Heart" the succeeding references are disposed under the subdivisions: (*a*) Electrical Phenomena; (*b*) Mammals (*a*) Sounds, (*β*) Nerves and their Action, (*γ*) General; (*c*) Birds and Fish; (*d*) Reptiles; (*e*) Amphibia (*a*) Action of Chemical Substances, Circulating Fluids, (*β*) General; (*f*) Invertebrates; (*g*) Cardiac Muscle. In conclusion, we may remark that the work is indispensable to those who possess the several volumes of the *Journal of Physiology*, and will be found extremely useful by all who wish to have a ready means of following recent advances in physiological knowledge.

Man: a Monthly Journal of Anthropological Science. Published under the direction of the Anthropological Institute of Great Britain and Ireland.—The March number of this journal contains among its original articles notes from Australia, Madras, New Zealand, Lord Howe's Island, and the New Hebrides. Mr. Henry Balfour describes and figures a peculiar form of beaked boomerang in which the beak is not, as is usual, continuous in structure with the shaft but is formed of a separate piece of wood fixed to the shaft with gum. Mr. F. Fawcett gives some interesting notes upon the Dimbs of Jeypore, an Outcaste Jungle People of the Vizagapatam District of the Madras Presidency. From New Zealand comes a curious note from Mr. J. Edge-Partington upon a Matuatonga or Sacred Image of the Maori People. We are glad to see that those who are not members of the Anthropological Institute can obtain this journal for the sum of 10*s*. per annum, for the subjects therein dealt with are of especial interest in these modern days when old customs and nations are fast passing away.

New Inventions.

AN ELECTRICALLY-LIGHTED BRUNTON'S AURISCOPE.

THIS adaptation has been made for me and at my suggestion by Messrs. Arnold and Sons, Smithfield, London, E.C. It will be found useful for examining the tympana and ossicles without the necessity, always troublesome alike to medical man and patient, of adjusting the auriscope and posing the patient's head into such a position that the daylight or lamp-light shall be fully thrown into the reflecting trumpet of the instruments. Moreover, it is an adaptation to a cheap form of a long-lasting, dry cell battery, with no acid to spill or corrode, that has lately been put upon the market and has found a large sale among my *confrères*. Fig. 1 shows a silver-plated Brunton's auriscope (O) with its reflecting trumpet (T). Fig. 2 shows the lamp fixed by two or three turns of a screw to its wooden holder (H) and connected to the battery (B) by means of silk-covered insulated wires (W) disappearing into the cells through the hole X, (Figs. 1 and 2). My adaptation consists of a flat ebonite disc (D E), carrying a small electric lamp similar to, and of the same power as, the before-mentioned one, or as described below; the latter may be used for both holder and auriscope. The disc carrying its lamp is easily and quickly adjustable by means of two claws and a single screw (S) to the rim of the reflecting trumpet of any ordinary-sized Brunton's auriscope, and is shown in position by shaded lines in Fig. 1. This renders the instrument self-lighted. To switch on the electric light press down the push (P). As the life of the dry cells when in use is limited, like that of the lamp itself, to so many hours—viz., of continual light—the push is important from an economical point of view, so that neither battery nor lamp (but especially the former, having the shorter comparative term of existence) may be used for longer than is actually necessary. The push, indeed need not be pressed down until the speculum of the auriscope (S P, Fig. 1) is in

the meatus auditorius, and it can be immediately released when the inspection of the tympanum is over. For those who already possess one of the batteries in question with its holder, lamp, and wires, the holder can by my arrangement be easily and quickly detached from the battery and the ebonite disc carrying its own lamp as easily and quickly substituted for it. The connecting arrangement is shown at C, Fig. 2, and is such that the ends of the wire from the battery can never touch each other, causing the battery to

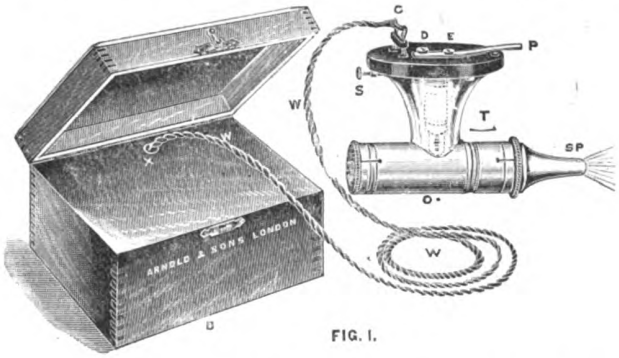

FIG. 1.

expend itself when not in use and so to be useless just at the moment when required—a vexatious occurrence which those who have used electric batteries may probably at one time or the other have experienced. But for greater convenience, although at an extra but small cost for the wires, it will be found better to have a battery with its own wires connected up to the disc. This connexion is made by a similar method to that already described and is as easily and quickly detachable from it. It is shown at C (Fig. 1) I have had the wires made about 30 inches long so that the auriscope may

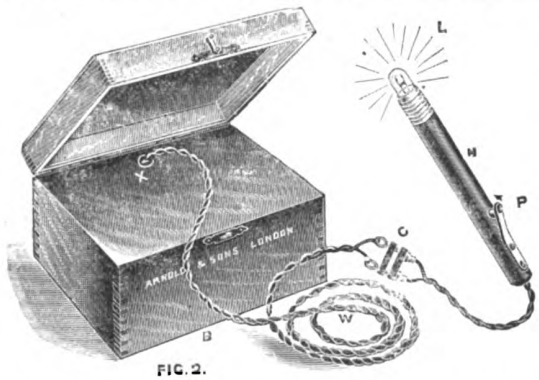

FIG. 2.

easily reach the ear of the patient when the battery is placed on a table close at hand. If it be thought desirable to have only one lamp for both holder and auriscope the lamp can be unscrewed from its holder and screwed into the auriscope disc, a similar-sized socket being on both holder and disc, and in each case two or three turns of a screw will hold the lamp in its place and connect it up at the same time. The lamps are, however, supplied separate very cheaply. The battery, disc, and lamp, without holder, can also be obtained from Messrs. Arnold and Sons.

Tottenham, N. GEORGE H. VOS, M.B. Cantab.

SMALL-POX AND VACCINATION IN PARIS.

(FROM A CORRESPONDENT.)

IN *La Presse Médicale* of Feb. 23rd, Dr. Roger, who has for some years had charge of the Isolation Hospital wards at Aubervilliers, publishes an interesting article explaining why the present epidemic of small-pox is not yet over. In this English readers will find much to reconcile them to the means taken in England to oppose such an epidemic as compared with those in France, where science and her dictates are supposed to reign supreme. It will be seen from this article that it is doubtful if vaccination is more thorough in France than in England, and that it is certain that the isolation practised in the former country is much more imperfect and unsatisfactory than in the latter. Dr. Roger openly states that the foreigners who visited his wards in this so-called "temporary" isolation hospital—it is 15 years since its construction—declared that they had never seen such a defective organisation, and he protests against the necessity of receiving in such wards patients who ought to get well, who are generally youthful and of good constitution, and valuable members of the State.

In 1898 there were only two cases of small-pox in Paris, and from June of that year to Dec. 25th, 1899—a period of 18 months—there was not a single case. In January, 1900, eight cases were received into the isolation hospital, and the year 1900 saw over 900 entries. Dr. Roger points out that vaccination and revaccination have been incomplete either from negligence or from prejudice or because of previous unsuccessful vaccination. Facts have convinced him that vaccination confers but a temporary immunity and that it may sometimes only guarantee that the attack shall be a slight one. Thus one of his male nurses who had been well vaccinated took small-pox a year later. A great number of cases had also been unsuccessfully vaccinated one or two months before and Dr. Roger therefore recommends vaccination every 10 years, but if an epidemic should break out he insists upon immediate and universal re-vaccination.

Vaccination is only compulsory in France in the sense that a certificate is required upon many occasions—for instance, during military service, on entrance into schools, and in administrations of public services and offices. Though carried out on a large scale, therefore, it is not obligatory or universal and the isolation devised is highly imperfect and illusory. Until recently the wooden wards were inclosed only by a low railing which the patients easily scaled on their way to a neighbouring tavern or through which the friends of the patients conversed and handed parcels, &c. During the last three months the palings have been improved and two policemen guarantee night and day the isolation of the small-pox cases. It is almost incredible that the patients are allowed to write letters to their friends outside—letters that it has been found impossible to disinfect—but the law allows it. Hardly less credible is the fact that patients need not remain in hospital till the scales are all fallen; on the contrary, many leave as soon as they feel well enough or as soon as the pustules no longer make them objects of disgust. Dr. Roger states that almost all the female patients leave in from 20 to 25 days. What wonder that the epidemic persists when such patients return home shedding their infected epithelium in their dwellings, in the streets, in the cars and omnibuses, and until recently actually in cabs which they were allowed to call. For the last three months, it is true, a patient who insists upon leaving before he is cured must do so in an ambulance. This is the extreme limit of the power of the law. In one of Dr. Roger's cases the kindly *concierge* nursed a patient in the garret until she finally succeeded in giving the disease to most of the other lodgers. In another case the *concierge* himself took the disease and remained in his *loge* until some weeks later his wife also was attacked. The man then resumed his duties, carrying the letters, cleaning the staircase, receiving the visitors, and scattering his epithelial scales broadcast. One *concierge* refused to admit the accuracy of Dr. Roger's diagnosis and returned home to take care of the eruption which, she said, came "from the blood." It is certain that some cases are undiagnosed. Many medical men in practice have never seen a case of small-pox, for the happy reason that as it exists but at intervals they only know it theoretically. Courses of instruction in the specific fevers should undoubtedly be compulsory for students of medicine.

The lamentable state of things, therefore, in Paris as elsewhere, is that we know how to suppress small-pox, but we do not put our knowledge into effect. Compulsory vaccination and re-vaccination and an effective isolation of the infected—*ibi salus est*.

THE LANCET.

LONDON: SATURDAY, MARCH 23, 1901.

The Remuneration of Medical Witnesses.

THE attitude of the Home Office towards the question of the fees to medical witnesses in criminal courts and before coroners continues to be one of indifference veiled under more or less polite platitudes. In replying to a question on the subject put to him by Mr. W. F. LAWRENCE, M.P., the other day, Mr. RITCHIE said: "I do not think the fees of medical witnesses can be touched without dealing at the same time with those of other witnesses, and this I am not prepared to do in view of the largely increased cost of prosecutions which might be the result of such a revision of the present scale." Mr. RITCHIE'S predecessor, Sir MATTHEW WHITE RIDLEY, frankly refused on two occasions to receive deputations on the subject, and Sir MATTHEW WHITE RIDLEY'S predecessor, Mr. ASQUITH, in answering a deputation in 1895, said, among other things: "The same remark [i.e., that the remuneration of medical witnesses is inadequate] might be applied with a greater or less degree of truth to every item in the scale as applied to a professional witness. If it were true that it was a condition of the medical profession to attend courts in a sense which could not be said of other witnesses, then the logical conclusion to his mind was not that this scale of remuneration should be altered," but, he went on to suggest, that special arrangements should be made between police surgeons and watch committees.

In applying the opprobrious term "platitudes" to such replies as these we venture to suggest that they are not the result of the individual reflections of the gentlemen who made them, but are rather in the nature of stock objections filed for the use of Home Secretaries by permanent officials unwilling to sanction the amendment of a long-standing grievance. Mr. RITCHIE says that he does not think the fees of medical witnesses can be touched without dealing with those of other witnesses, while Mr. ASQUITH clearly did not see, or refused to admit, that it was a condition of the medical profession to attend courts in a sense in which other witnesses could not be said to attend them. Mr. RITCHIE went further by offering speculative conjectures as to the large increase of costs if the fees of other witnesses as well as of members of the medical profession were augmented. If by other witnesses Mr. RITCHIE meant other professional witnesses, following the line of argument adopted by Mr. ASQUITH, we disagree with him. It is, however, a matter in which a return could easily be made that would put the point beyond question, and we should like to see by how much per cent. the average cost of prosecutions in England and Wales would be increased by the adoption of a similar scale to that prevailing in Scotland or in Ireland. English Home Secretaries ignore the fact that medical witnesses are remunerated on far higher scales both in Scotland and in Ireland without apparently undue burdens being cast upon the funds made liable. With regard to the theory, held apparently both by Mr. RITCHIE and by Mr. ASQUITH, that medical men are not members of a profession peculiarly situated as regards giving evidence we do not feel disposed to discuss at length what most of our readers will agree is obvious. We only point out that in the prosecution of nearly all crimes of violence, and of nearly all sexual crimes, medical witnesses are called and that these are not always police surgeons. They are frequently medical men who are witnesses because they could not, without incurring the charge of inhumanity, refuse to render aid to persons injured for whom their aid was sought, although to render it meant to incur the pecuniary loss involved in attending the criminal courts.

We would further point out that the attendance of medical witnesses is a matter of which the statistical returns are obtainable and that the statistics would certainly show that medical witnesses attend courts as witnesses of no other profession do, while we may ask what class of witnesses there is that is now urging that its members should be treated differently, or what class of witnesses, in the opinion of the Home Office, would combine to protest if the claims of medical witnesses were dealt with separately. The fact that the British Medical Association and the United Kingdom Police Surgeons' Association have formed a joint committee to approach the Home Office in the matter is not required to prove that the scale of remuneration for medical witnesses is insufficient. The Home Secretaries whom we have quoted do not deny that. The fact that these organisations have formed such a committee for such a purpose, in the absence of other organisations representing other professions, is evidence that the insufficiency of remuneration for professional witnesses affects medical men in a peculiar degree. We are thus led to the conclusion that the grievances of medical witnesses could be remedied without injustice to others, and that Mr. RITCHIE'S statement of opinion to the contrary would not be easy to support by any logical argument.

Alcoholism and Insanity in Scotland.

DR. T. S. CLOUSTON, the medical superintendent of the Royal Edinburgh Asylum, Morningside, in his recent annual report to the Edinburgh corporation has included some statistics on an increase in alcoholic insanity in Scotland which have somewhat startled Scotland. The figures constitute another valuable contribution from our profession to the solid arguments on which any successful effort to procure effective legislation for promoting the sobriety of the nation must be based. There have been many differences of opinion as to the exact rôle of alcohol in pathology, even in regard to Scotland, where such a large field exists for clinical and post-mortem study of the facts. To judge from the extent to which whisky, the almost universal Scotch drink, has lately been introduced into England, the observer might think that

it was as innocent as new milk. And certainly some forms of disease which might be looked for from its use in Scotland are comparatively rare—cirrhosis, for example, and to some extent gout and alcoholic neuritis. We really want from the pathologists of Scotland a good account of the pathological effects of whisky as a national drink. On one point there seems little doubt—that is, its injurious effect on the brain. There is a general consensus of opinion on this point.

Our immediate purpose is to direct attention to Dr. CLOUSTON'S report on the rapid and striking increase during 1900 of insanity among the working classes of Scotland, particularly in Edinburgh, and to his conviction that it was due to the freer use of alcohol as a part of the high prosperity of the year. Dr. CLOUSTON says that "he never had experience of anything approaching this before and that he would fail in his duty if, seeing more of the terrible effects of excessive alcohol drinking in destroying human reason and self-control than almost anyone else in Scotland, he did not strongly draw attention to a fact so disgraceful to them as a community." We should equally fail in our duty if we did not note Dr. CLOUSTON'S facts. Practically they amount to this. The year was a record one for admissions. The increase was entirely in rate-paid cases, the numbers of which prevented Dr. CLOUSTON from admitting private patients at a low rate of board, which, he says, constitutes a great hardship to the friends of patients whose means are small—a class, we may add, entitled to the greatest sympathy in every community. Of course there are not wanting in Scotland able apologists for alcohol who are not willing to admit Dr. CLOUSTON'S conclusions. It is easy to suggest flaws in the chain of evidence that associates this startling increase of pauper insanity with an increase in the consumption of alcohol. The complex causation of insanity in any individual case can always be insisted on. And it must be admitted that prosperity was not the only note of the year 1900. It was a year of war and of much adversity in war in which Scotland was deeply and not dishonourably concerned. But no criticism of this sort will seriously shake the effect of the report of Dr. CLOUSTON, who has taken all these other possible causes into consideration, and who has come deliberately to the conclusion that in a fourth of his cases in excess of the average the determining cause was alcohol. The conclusion coincides too closely with other medical evidence to be open seriously to doubt. There is but one consolatory fact in such a conclusion. The situation is discreditable to the intellect and the morals of religious and educated nations such as England and Scotland, but it is remediable, and removable to a very great extent, if the legislature will consent to give its help to social and political reformers.

The immediate cause of the overcrowding of the Royal Edinburgh Asylum during 1900 was the great rush of rate-paid cases. They numbered 400, or 20·5 per cent. over the average of the past five years. After descanting on the inconvenience of such an increase and considering the complex causation of it, Dr. CLOUSTON says that "he could not get over the conclusion that the excessive use of alcoholic stimulants during times of brisk trade and high wages had to a large extent been the cause of the undue amount of mental disease which they had been called on to treat last year, constituting about a quarter of the whole admissions in whom drink was assigned as either the sole or a contributory cause." As regards the admissions of men alone 81, or about one third, were alcoholics. Dr. CLOUSTON does not think seriously of the general increase of mental disease in Scotland, at least in the classes from which private patients come. In the 20 years ending 1899 the increase of such patients amounted to only 378, an increase of 16 patients a year, in a population of 4,200,000, whereas the rate-paid class of patients increased in the aggregate 2545, or at the rate of 124 a year. It is sad to have to notice that the greatest increase is in the northern and Highland counties where life is solitary. The increase of pauper insanity in the Highlands amounted to 17 per 100,000 inhabitants, in the rest of Scotland to 9½, and in Edinburgh to only 3. The blue books show that in Scotland, as elsewhere, the aged suffering from any brain failure are sent with increasing frequency to asylums, but it may be a matter of just pride to Scotchmen that they support their insane relations without letting them fall on the rates in twice the proportion of Englishmen, and in over three times that of Irishmen.

Dr. CLOUSTON does not preach voluntary teetotalism or legal prohibition or any impracticable doctrines. He simply aims at reducing the disease produced by alcohol, acting on the lines of Dr. SNOW and Sir JOHN SIMON when they pointed out that the causes of preventable disease lay in contaminated water. Insanity and general physical degeneration call as loudly for repression as does cholera. The nation was never more interested in ascertaining and removing the causes of such evils than it is to-day. The removal of preventable alcoholic disease is as much a duty of statesmen and politicians as it is of philanthropists, on whom some politicians would throw the whole work of dealing with this class of disease. The State has already acknowledged responsibility. The whole system of licensing laws is such an acknowledgment. A more recent one is a Bill contemplating the reform of the intemperate, to which measure Lord SALISBURY has just given his adherence. Surely our statesmen will not argue that they do all they can to stop the enlarging mortality from alcohol pointed out to them by the medical profession and the Registrar-General when they make ineffective efforts to reform habitual drunkards and leave untouched the laws which acilitate the creation of drunkards. The legislation in behalf of habitual drunkards is little better than a delusion. There are at least a score of preventive measures—apart altogether from the thorny question of compensation and the reduction in the number of public-houses—of urgent importance in regard to which public opinion is ripe for legislation. We venture to hope that Dr. CLOUSTON is a little too despairing of the prospects of receiving help from this Government. Mr. RITCHIE'S last speech is promising, and we hope that performance is meant. If the result does not meet public expectation we agree with Dr. CLOUSTON in thinking that a "big reckoning" may overtake the present administration when the cessation of war enables men to realise the destruction of life and morals which is going on insidiously among men, women, and children as a result of the present proportions of the drink traffic.

The Health of Board School Children.

IN an address, a copy of which we have received, delivered at the Durham College of Science and entitled "Health in the School," Dr. THOMAS OLIVER has raised many points of general interest and has made some suggestions of practical utility. The subject is most conveniently divisible into two principal sections—the hygiene of the school, the board school or the national school as the case may be, and the health of its inmates. Under the former heading attention is directed to the marked improvement in arrangement and construction which distinguishes the board schools of recent origin from those built on the passing of the Elementary Education Act in 1870. Exception is taken, however, to schools of this class in general in respect of certain obvious defects. These include a frequent insufficiency of playing-ground around the building and the absence of definite and well-considered method in the internal arrangements for heating and ventilation. Both of these latter necessities have been provided for with the diversity of plan which belongs to an experimental epoch and, according to Dr. OLIVER, without conspicuous success. He draws attention to the fact that while each inmate in a factory is entitled to 250 cubic feet of air space the Education Department is content with a minimum of 80 cubic feet. He further insists upon the importance of removing impure air as essential to the proper aeration of class-rooms—a point which he shows has received too little attention. For this purpose he prefers the system of extraction by a revolving fan to every other method. The ingress of air he considers is best arranged where gratings in the vicinity of hot-water pipes are made to act as inlets. No form of heating apparatus commends itself to his judgment so much as the system of warming by hot-water pipes. Closely connected with the ventilation is the cleansing of class-rooms. Mere dry sweeping is insufficient for this purpose, inasmuch as it usually does little more than raise dust without disposing of it. Some useful hints on this subject have not been omitted.

Passing on to the physical condition of the children attending the free elementary schools, Dr. OLIVER discusses at considerable length the disorders common among children reared in poor and insanitary homes—such as general weakness, adenoids, cretinism, tuberculous glandular troubles, and ophthalmia—and the means appropriate to their prevention and cure. Most significant are his observations on the effects of over-pressure and fatigue. His views on this subject are quite in accordance with those of his fellow-countrymen, medical and non-medical, who have given their attention to it. He quotes, moreover, the experience of a German authority, Dr. KEMSIES, who finds that among his pupils the best work is done during the early days of each week and the early hours of each day. Two hours' work at one time suffice to induce fatigue and should therefore, he maintains, be followed by an interval of recreation. Another constant result of overwork in school is defective eyesight. The fact has long been recognised, but sufficient attention has not been given to its real significance. Dr. OLIVER'S own statistics on this subject are highly instructive. They show a notable excess of deficiency among girls as compared with boys, and among senior as compared with junior children. In 16 schools examined in Newcastle the average percentage of boys affected was 4·2, that of girls 6·3. This defect he attributes, and probably with justice, to imperfect lighting, over-pressure, and the teaching of fine needlework at too early an age. German observations provide exactly similar data. In addition, COHN of Breslau noted a marked excess of myopia among children attending town schools over that among village school-children. Dr. FERDINANDS of Aberdeen made the same observation after examining upwards of 3000 pupils. The facts seem to be uncontrovertible. They show clearly that a certain proportion of children in elementary schools, for the most part children of poor parents, have myopic or otherwise defective sight, that this deficiency increases with the duration of school life, and that it is most noticeable in town schools where the pressure of work is known to be highest and where the general health conditions are far inferior to those in country schools. Where are we to look for a remedy? Dr. OLIVER is in favour of instituting inspection by an ophthalmic surgeon in the case of such defective children. He admits, however, a probable difficulty in inducing the Board of Education to sanction the outlay. We see no reason why teachers should not be incidentally useful in this way. They might easily be instructed to note generally any evident defects of hearing or vision or obvious and specified failures of health. This done, parents could be warned to seek medical advice. The primary responsibility in such a case is with the parent and we consider that it is most judicious not to deprive him of it but to encourage him to use it. Such an arrangement, however, does not touch the subject of work-pressure, and this certainly ought to be lightened wherever it can be. A shortening of hours is, perhaps, not necessary, and if not needed it is not desirable. A redistribution, however, might be advantageous. At present school work is so distributed that it drags on through the greater part of a day. We are not at all clear that the work would not be better done and the interests of health be better served if the long midday break were dispensed with, if the school hours were grouped together with short intervals of recreation, and if the work were finished by, say two o'clock in the afternoon.

We have said nothing of the position of teachers from the medical standpoint, but they have not been overlooked by Dr. OLIVER in his address. The life prospect of a schoolteacher is, on the whole, good and compares favourably with that of persons engaged in other callings. Minor troubles attributable to the harassing nature of the work done and to bad ventilation and long standing are, however, prevalent. In consideration of these and on other and general grounds the plea for seats for teachers and the suggestion that no one of their number should be employed for more than a limited time in close and unhealthy neighbourhoods have our cordial approval.

Malaria in the Pacific Islands.

As we are frequently reminded, both in and out of season, some portion of the British Empire has its face ever turned towards the source of light. But we hear less frequently of the responsibilities which his fact entails in the direction

of scientific research. We possess unique facilities for the acquisition of scientific knowledge in every latitude and longitude, but pecuniary grants for scientific investigation do not figure largely in our Estimates, and the Government Bench is rarely or never harassed by questions upon the subject. There are, however, indications that a broader spirit is about to prevail—a change that is in no small degree due to the support, both moral and substantial, which the Colonial Office under Mr. CHAMBERLAIN has extended to the study of tropical diseases. In the investigation of malaria enormous strides have been made of late, but there are numerous problems still outstanding upon the solution of which the practical application of recent discoveries largely depends. Malaria undermines the health and comfort of millions of HIS MAJESTY'S subjects and further investigation may reasonably expect to receive the support of governments, of societies, and of wealthy individuals.

Dr. PATRICK MANSON has recently proposed to the Epidemiological Society of London that an expedition might well be despatched to the Pacific Islands to investigate the causes which make for the apparently capricious distribution of malaria. The presence or absence of malarial disease in any given locality depends, Dr. MANSON suggests, upon the presence or absence of its subserving mosquitoes, such presence or absence being determined by the existence of special conditions inimical to special species of mosquitoes. By way of throwing light upon this suggestion it is proposed that an expedition should be despatched to one of the Pacific Islands, as Samoa, in which malaria is at present absent. Here the investigators would set themselves to study the local mosquito, and having obtained full knowledge of its habits they would proceed to investigate the mosquito of an island in which malaria is endemic. They are then to convey the anopheles from the malarial to the non-malarial island and to endeavour there to breed the anopheles under laboratory conditions. In the aquarium thus formed there would be introduced certain plants and animals which are apparently peculiar to Samoa with the view to discover, in one or another of these, something antagonistic to the anopheles. The experiment would then be repeated under conditions as nearly natural as might be possible. Dr. MANSON hopes that by this means there may be discovered a something which is hostile to the anopheles, and which may be subsequently turned to good account by being introduced into islands and localities where malaria is endemic. The Pacific Islands are suggested by Dr. MANSON from the fact that they also afford unique opportunities for the study of filariasis and elephantiasis. In many of the islands this latter disease attacks from 20 to 50 per cent. of the population, and in others filariasis attacks from 30 to 60 per cent. But there are also small islands with populations of from 200 to 300 in which elephantiasis is alleged not to exist, while there are other islands, equally small in population, where almost every individual is affected. The vast importance of ascertaining the distribution and habits of certain species of mosquitoes has been brought home to us during the last few days by a very remarkable paper which was read at the Pan-American Congress at Havana. At this Congress, according to our New York correspondent, Surgeon WALTER REED and Assistant-Surgeons CARROLL and AGROMONTE have recorded the manner in which they claim to have proved that the mosquito belonging to the species *culex fasciatus* which abounds in Cuba is the agent instrumental in conveying yellow fever from man to man. With a heroism worthy of the cause of truth, the same spirit which animated WALTER MYERS and led to his untimely death, persons submitted themselves to be bitten by mosquitoes which had been nourished upon the blood of yellow fever patients, with the result that they were themselves attacked by the disease. Other willing subjects exposed themselves to infection from presumably infected fomites, but in spite of every effort being made to cause the clothes, &c., to act as infecting agents no success attended the efforts. The inference is that yellow fever is not thus communicated from person to person. On the dangers of such methods of investigation we need not enlarge, while the results of practical observations of this sort may be immense and culminate in the alleviation of much human suffering.

Dr. MANSON'S proposals seem well worthy of support, and even if the specific problems to which he alluded were not solved much valuable and helpful information would doubtless be forthcoming from a scientific expedition to the Pacific Islands. The members of the Epidemiological Society have, it is gratifying to learn, accepted the proposal of their President, and efforts are being made by an appeal to the Foreign Office and to the Colonial Office, to the Local Government Board, and to the more important corporations and City companies, to obtain the £2000 necessary to support the expedition. Already a generous and anonymous subscriber has promised £500 towards the scheme, and it is much to be hoped that the enterprise will not fail from lack of subsidy. As Dr. MANSON remarked in his address, "It will be strange if in a country which provides liberally for what might be called sentimental expeditions—such as the discovery of the North Pole, or for settling mere geological points of not very great practical importance, such as the determining of the process by which coral islands acquired their peculiar conformation,—it will be strange if in such a country funds cannot be provided to attempt, in the way I suggest or otherwise, the settlement of important questions affecting the life and comfort of men and the material prosperity of the country." We cordially endorse Dr. MANSON'S expression of opinion and we trust that the necessary funds will speedily be forthcoming.

Annotations.

"Ne quid nimis."

THE DINNER OF THE HUNTERIAN SOCIETY: SIR WILLIAM MACCORMAC'S SPEECH.

THE eighty-second anniversary dinner of the Hunterian Society was held on March 15th, and the event of the evening was a vigorous speech from Sir William Mac Cormac, who dealt with the efforts that have been made to cast doubt upon the sincerity of his publicly-expressed opinions on the conduct of the Royal Army Medical Corps in South Africa. According to Sir William Mac Cormac, he and Mr. Frederick Treves did

not attach much importance to the criticism which had been levelled at their utterances as their critics were without any proper conception of the requirements of war. He himself had all along adhered to the opinion that the action of the Royal Army Medical Corps had been extraordinarily good, and they had now come forth from the inquiry with the consciousness that despite circumstances of extreme difficulty and great stress there had been no scandal and no serious shortcomings. Never before in the history of the country had there been a war of the kind and on no previous occasion had the army medical service been subjected to such strain and hardship. Considering how few the Royal Army Medical Corps were in point of numbers he considered that they had done extremely well. They were only 800 strong instead of 1200 as they should have been, but they had fulfilled all requirements notwithstanding the fact that they were intended only to serve two army corps and had to do duty for six. No one could dispute that it was a matter for sincere congratulation that the medical men had performed this remarkable feat without a complete breakdown. He regretted to say that it had been suggested in certain quarters that the officers of the corps had failed in the discharge of their duty. It was very hard that these men should be deprived of the sympathy of those in authority when they had done their very best under the most adverse circumstances, in many instances suffering death not merely in action but in the daily discharge of duty. The Royal Army Medical Corps might be swept away altogether, or it might be retained, when it must be placed on a much better footing than it was now and the officers must be raised to a higher status. The head of the Army Medical Service was not accorded the high position which he certainly ought to occupy and which in other countries such an officer did occupy. From his own personal knowledge he knew that the chief of the German Army Medical Corps held a very different position to that granted to the officer of corresponding rank in the British army. In Germany the chief of the Army Medical Corps was respected and his word was law, whereas in this country the position of the Director-General of the Army Medical Service was quite a subordinate one, and not only was this the case in regard to his pay but it was also the fact in respect to his status. If the country wished to have a proper army medical service it must be accorded a certain amount of sympathy and it must have its proper status and suitable pay. Sir William Mac Cormac concluded his remarkable vindication of the over-worked and maligned medical officers at the seat of war by pointing out that it was not the first time that he had had actual experience of war and that he could affirm that he had never seen sick and wounded men better cared for than in the present campaign. That conclusion was endorsed by the report of the Royal Commission instituted to inquire into the matter.

A JUDGE UPON THE HOUSING OF THE WORKING CLASSES.

MR. JUSTICE GRANTHAM, who has, we are sorry to learn, been indisposed while on circuit, has relieved the monotony of life in the judge's lodgings at Lewes by writing to the *Times* on the problem of the housing of the London poor. His remedy is of the rough-and-ready order, and if he has meditated profoundly on the means of carrying it out he has not made them public. He believes that London should be a mart rather than a manufactory of merchandise, and that if the manufacturing element were eliminated the difficulty would be at an end. He says, to quote his own words, "Drive out all manufactories and their workpeople into suitable places by the river and elsewhere, and the spaces left will enable you to house most of the workpeople necessary for carrying on the business of a commercial and residential town." Amongst other instances of manufactures carried on in London which might be carried on either just beyond its limits or still further off he mentions certain gasworks and the manufactories of Messrs. Maple, Messrs. Shoolbred, and Messrs. Doulton. Who are to carry out the work of expulsion he does not suggest. Presumably Parliament, as it would certainly exceed the powers of the County Council. As to how London would reconcile itself to the measure he does not speculate, nor does he mention that as manufacturers must almost necessarily carry on their work where it pays them best to do so they will need substantial compensation for such disturbance, while the removal of the big manufacturers and their workpeople would create space by removing highly rated buildings and the prosperous artisans who, though they need better housing, are not accountable for the worst part of London's over-crowding. If Mr. Justice Grantham were a fairy with a wand to carry out his own reform, and we could wake up to find London a Utopia devoted only to residence and the distribution of articles manufactured elsewhere, we should find London considerably diminished in importance. It would offer a less substantial objective to an enemy's attack in the event of war with a European Power, but it would lose its tremendous and pre-eminent position in the world in time of peace. At the same time all suggestions for solving the housing problem are interesting, and that of Mr. Justice Grantham has originality to recommend it, while it cannot be said to be of the tinkering order. If carried out it would at least effect its object, and it may contain the germ of a less drastic but more practicable measure.

THE WRONG MEDICINE AND ITS RESULTS.

AN action recently brought with success against a firm of druggists at Glasgow illustrates the dangers which may arise where the business of dispensing drugs is not carried out with the greatest possible care in all its departments. The pursuer, or to use the terminology of our own courts, the plaintiff, a commission-agent in the boot trade, took two prescriptions to the defendants' shop to be made up, one for a potion and the other for an ointment. Later in the day he sent a messenger to fetch them, and on the lad returning with one bottle only sent him again to ask for the ointment and the prescriptions. The druggists seem to have said that they had no ointment and no prescriptions to deliver, and the request for these, which was repeated a second time, does not seem to have excited any anxiety in their minds as to a possible mistake. On the other hand, the customer seems to have assumed that the bottle he had received contained an instalment, at all events, of what he had ordered, for he took some of the mixture, merely tearing off enough of the paper wrapper to enable him to extract the cork. Had he torn off more he would have found an ordinary blue-glass fluted bottle such as is used for poisons, with a label informing him that it contained "Poison Not to be Taken," and further that it was intended for a Mrs. Robinson, he being Mr. Robertson. A confusion between the two names had no doubt led to the initial error of the wrong parcel being handed over the counter and up to this point the mistake of the druggists, though serious and avoidable, was one which might occur in such circumstances without there being great negligence on their part. Their subsequent behaviour, however, cannot be defended. Mr. Robertson went at once to the shop and asked if that which he had drunk and which had irritated his throat considerably had been that which he was intended to drink. The error was then discovered, but the course adopted by those to whom he made his complaint was not calculated to mitigate the danger which had arisen. Being aware of the

contents of the bottle intended for Mrs. Robinson, the defendants' assistant knew that Mr. Robertson had swallowed a mixture containing chloroform, belladonna, and aconite. He appears to have inferred that the quantity taken was small, mainly from Mr. Robertson being still alive; and instead of sending for a medical man without delay the assistant was content with administering an emollient and some jujubes to allay the burning sensations of the throat. Mr. Robertson, temporarily relieved and reassured, went home to Pollokshields, but became very ill by the time he reached his house. He was then medically attended, with the result that he ultimately recovered, but only after he had been away from his business for several weeks. In defending the action brought against them the druggists made the most of the conduct of the plaintiff in not unwrapping the bottle sent to him and discovering that he had received a parcel that was not meant for him, but the jury found against them with £700 damages. This is a large sum, and if the firm were being fined simply as the result of an assistant handing the wrong parcel to a possibly inarticulate boy we might consider it too large. But the Lord Justice-Clerk, in his summing-up, took a view, with which we agree, that the defendants, or their assistants, for whose carelessness they are answerable, had two opportunities of correcting their mistake and would not avail themselves of them. When the plaintiff sent to ask for his prescriptions and his ointment they ought to have suspected an error, while they had a further chance of minimising the result of their previous lapse when the victim visited their shop and stated that he had drunk what might or might not have been a fatal dose of a poisonous compound. With the greatest care and with constant supervision it is difficult to eliminate mistakes from the conduct of any business, but in the dispensing of drugs, in which a mistake may lead to terrible and tragic consequences, all concerned should be eternally on the alert to detect the possibility of accident. The plaintiff is not likely to drink medicine again without taking the precaution of unwrapping the bottle, and the fact that out of his contributory carelessness came £700 damages will not serve to conceal the fact that he came within an ace of death. The most reckless patient should be aware that the amount of the dose to be taken is of importance and that the label on the bottle usually gives directions upon the subject which he should study and obey. Had Mr. Robertson done this he would have been spared an experience which may have been dear even at £700.

THE ELIMINATION OF ARSENIC THROUGH THE HAIR.

WE publish an original article this week in which the authors—Mr. Edmund Knecht, Ph.D., F.I.C., and Mr. W. F. Dearden, M.R.C.S. Eng., L.R.C.P. Lond.—show conclusively that arsenic occurs in easily detectable quantity in the hair of persons who have been taking the drug either medicinally or accidentally as in the case of beer. The observation is of the utmost importance in affording a decided aid to the diagnosis of arsenical poisoning. As Mr. Knecht and Mr. Dearden point out, M. Gautier of Paris, in discussing the part played by arsenic in the animal organism, referred to the function normally exercised by hair as a means of eliminating arsenic from the system. Other workers have also referred to the fact of arsenic having been detected in the hair. Dr. J. Reid of Redhill, for example, writes to us in a letter dated Jan. 12th, 1901, expressing his surprise that no complete necropsy has been made in connexion with the beer-poisoning epidemic, although he points out that in the case of a rabbit suffering from chronic arsenical poisoning he has seen the liver fatty in one lobe, the fatty portion being marked out from the sound portion by a straight vertical line. But incidentally he describes an easy and rapid test for arsenic, recommending for the purpose the examination of the hair by means of an ammonia copper solution containing an excess of the precipitated copper oxide. In patients taking small doses the medulla of the hair will remain unchanged so far as half an inch objective is concerned, but when viewed by one-sixth inch objective the small green particles of arsenite of copper are seen appearing as green granules without definite shape or form. Dr. Reid was thus led to think that this simple test might prove useful forensically. His observations are now completely confirmed by Mr. Knecht and Mr. Dearden, who, however, have successfully employed not only a method of detection, but a method of estimation. Thus in healthy patients the quantity of arsenic found was too minute to be estimated in one gramme of substance, but in a patient who was taking the drug medicinally the hair was found to contain arsenic in the proportion of 0·3 in 10,000. One of the patients who had been drinking arsenical beer had present in his hair the same proportion of arsenic, whilst another showed as much as one part of arsenic in 10,000. The method employed for the estimation of arsenic consisted in first destroying the hair by fuming nitric acid, then dissipating the excess of nitric acid, after which the product is transferred to the Marsh apparatus. The fate of arsenic in the economy is thus shown to enter a new and interesting phase. It would be of great importance and interest to determine whether when arsenic is administered as an organic combination, such as cacodyl, the drug is eliminated in the same way. It was, no doubt, the instructive study of organo-arsenic derivatives by M. Gautier which led him to refer to the function normally exercised by hair as a means of eliminating this element from the system. There is abundant evidence now to show that the fate of arsenic in the body is partly in the hair, and this fact cannot but be of the utmost importance in medicine, especially in toxicology.

THE PREVENTION OF TUBERCULOSIS.

As a result of the deputation from the Society for the Prevention and Cure of Consumption in the county of Durham, the Sunderland Town Council on March 13th passed the following recommendations of the Health Committee:—

That a fee of 2*s*. 6*d*. be paid to medical practitioners in the borough who notify to the Health Office those cases of consumption of the lungs in the borough in which there is expectoration or discharge containing tubercle bacilli, such fee only to be paid once in the case of each patient. This arrangement to be in force for one year on trial.

That the council enter into a contract for one year, from the beginning of May next, with the Society for the Prevention and Cure of Consumption in the county of Durham for the use of two beds in the county sanatorium at Stanhope by the payment of £75 per bed for that period. Such beds to be reserved for the sole use of poor patients from this borough in the early stages of the disease.

Alderman Harrison, the chairman of the Health Committee, remarked that if they got early information of the existence of the disease at any place the officers would endeavour to prevent its spread by attending to the surroundings of the house and making them unfavourable for its development. When they got into a system of compulsory notification of cases of consumption they would go a step further in the prevention of the spread of the disease. He declared that the open-air cure had passed the experimental stage and was now a success. By a notice placed inside the electric tramcars persons have been earnestly requested not to spit in or on the cars in Sunderland, and for some years past the corporation have had suspected sputum gratuitously tested for tubercle bacilli, have offered the free disinfection of the rooms of consumptives, have distributed

leaflets on the prevention of consumption, and have also granted certificates to dairy farmers who keep sanitary byres and all of whose cows have been proved free from tuberculosis under the tuberculin test.

CHILDREN AND THE DRINK TRADE.

THOSE who wish to study the question of the injury inflicted by the drink traffic on the child-life of the nation would do well to possess themselves of a pamphlet on the subject published by Mr. Brimley Johnson at 3, York-buildings, Adelphi, W.C. The preface is written by the Archbishop of Canterbury. The book contains some startling facts bearing on child-drunkenness and alcoholic diseases in children. The third part deals with the prohibition of sale to children and is worthy of special study in connexion with the introduction of a Bill in Parliament for this purpose. The practice of other countries is quoted and the reader is left with the impression that sixteen years is the lowest age at which children should be allowed to buy drink. The principle of parental authority has not been allowed absolute sway in our legislation where the vital and moral interests of the child are at stake, and all allow that they are terribly at stake in this question. Much of the injury to children through alcohol comes from ignorance, as when a mother gives beer and gin to her child while taking the same herself. There is an element of unselfishness in the habit of giving the child "a drop," but thoughtlessness and ignorance sadly predominate. The large majority by which the second reading of the Bill was carried on Wednesday is a clear proof, for the guidance of the Government, as to the feeling of all parties on this subject.

THE SIEGE OF THE LEGATIONS AT PEKING: A FRENCH SURGEON'S WORK AND VIEWS.

SURGEON-MAJOR MATIGNON of the French army, who volunteered for duty at Peking when the situation became grave, has a short paper in the *Archives de Médecine et de Pharmacie Militaires* for March describing his experiences during the siege last summer. "The events that took place at Peking from June 20th to August 15th, 1900, have this peculiarity," he says in his exordium, "that a handful of men were taken by surprise when destitute of everything, or pretty nearly so, and found themselves compelled to organise a defensible front with a perimeter of three and a half kilometres against a well-armed and well-victualled enemy 30 times as numerous as they were. A few French, German, English, American, Austrian, Italian, Japanese, and Russian sailors formed a little body of 400 rifles, to whom 50 volunteers of all nationalities joined themselves." When the Boxers made their unexpected onslaught the British Legation became a refuge-general where 800 Europeans—150 of them being women and children—sought shelter. It was here that a small hospital was improvised and to it the wounded from the outposts by which the legation was covered were carried. These outposts, three in number, were established (1) to the south-east in the French and German Legations; (2) to the north-east in a large park, where the defenders were the Japanese and the Italians; and (3) to the south-west in the Russian and American Legations. Surgeon-Major Matignon had charge of the first, being assisted by a German hospital orderly who "thoroughly understood his work and was in possession of a dressing-bag." Throughout the siege, notwithstanding the necessarily defective hygienic arrangements, the bad quality of the water, of which the men, owing to the excessive heat, were forced to drink enormous quantities unfiltered and unboiled, and an almost entirely flesh diet (for 55 days horse meat was alone available), the little garrison of 90 men all told had no sick. The enemy's efforts were for the most part expended upon four chief points, and to these whenever an attack commenced Surgeon-Major Matignon used to hurry with his game-bag full of surgical necessaries. The French and Austrian detachments having arrived without any medical *personnel* he had absolutely no one to help him on these occasions, but was compelled to do everything with his own hands. As soon as a man was wounded he dressed him on the spot as well as he could and sent him back to his work. Their numbers were too small to admit of the ranks being even temporarily depleted, but Surgeon-Major Matignon adds that "not one of them [the wounded], even those who were seriously injured about the head, made the slightest difficulty about resuming his service." The Chinese kept up an incessant shower of missiles of every description from shells and rifle bullets down to bricks and stones. Upwards of 800 shells were aimed at the French Legation, of which the eastern side was literally pulverised. The defenders exercised the utmost caution, protecting themselves behind barricades and in trenches, but in spite of this they suffered severely. As might be expected most of the injuries were situated about the head or upper extremities. The following table, which was drawn up by Surgeon-Major Matignon with the help of Dr. Velde of the German Legation, gives some very interesting information.

Killed and Wounded at Peking, June—August, 1900.

Nationality.	Strength.		Killed.		Wounded.		Percentage.	
	Officers.	Men.	Officers.	Men.	Officers.	Men.	Killed.	Wounded.
German...	1	50	—	12	—	15	23·5	31·4
American	3	53	—	7	2	8	12·5	17·8
English...	3	79	1	2	2	8	3·7	24·4
Austrian	5	30	1	3	4	8	11·4	34·2
French	4	45	2	10	3	30	24·4	67·3
Italian	1	28	—	7	1	11	24·1	41·4
Japanese	3	24	—	5	1	21	18·5	81·4
Russian...	1	79	—	4	1	18	4·9	23·9
Volunteers	—	50	—	11	—	22	22·0	44·0

The technical part of the paper is full of interest and should be read *in extenso*. Some of the cases described are remarkable. In conclusion the author of the paper considers the following circumstance sufficiently curious to deserve mention. Out of 22 officers of all nationalities who took part in the defence there were 19 combatants and 3 medical non-combatants. In the first category 14 were wounded, the percentage being 73·6. The proportion is extremely high, but amongst the non-combatants it was higher still, equalling cent. per cent., inasmuch as each of the trio received a wound.

THE IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.

THE St. Patrick's festival dinner of the Irish Medica Schools' and Graduates' Association was held on March 16th at the Hotel Cecil, Dr. William Alexander being in the chair. The interesting incident of the evening was the first presentation of the Arnott medal which has been founded by Mr. D. Arnott in memory of his father the late Sir John Arnott, whose name is well known in connexion with the promotion of Irish industries. The medal is to be given annually to an Irish graduate or diplomate in medicine who has specially distinguished himself in the field or in medical science. The first recipient of the medal, Captain Charles Dalton, R.A.M.C., was presented to the president of the association by Dr. T. Gilbart Smith, who stated that the honour was conferred in recognition of his gallantry and distinguished

services, particularly during the operations on the Tugela river, where on Jan. 23rd, 1900, he was dangerously wounded in the abdomen whilst attending a wounded officer under heavy fire; he was mentioned in despatches by Lord Roberts. The toast of "Our Defenders" was proposed by Dr. H. Macnaughton Jones, and was responded to by Inspector-General W. H. Lloyd, R.N., Captain Dalton, R.A.M.C., and Surgeon-Major W. Moyle O'Connor. Sir William Mac Cormac gave the toast of "Our Guests," which was replied to by Colonel Gallwey. The number of guests amounted to over 150, and the excellent singing between the speeches was much appreciated. Mr. P. J. Freyer and Dr. J. H. Swanton were heartily congratulated on the success of their efforts in organising the dinner.

MEMORIAL TO THE LATE PROFESSOR TOM JONES.

THE fund which is being raised by friends of the late Professor Tom Jones to establish a memorial to him in the Owens College has now reached nearly £850. We are sure that it will be gratifying to many who valued the late professor's character and work that such a satisfactory proof of the esteem in which he was held has been shown by the contributors of this considerable sum. We are asked to state that it is intended to close the fund on March 25th and that a meeting of subscribers will be called shortly afterwards. Subscriptions may be sent to the honorary treasurer, Mr. G. A. Wright, 16, St. John-street, Manchester, or to one of the honorary secretaries. Mr. J. E. Platt, 14, St. John-street, Manchester, and Dr. F. J. H. Coutts, Cromar, Plymouth-grove, Manchester.

TRAUMATIC HERPES ZOSTER.

HERPES zoster from injury of a nerve trunk is rare. It occurs especially after wounds such as are produced by a cutting instrument or a fractured bone, and after amputations it may appear on the stump. Herpes zoster from simple contusions or lesions of the terminal nerve filaments is still rarer. At the meeting of the Société Médicale des Hôpitaux of Paris on Feb. 22nd Professor E. Gaucher and M. Henry Bernard communicated an interesting paper on this subject. They first referred to some recorded cases. Herpes zoster has been observed on the right eyelids and cheek after a blow. In two cases the eruption has followed a fall during gymnastic exercises. In another case a woman missed her footing and this caused extreme flexion of the lumbar region. Lumbo-abdominal herpes appeared on the side towards which the body was flexed. We may add that herpes zoster after lumbar sprain has also been observed by Besnier and by Didier.[1] An example of herpes produced by lesions of a terminal nerve filament is a case in which, after tooth extraction, zona of the forehead, the eyelids, and the cheek appeared on the same side. In two cases zona followed the taking of a very hot bath. M. Gaucher and M. Bernard related the following three cases which were observed by themselves. A man, aged 46 years, received a blow on the left side of the nose and on the left cheek. Immediately he commenced to feel pain in the whole of the left side of the head, principally in the temporal region. 48 hours later he sought advice for an eruption which had appeared at the injured spot. On the left ala nasi and the adjacent part of the cheek there was diffuse erythema covered with little vesicles, of which some were whitish and others were surmounted with a brown crust. There were similar crusts in the left nostril. The left anterior pillar of the fauces was redder than was the right and it was dotted with little whitish vesicles. There was no fever. The headache, which was entirely localised on the left side, still persisted. There were no "painful points" of facial neuralgia nor was there any sensory trouble, except slight hyperæsthesia in the position of the eruption. Under rest and a simple protective dressing the vesicles rapidly dried up, but the headache persisted for several days. In the second case a child, aged three years, superficially wounded himself with a toy below the left lower eyelid. Two days later a group of herpetiform vesicles appeared on the chin on the same side. In the third case a man received a contusion of the left flank. On the same day a vesicular eruption in the form of a girdle, occupying the left lumbo-abdominal region and presenting all the characters of zona, supervened. It formed an oblique band extending from the spine to the median line in front and was accompanied by acute pain. The time of appearance of zona after an injury is very variable. Sometimes it appears almost immediately (in an hour in one case); sometimes after a long interval (three years in a case described by Charcot). In the latter circumstance probably zona the result of a general infection develops on a *locus minoris resistentiæ* created by the injury, or the zona is symptomatic of slow nerve degeneration. The localisation of the eruption in relation to the injury is of interest. In some cases the zona is localised exactly on the injured region, primarily at any rate; secondarily, vesicles may appear on adjacent parts innervated by branches from the same trunk as the injured ones. In other cases the injured region is unaffected and the eruption appears on an adjacent region in the same area of innervation: either a lesion of a nerve trunk is followed by zona in its area of distribution or a lesion of terminal branches is followed by zona in the area of distribution of other terminal branches.

[1] Journal de Maladies Cutanés et Syphilitiques, January, 1897.

HOSPITAL TREATMENT OF COLLIERY CASES.

AT a meeting of the general committee of the Coventry and Warwickshire Hospital on March 13th the house surgeon (Dr. F. H. Day) called the attention of the house committee to the following matter. On Feb. 26th a lad named Ward was admitted to the institution from Wyken Colliery with a crushed hand. Afterwards the colliery people sent to Dr. E. N. Nason of Nuneaton asking him to go to the hospital and to examine the patient's hand. He telephoned to Dr. Day, who explained the condition of the injury, whereupon Dr. Nason declined to attend and he informed the colliery managers that the patient would have all needed attention at the hospital. It was stated that Dr. D. Crowe, another medical man in the district, was also communicated with on the subject and that he went to the institution, the patient being told to refuse to have anything done to his hand till he had been seen by Dr. Crowe. Dr. Day complained to his committee that it would be impossible to carry on the work of the hospital under these conditions, but that if a consultation was necessary in any case the usual staff could be called in. A house surgeon could not be hampered by having to submit to other medical men coming in from various parts of the county. The house committee thereupon instructed the secretary to write to the manager of the Wyken Colliery informing him that all cases sent to the hospital were treated by the medical staff and that it was neither desirable nor just that they should be expected to meet in consultation medical men from other towns in no way connected with the hospital; also that the mere fact of a case being sent to the hospital was an assumption on the part of those who sent it that they were satisfied with the competence of the medical staff. In reply to this letter the colliery manager (Mr. Liddell) offered an apology for the course which had been taken and explained that the sole object was to get a report of the nature of the injuries of the patient, such report being necessary. He did not doubt

the efficiency of the hospital staff. With the reading of this letter from Mr. Liddell the matter dropped. We trust that this is not the usual way in which collieries deal with the medical treatment of their workers. It is perfectly monstrous to suppose that the medical officer of a hospital will submit to have his diagnosis called in question by any practitioner whom an outside authority may choose to send. If Mr. Liddell wished to have a report upon the condition of the pitman's hand his proper course would have been to write to the house surgeon of the hospital asking for a report and inclosing the usual fee to be paid either to the house surgeon or the hospital according to the rules of the institution. If he was not satisfied with the report of the house surgeon he would have been quite within his rights in asking for another opinion from one of the visiting staff. However, he seems to have seen the error of his ways, and we hope that such an incident will not occur again.

THE EFFECTS OF DUM-DUM BULLETS.

A STRIKING instance of the very severe effects of Dum-dum bullets when fired at only a short distance was afforded by the suicide recently of a private in the Scots Guards. The newspaper reports are not very full, but sufficient can be gathered to show the extraordinary results produced. The man placed the muzzle of the rifle in his mouth and pressed the trigger with his foot. Some of the effects must doubtlessly be attributed to the action of the gases liberated from the cordite, for they were set free in large volumes and had to escape either by the mouth or through the channel formed by the projectile. The bullet was a soft-nosed or Dum-dum, and it passed through the hard palate, the base and vault of the skull, then through a cloth cap, and struck the ceiling. It had spread out or "mushroomed" and had lost its nickel sheath. The man's head was enormously swollen, many of the bones being broken and nearly all of the sutures opened. This was due to what has been called the "explosive" action of these high-velocity bullets; the contents of the skull acting as a liquid, the effect of the increased pressure due to the entry of the bullet is transmitted equally in every direction. The only wound in the skin was a vertical one at the back of the head more than nine inches long with sharply-cut edges. Most of the brain substance and many pieces of the skull bones were driven through this wound and scattered about the room. The injuries were remarkably severe, much more so than those resulting from the firing of a Martini-Henry rifle in a similar position, for in the case of similar suicides with that rifle the bones were merely perforated.

TYPHOID FEVER IN THE CITY OF YORK.

ON Nov. 17th the Local Government Board wrote to the town clerk of York that they had observed that 10 deaths from fever were reported to the Registrar-General as occurring during the quarter ending Sept. 30th in the registration sub-district of Micklegate. The Board therefore requested the town council to instruct their medical officer to prepare a report upon the prevalence of fever in the borough. This report, drawn up by Dr. E. M. Smith, medical officer of health of York, now lies before us. The report states that during the year 1900 244 cases of typhoid fever were reported to Dr. Smith as occurring in the sanitary district of the city of York. Of these 38 patients died—14 in hospital and 24 at their own homes. The death-rate from typhoid fever for the year was therefore 15·5 per cent. of the cases notified. During the first half of the year there were 23 cases with four deaths; during the second half of the year there were 221 cases with 34 deaths. As regards age-distribution, in 19 cases with two deaths the patients were under five years of age; 89 cases occurred in persons between five and 15 years of age, of whom five died; 52 cases in persons between 15 and 25 years of age, of whom 11 died; and 82 in persons between 25 and 65 years of age, of whom 19 died. Of the total number of cases 17 of the patients apparently contracted the disease outside the city. The unusual prevalence of typhoid fever during the second half of the year is attributed by Dr. Smith to the very dry spring and the very hot periods of the summer, which fostered and developed the evils attaching to the increasing number of specifically infected midden privies. During the first half of the year 23 cases occurred in 21 houses, and of these 21 houses 11 were associated with the existence of foul privies, and 10 with water-closets of which seven had defective drains. During the second half of the year 221 cases occurred in 171 houses, 97 of which had midden privies and 74 had water-closets. In the former there occurred 124 cases of typhoid fever, 27 of which were secondary and five of which had contracted the disease outside York. The large majority of the midden privies were more or less foul or leaking. In the 74 water-closet houses there were 97 cases, but deducting those houses where no sanitary defect was observed, so that probably the patients contracted the disease elsewhere, and those cases which were known to have become infected elsewhere, there remain 57 water-closet houses to consider. Of these 27 had defects of drainage, 16 were decidedly dirty, and 10, although not having defective drainage, were associated with polluted soil. In 15 water-closet houses only could no clue be found to the probable or possible origin of the disease. Dr. Smith states that taking the whole of the cases into consideration he finds that the majority were associated with midden privies most of which were foul or leaking. The water-supply, the milk-supply, and the consumption of oysters and ice-cream are stated to have had no connexion with the outbreak. Dr. Smith's chief recommendation is the abolition of all midden privies and the substitution of water-closets or dry ash receptacles. The report is very interesting from the large proportion of cases occurring in persons under 15 years of age, there being 108 such, with seven deaths, a case-mortality of 6 4 per cent.

APHASIA WITH LETTER-BLINDNESS BUT WITHOUT WORD-BLINDNESS.

DR. GUY HINSDALE of Philadelphia has published in the *Journal of the American Medical Association* of March 2nd an interesting case of aphasia with letter-blindness but not word-blindness which possesses a somewhat exceptional value in that the patient was a physician belonging to a well-known institution. The patient was a man, 35 years of age, the subject of pulmonary phthisis, probably of about four years' duration. On Jan. 2nd, 1899, he had a sudden attack of paralysis involving the right face, arm, and leg, with almost total loss of speech. During the first 24 hours he could only speak the word "no." On the next day he could utter four words, could move his right arm, and had good control of the facial movements. He regained power steadily after this. On the ninth day he walked to the sitting-room and insisted on helping himself to tobacco and a glass of wine. On the eleventh day he was able to write his name for the first time and his vocabulary was steadily increasing. When shown a silver pencil he could not name it; when asked if it was a knife he said "No." "A pencil?" "No." "Something to write with?" "Yes." On the nineteenth day he was shown a silver dollar, but could not say what it was. "Is it a watch?" "No." "Is it a wheel?" "No." "Is it a piece of iron?" "No." "Is it a dollar?" "Yes, it is a dollar." He was given a few coins; he added them in a properly written column with the total value correct. He mispronounced some words and used

words incorrectly in a sentence. For example, he said "the quiet was," instead of the reason was; "glass of ice-water," for a pair of scissors; "spade," for paper; and "put those groups afay for me," for put those grapes away for me—paraphasia. He had letter-blindness but not word-blindness. When shown the alphabet he counted "One, two, three," instead of A, B, C. When shown the words "boy" and "child" he instantly pronounced them. He read the daily papers regularly and read McMaster's "History of the United States" and enjoyed it. Dr. Hinsdale points out that the letter-blindness is a most interesting and unusual feature. There may be word-blindness without letter-blindness, or *vice versâ*. If by disease affecting the brain the visual word-centre is completely destroyed, or if it is completely cut off from the primary visual perceptive centre in the occipital lobe, then the patient is both word-blind and letter-blind. But if the destruction is only partial and that part of the centre in which are stored the visual memories of letters remains intact, then the patient, though still able to recognise the individual letters by sight, will no longer be able to recognise and interpret words, because he has lost the visual memories for words which he had acquired by years of laborious effort. In the present case the clinical evidence points to hæmorrhage or embolism of the left Sylvian artery resulting in hemiplegia and aphasia. The visual word-centre is supplied by a branch of the Sylvian artery, and it is probable that an embolus lodged in this branch or in one of its twigs produced a partial softening and destruction of a part of this centre. The hemiplegia was recovered from, but the aphasia persisted at the end of nearly 18 months, to the annoyance of the man, whose living as a physician depended upon the free exercise of his highest intellectual functions. He shortly afterwards died from phthisis.

CARBONATED BOTTLED BEER.

MUCH of the bottled beer on the market is undoubtedly carbonated; that is to say, its sparkling quality depends not upon the gas generated in the beer itself by normal fermentation but upon artificial gas forced into the liquid in the same way as soda water is made. With a little experience it is not difficult to distinguish beer so charged artificially from beer charged with its own gas and developed in the liquid by fermentation. There are reasons why this artificial recourse should be discouraged, and, to start with, beer thus artificially charged with carbonic acid gas is, there is reason to think, dietetically inferior to beer charged with its own natural gas. Beer does not "assimilate" forced gas in the same way as when the gas is generated within the liquid, neither has carbonated beer the smoothness on the palate of normally sparkling beer and it soon becomes flat and stale. Indeed, it is probable that unsound and vapid beer may be passed off as a sound article by being forcibly charged with foreign carbonic acid gas and the practice is on this account objectionable. The sparkling quality of champagne is derived, of course, from the fermentation of the "liqueur" which is placed in it prior to the final corking in bottle. The gas is generated within the liquid and imparts to it a pleasant, attractive, and wholesome effervescent quality. On account of the gas being generated within the liquid it is retained in, so to speak, a nascent state and is therefore gradually disengaged on removal of the cork. The effervescence thus lasts for a considerable time. Champagne if it becomes flat cannot be made to resume its pleasant sparkling quality to the same degree by forcing gas into it. Yet another example occurs in the case of so-called "stone" ginger-beer which sparkles with carbonic acid gas generated by the fermentation of the liquid. For this reason it is probable that "stone" ginger-beer is generally preferred—as it is more palatable and wholesome—to ginger-beer prepared by carbonating a sugary infusion of ginger. The advantages of a natural mineral water, again, as opposed to the artificial mineral water are well known. The gas in a natural water is undoubtedly in some combined form which is not quite understood. At any rate, naturally impregnated waters are softer and smoother on the palate than artificially carbonated waters, while the former yield up their gas more slowly and in more minute bubbles than does the latter. Similar advantages are obtained in the case of beer which effervesces with the carbonic acid gas normally developed in the liquid by fermentation. For dietetic purposes such beer is much to be preferred to beer into which carbonic acid gas is artificially forced. By the way, it is not, we fancy, generally known that bottled beer was accidentally discovered by Alexander Nowell, head master of Westminster School, *circum* 1543; he was also the author of the Catechism. A curious collocation. Particulars of his life are to be found in the "Dictionary of National Biography" and in Mr. Sargeaunt's "Annals of Westminster School."

THE HOUSING QUESTION.

MR. GEORGE CADBURY, a member of the well-known firm of cocoa manufacturers, who, we believe, belongs to the Society of Friends, has just set a noble example by a gift in trust of property valued at nearly £180,000. The property consists of a portion, in extent 330 acres, of the Bournville estate. Of this 330 acres one-third has been laid out and upon it are built 370 cottages, of which 143 have been sold at cost price on leases of 999 years. Those who have paid less than half of the cost are charged 3 per cent. interest, while those who have paid more than half are charged 2½ per cent. The remaining cottages, shops, and the like are let to weekly tenants and the rents accruing from these are paid into the trust. There are also 200 allotment plots, and in addition gardening classes have been formed, to each member of which is allotted a small plot, the classes being under the care of the Worcestershire County Council. The total rent-roll is £5245 per annum and the remainder, after current expenses are paid, is to be administered by the trust for the development of the estate. It is intended to purchase similar estates with the profits from the present one, and of such one-fifteenth only may be used for manufactories and one-tenth at the least is to be kept as open spaces, while the remainder is to be laid out on the Bournville model with cottages and gardens, the buildings not to cover more than one-fourth of the land on which they are erected. The idea of the founder is that the race should be helped to maintain its physique by the workers in factories being given opportunity to spend their leisure in recreation out of doors. Mr. Cadbury's scheme approaches as nearly as is possible under the modern conditions of manufactories to the ideal state in which the master, his apprentices, and his workmen lived under one roof and had common interests. Probably, as in all experiments, there will be mistakes and failures at first, but the idea is a noble one, and if something similar could be carried out for London, to say nothing of other large manufacturing towns, the new century would be worthily inaugurated.

APPENDICITIS DUE TO INTESTINAL WORMS.

AT the meeting of the Paris Academy of Medicine which was held on March 12th M. Metchnikoff made a most interesting communication. As Deputy Director of the Pasteur Institute M. Metchnikoff had been struck by the number of cases of appendicitis, true or false, in which he had been able to assign intestinal worms as the exciting cause, more especially in children. He cited three particularly instructive cases which had been under the care of Dr. Lemoine. All these cases showed

signs of a grave appendicular crisis, and upon a microscopical examination of the fæces being made there were found the ova of various parasites, such as the ascaris and the ova of nematode or trichocephalous worms. Vermifuge treatment expelled the worms and the crisis ceased as if by magic. Further microscopical examination revealed the presence of more ova and the treatment was continued until the patients were entirely cured. One of them had suffered from recurrent attacks every two or three months for four years. These facts are not new, for Boeckel and Davaine have already reported cases of appendicitis which coincided with the presence of intestinal worms, while Natale has described an inguinal abscess of appendicular origin which burst outwardly and gave exit to 16 living ascarides. Several surgeons, among whom are M. Brun and M. Guinard, while removing appendices have found various parasites within them, while sometimes an ascaris has been found outside the appendix, having escaped through a perforation. M. Metchnikoff does not consider that the worm is able to perforate the appendix by itself, but it brings about an injury to the mucous membrane which is then attacked by microbes, and through the ulcer thus formed the worm forces its way. Therefore, says M. Metchnikoff, a certain number of cases of appendicitis are due to the above-mentioned causes and can be cured by the treatment indicated. The fæces should be always examined microscopically for the existence of ova, and just as the sputa are examined in diseases of the lung or the urine in diseases of the kidneys, so the fæces should be examined in diseases of the intestine. As a means of prophylaxis in these tricky (*tournoises*) forms of appendicitis care should be taken to avoid such articles of food as carry with them the ova of parasites, such, for instance, as raw salads or raw fruit which has not been washed.

THE ROYAL INFIRMARY OF NEWCASTLE.

WE have to offer our hearty congratulations to the inhabitants of Newcastle-on-Tyne and its neighbourhood, and particularly to the governors of the Royal Infirmary, on the good fortune by which they are now enabled to proceed freely and cheerfully with the erection of the building of which His Majesty the King (then Prince of Wales) laid the foundation-stone on June 20th, 1900. They have been splendidly supported, first, by the inhabitants of the town and district subscribing over £100,000 towards the Jubilee Fund in memory of Her late Majesty's incomparable reign; secondly, by the will of the late Mr. John Hall of Newcastle, who left £100,000 towards the object on conditions that we need not here specify; and, lastly and most recently, by the munificent gift of £100,000 from Mr. and Mrs. Watson Armstrong, who are nobly desirous of so commemorating their distinguished relative Lord Armstrong in the city of his birth and around which his affections centred. Some delay has been occasioned in the building operations by the terms of Mr. Hall's will, but all difficulties have now been removed by the judgment of the Chancery Division of the High Court of Justice and by the almost coincident event of Mr. and Mrs. Watson Armstrong's gift, which was announced to the public in a letter to Sir George Philipson read on March 14th to the committee of the infirmary. We have only to express the hope that the new building will be worthy of the generosity with which it is promoted and of the great district in which it must long be a conspicuous object. We cannot doubt that under the wise guidance of Sir George Philipson and his colleagues upon the board of management the funds will be carefully administered, with chief regard to the welfare of the sick and injured for whose benefit it is being raised. The importance of the Newcastle School of Medicine and the excellence of the medical and surgical work done even in the old infirmary are generally recognised and are not unduly rewarded by the munificent gifts which we now notice.

OBSTETRIC FEES AND MEDICAL CONTRACTS.

IN the colliery districts the miners are slow to realise the fact that they pay their medical men very poorly. Receiving much larger wages themselves than they used to do they might be expected to feel more acutely the inadequacy of the remuneration which they give for medical attendance. "A General Practitioner," whose letter appears on another page, complains that some of the large sick clubs are trying to reduce the obstetric fee from the recognised guinea to ten shillings. We agree with our correspondent that such terms will not survive a fair discussion by selected committees from each side.

THE freedom and livery of the Worshipful Company of Leathersellers of London have been conferred upon Sir William Mac Cormac, President of the Royal College of Surgeons of England. The presentation was made at the hall of the company on March 13th. Sir William Mac Cormac having signed the required declaration in the presence of the Master and Court was robed by the clerk and afterwards conducted to the reception-room. A banquet, to which several guests had been invited, followed, and at its conclusion the health of the new freeman was drunk and the Master presented to him a handsome casket containing the certificate of freedom upon which was inscribed the following resolution of the Court—viz., "That having regard to his distinguished career and the services rendered to his country in South Africa Sir William Mac Cormac, Bart., K.C.V.O., President of the Royal College of Surgeons, be presented with the Honorary Freedom and Livery of the Company."

ON March 20th His Majesty the King received upwards of forty addresses from various educational and other bodies. Among the deputations were those representing Edinburgh University, Trinity College Dublin, the Royal College of Physicians of London, the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, the Royal Scottish Hospital, the Royal Medical and Chirurgical Society, and the Royal Institute of Public Health.

THE vacancy for the post of ophthalmic surgeon to St. Bartholomew's Hospital caused by the death of Mr. Bowater John Vernon has been filled by the election of Mr. Holmes Spicer. Mr. W. H. Jessop becomes senior ophthalmic surgeon in the room of Mr. Vernon, with the appointment of lecturer in ophthalmic medicine and surgery.

SUBSCRIPTIONS towards the expedition to the Pacific Islands for the investigation of the causation of malaria can, we are informed, be sent to the honorary secretaries of the Epidemiological Society at 11, Chandos-street, Cavendish-square, W., and from them further particulars of the project can be obtained.

A TELEGRAM has been received at the Colonial Office, dated March 19th, 1901, from Sir W. F. Hely-Hutchinson, Governor of Cape Colony, reporting for the week ending March 16th 81 plague cases admitted to hospital: deaths, 29; suspects, 17; and contacts, 402.

THE Privy Council by Order in Council have extended the operation of Part II. of the Medical Act of 1886 to Italy.

This is the first step, we presume, in the promotion of reciprocity of practice between Italy and the United Kingdom.

Sir William Broadbent, Bart., has been appointed a Knight Commander of the Royal Victorian Order and Dr. A. R. Manby a member of the fourth class of the same order.

HISTORY OF RENAL SURGERY.

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III.[1]

NEPHROTOMY (*continued*).

AT the beginning of last century (1803) Richter describes very well the appearances of suppurative disease of the kidney and also indicates the mode of operating, but he does not recommend any new lines of treatment. A valuable contribution to the pathology of the subject is that given by F. A. Walter (1800). But by far the most complete and classical book was that published by Rayer which appeared in 1839–1841; it marked a very decided and complete advance in the study of disease of the kidney, included not only all that was then known in respect to renal disease, but was in itself a most perfect exposition of the subject. Rayer explained clearly the surgical treatment; he considered the question of nephrotomy, and in his description he observed that calculi do not form in the substance of the kidney but in the pelvis and calices. As to removal of the kidney, he summed up the opinion of the time in the following sentence: "Ce serait folie de tenter chez l'homme atteint de calculs une telle opération." The proposal to incise a kidney for calculus where there is no swelling in the loin and the patient is otherwise in good ealth is not to be thought of. Rayer's opinions on this subject undoubtedly exercised for many years a strong influence against all operations upon the kidney.

Within the next 30 years two important transformations occurred, bringing with them a complete revolution in surgical practice. Operations which formerly had been looked upon as chimerical were now brought within the sphere of practical surgery. In Edinburgh Simpson had introduced the employment of chloroform as a general anæsthetic (1848), and in Glasgow Lister (1870) had worked out his theory of sepsis, introduced the antiseptic treatment of wounds, and began to preach his simple gospel of surgical cleanliness. In the first half of the last century the only operations which a surgeon could undertake were such as could be conducted with great rapidity; the best surgeon was he who had the strongest will and the quickest fingers. Elaborate operations followed step by step could not be attempted and minute dissections were impossible, consequently diseases of deep-seated organs, such as the kidney, were left severely alone. Simpson's energy in advocating the use of Liebig's discovery (1831) transformed all this. At first gradually the surgeon stretched out his hand, as the hand of a blind man, frequently to be advanced and again drawn back; the touch was tainted. Now, seeing clearly by the light of the truth taught by Lister, he has brought within his domain all organs. He can now do, even for diagnostic purposes only, operations unthought of when the last century was young.

In this country Mr. (now Sir Thomas) Smith in 1869 (three months prior to Simon's first nephrectomy) was the first to suggest seriously the operation of cutting down upon the kidney for the removal of a calculus, in a paper read before the Royal Medical and Chirurgical Society of London,[2] and at the end of his paper he suggests, what Mr. John Douglas attempted in Edinburgh 130 years earlier, "that before attempting the operation on the living, the possibility of removing renal calculi by nephrotomy should first be decided by operation on the body of one who has died with a stone in the kidney." Sir Thomas Smith carefully described a method of exposing the kidney by lumbar incision and recommended the operation for diagnostic purposes and for the removal of stone. The paper appeared at a very opportune moment and exercised a strong influence on the minds of surgeons. In the same year Annandale and Spencer Wells also wrote in favour of nephrotomy.

NEPHRECTOMY.

Although Sinibaldus (A.D. 1650) exhorted the French and Roman chirurgions "to make the experiment upon brutes that they might with greater dexterity and readiness perform it (nephrectomy) upon man," Zambeccarius (A.D. 1670) was the first to experiment upon animals, and along with Roonhuyzen (A.D. 1672) was enabled to demonstrate that one kidney could be removed without necessarily producing death; he was also the first to contemplate the operation of nephrectomy upon man. As already indicated his example was followed by Blancard, Blundell, and others. Rayer condemned the operation, and prior to the introduction of anæsthetics such a prolonged operation was practically impossible. The introduction of anæsthetics has permitted the development of surgery. In the olden days all operations required to be performed with great speed, so that one of the first considerations in an operation was rapidity. Nephrectomy from its very nature could not be performed otherwise than with deliberation and care, but now all reason for haste has been removed and the surgeon can slowly and confidently proceed with his work, knowing that he is not inflicting pain and that the main object is to have the operation well done and free from septic infection. Before the introduction of the methods of Lister the instruments and the hands of the surgeon often carried into the wound septic material and not infrequently the dressings which were applied made matters worse. Now all this is changed; the surgeon has learned to be clean in the highest sense of the term and everything around him is kept free from possible contamination; but besides these two great factors there have been other circumstances which have gradually led up to the development of renal surgery as we now know it. The immediately collateral branches of surgery were, about this time, undergoing great and rapid changes.

The progress of abdominal surgery has not been in an even line of advance during the last 150 or 200 years. One department has moved forward while another has stood still or has even gone back. There is little doubt that the surgery of the abdomen was better known from 200 to 150 years ago than it was at 60 years from the present time. A great amount of good work was lost and neglected. Roussetus (A.D. 1581) advised drainage by a cannula, so also did Heister in the middle of the eighteenth century, and he recommended washing out the abdomen with solutions. In many of the books of that time—for example, Dionis—minute and careful directions are to be found regarding the suturing of wounds of the abdominal wall and the treatment of the peritoneum.

In the last century probably no operation has had more influence in encouraging the advance of abdominal surgery than ovariotomy. At the beginning of the nineteenth century operations such as ovariotomy had been attempted only, but were condemned by the leaders in surgery, and it was not until 1842 that Charles Clay of Manchester placed ovariotomy on a sure foundation. In 1858 Spencer Wells in London, and in 1862 Thomas Keith in Edinburgh, began to practise ovariotomy, and in 1868 Peaslee developed the operation in America. The rapid increase in the number of ovariotomies lead to a few mistakes in diagnosis and as a consequence the kidney was removed from the living body by Peaslee, Esmarch, Speigelberg, and Walcott, in the belief that the disease was ovarian, with the exception of the case of the last mentioned surgeon which was thought to be one of cyst of the liver. Wells, after removing an ovarian cyst, found that in addition to the tumour he had taken away a healthy kidney. About this time Simon of Heidelberg, and Czerny, by their successful operations for relief or cure of disease of the kidney, gave an enormous impetus to systematic operative interference and established the claim of renal surgery beyond dispute. Simon's article must be regarded as the starting point in any discussion on the subject of renal surgery, and a consideration of the facts which induced him to resort to extirpation of the kidney for the relief of disease must always be of special interest to the surgeon. A distressing case of urinary fistula, resulting from ovariotomy, having

[1] Parts I. and II. were published in THE LANCET of March 2nd (p. 649) and 9th (p. 726), 1901, respectively.
[2] Transactions of the Royal Medical and Chirurgical Society of London, vol. li., p. 211.

come under his care, and all resources having failed to relieve the sufferings of the patient, the advisability of extirpating the kidney suggested itself. Before, however, such an operation could be resorted to it was necessary to ascertain whether or not it was consistent with life suddenly to withdraw the function of one kidney and to throw the entire labour upon the other organ. Pathological records afforded him many instances in which one kidney had been gradually rendered functionally useless by *slowly progressing disease*, and where compensatory hypertrophy had gradually become established without disturbance to the economy. No doubt he was aware of the experiments of Prévost and Dumas and of Claude Bernard, if not of the much earlier observations of Zambeccarius, Blancard, and Blundell. But he had to satisfy himself whether or not *sudden* withdrawal of one kidney would be tolerated and to prove it by experiment upon animals. For the purpose of clearing up this point he performed 15 nephrectomies upon dogs and found (1) that the greatest risk of death was from peritonitis; (2) that primary and secondary hæmorrhages were less to be feared than he had anticipated; (3) that pyæmia and embolism were not met with in a single case; (4) that the effect upon the elimination of the renal excreta was not such as to lead to symptoms of uræmia; (5) that no albuminuria or hypertrophy of the heart resulted from the operation; and (6) that the remaining healthy kidney within a short time increased in size and was soon competent to perform the double duty suddenly imposed upon it. These results encouraged Professor Simon to perform the first nephrectomy designed upon definite physiological principles.

Simon's experiments were undoubtedly a severe test of the ability of the remaining kidney, but it must be remembered that such operations upon healthy animals are not exactly equivalent to what we have to deal with in man, where the kidney to be removed is always diseased and the condition of its neighbour is not in every case able to be ascertained. On the other hand, in many instances in the human subject, the opposite kidney from the one to be removed has undergone compensatory hypertrophy and so improved its functional activity and capability. Besides the question of the elimination of the renal excreta after nephrectomy there were other facts which required to be demonstrated by the experiments. In ligature of the renal artery, close to its origin from the aorta, was the ligature to be depended upon to control the blood-pressure, and when it became absorbed was the thrombus liable to be disturbed? Might not thrombi in the renal veins become detached and give rise to embolisms elsewhere? Could the deep wound heal without contaminating the peritoneal cavity? These questions having been settled by experiment (in April, 1869) Simon cut down upon the kidney of Margaretha Kleb, aged 46 years, and removed it. He carried out the operation in the most careful way, and the brilliant result he obtained spurred men to higher achievements.

Simon had no imitators for nearly a year. In April, 1870, Parker[3] removed a kidney from a female patient, aged 12 years, who suffered from hydronephrosis, but the patient died from shock on the day following. In December of the same year in America Gilmore[4] performed a successful nephrectomy for painful moveable kidney in a woman, aged 39 years, who was five months pregnant and who recovered without any mishap. The year following Simon's second nephrectomy and von Bruns's first operation were performed, and in March, 1871, von Bruns[5] in a case of lumbar urinary fistula with calculous pyonephrosis excised the diseased kidney. The patient, a German officer, died in 10 hours from collapse, and at the post-mortem examination the remaining kidney was shown to be occupied by multiple abscesses. In August, 1871, Simon performed the first nephrectomy for renal calculus pure and simple. The patient, a woman, aged 30 years, a resident of Savannah, Georgia, in the United States, consulted Simon in Heidelberg, and had the affected kidney removed. Simon confesses that he undertook the operation with a great sense of responsibility and much anxiety. Up to this time all authorities had condemned nephrectomy for renal stone, and the writings of Rayer had still a strong influence with the profession against the operation. It had not been attempted upon the human subject. The patient made a good immediate recovery from the operation, but died on the thirty-first day from septic infection of the wound. All went well till the twenty-first day; then the patient was convalescent, but as the dressings were being changed in the presence of Simon he was induced to explore the wound with his finger without any precautions as to disinfection. In a few hours the patient had a rigor, the temperature rose, and general sepsis ensued involving septic peritonitis and pleurisy. In 1876 Simon died, without again performing a nephrectomy, but he had already laid the foundation of renal surgery, and when the influence of Lister's teaching became generally felt and appreciated this department of surgery made rapid strides. During the first 10 years—that is to say, from 1870 to 1879—57 renal operations were performed with a mortality of 29, or a little over 50 per cent.

TABLE I.—*Renal Operations from 1870 to 1879.*

—	Nephrotomies.	Deaths.	Nephrolithotomies.	Deaths.	Nephrectomies.	Deaths.
For hydronephrosis and cystic disease	3	—	—	—	7	5
For septic disease without calculus	11	4	—	—	2	1
For septic disease with calculus	—	—	11	6	6	4
For tuberculosis	4	1	—	—	1	1
For tumours	—	—	—	—	12	7
—	18	5	11	6	28	18

During the next five years, from 1880 to 1884, 219 operations were performed, two-thirds of which were nephrectomies. Indeed, at this period nephrectomy was resorted to very freely and was adopted as the only remedy for conditions which are now treated by less heroic measures. The mortality all over was 71, or a little under 24 per cent.—a decrease of 50 per cent. on the mortality of the previous 10 years.

TABLE II.—*Renal Operations from 1880 to 1884.*

—	Nephrotomies.	Deaths.	Nephrolithotomies.	Deaths.	Nephrectomies.	Deaths.
For hydronephrosis and cystic disease	9	—	—	—	21	7
For septic disease without calculus	23	5	—	—	25	10
For septic disease with calculus	—	—	19	5	35	12
For calculus	—	—	17	—	—	—
For tuberculosis	8	2	—	—	23	9
For tumours	—	—	—	—	39	21
—	40	7	36	5	143	59

These statistics serve as a basis to illustrate the progress of renal surgery during the first 15 years of its growth. It will be very interesting to know the advancement that has taken place in the 15 years terminating with the end of the century. The writer has already endeavoured to collect the statistics of cases published up to the end of 1900.

In May, 1872, two nephrectomies were performed, one published by Peters[6] and the other by Durham.[7] The former case was the first nephrectomy for a tuberculous nephritis. The vesiculæ seminales and ureters were also involved, and the patient died from hæmorrhage in 65 hours. Andrew and Callender[8] have recorded a case of a lumbar nephro-lithotomy in a patient suffering from calculous pyelitis, and Dawson[9] gives an account of a similar case in which he performed an abdominal nephro-lithotomy with a fatal result.

These statistics are far from encouraging, but in the following year (1873) four successful cases were brought

[3] Newman: Lectures on Surgical Diseases of the Kidney, p. 158.
[4] Harris's Statistics.
[5] Simon: Chirurgie der Nieren, 1876, Band ii., p. 54
[6] New York Medical Journal, November, 1872.
[7] Brit. Med. Jour., vol. i., 1872.
[8] St. Bartholomew's Hospital Reports, vol. ix., p. 220.
[9] New York Medical Journal, January, 1873.

forward—three nephrectomies and one nephro-lithotomy. In March, 1873, Marvand [10] performed a lumbar nephrectomy for prolapse of the right kidney through a lumbar wound. The patient had a rapid recovery and left the hospital 21 days after the operation. Three months later Brandt [11] performed the same operation in a similar case with an equally good result. In October W. Ingalls [12] of Boston performed a lumbar nephro-lithotomy in a case of calculous pyelitis with a good result, and in December Campbell [13] of Dundee successfully excised a cystic kidney by abdominal nephrectomy.

Of the next five nephrectomies, all performed for malignant disease, three of the patients died and two recovered. G. Kocher [14] of Bern operated on two cases of sarcoma of the kidney by abdominal nephrectomy, both of which were fatal; Langenbuch [15] performed a successful lumbar nephrectomy for sarcoma; and Mr. T. R. Jessop [16] of Leeds successfully excised through a lumbar incision the first kidney removed in this country for malignant disease. G. Hueter [17] also removed a sarcomatous kidney, but the patient died from hæmorrhage during the operation. The new ideas which had advanced in Germany, Great Britain, and America did not receive ready acceptance in France and Italy. It was not until 1880 that M. Léon Le Fort [18] performed nephrectomy for the first time in France, in a case of lumbar urinary fistula the result of a wound which divided the ureter. The patient died from shock 24 hours after the operation.

The great bulk of the early operations were nephrectomies; naturally the operation was resorted to only in extreme cases, and consequently the mortality was very high. At the end of 1879, excluding cases of erroneous diagnosis, 28 nephrectomies had been recorded—seven for hydronephrosis or cystic disease, with five deaths; two for pyonephrosis without calculus, with one death; six for calculous pyonephrosis, with four deaths; one fatal case for tuberculous disease; and 12 operations for malignant disease, with seven deaths. 18 nephrotomies were performed with five deaths, and 11 nephro-lithotomies for calculous pyonephrosis with six deaths.

Whether a kidney containing a calculus should be excised or not must depend upon the conditions in the individual case. It may be admitted that in cases where the organ has been destroyed by septic disease, and a considerable pyonephrosis has resulted, nothing short of excision will cure the patient; but when a stone is known to be present at a time prior to pyogenic infection the organ may be exposed and the calculus removed—to perform nephrectomy in such a case is not now justifiable. But up to 1880 no attempt had been made to remove a stone from an otherwise healthy kidney, with the exception of the cases recorded above, and these cannot be placed alongside the operation carefully contrived and carried out by Mr. Henry Morris of London in February of that year. He was induced to undertake the operation by the extreme severity and persistency of the symptoms in the case under his care, and he demonstrated for the first time that a calculus could be removed by cutting freely into the healthy renal parenchyma. This was a very distinct advance; it enabled the stone to be removed at an early stage in the disease before sepsis set in and the kidney was destroyed. The surgeon, instead of being contented by relieving the patient of a renal stone which has given rise to an abscess in the kidney or found its way to the surface by suppuration, anticipates nature and removes the calculus before it has produced destructive changes in the renal tissue. In this way not only is the kidney saved and the patient relieved, but by operating early in the course of the malady the immediate dangers formerly associated with the operation are reduced to a minimum.

Le Dentu [19] performed nephrolithotomy in France in October of the same year, and in Britain in the year following Mr. Marcus Beck [20] and Mr. H. T. Butlin [21] successfully removed calculi from an otherwise healthy kidney, and Dr. John Duncan [22] explored a kidney but failed to find the stone. A. E. Barker, Howe, Symonds, Anderson, K. Thornton, and others in this country took up the operation actively and in a few years the old fear of incising the renal parenchyma disappeared for ever.

(To be continued.)

[10] Recueil de Mémoires de Médecins Militaires, 1874.
[11] Wiener Medicinische Wochenschrift, 1873, No. 48 and No. 49.
[12] Newman: Lectures on Surgical Diseases of the Kidney, p. 262.
[13] Edinburgh Medical Journal, 1874, p. 36.
[14] Deutsche Zeitschrift für Chirurgie, Band ix., S. 312.
[15] Berliner Klinische Wochenschrift 1877, No. 34.
[16] THE LANCET, June 16th, 1877, p. 889.
[17] Deutsche Zeitschrift für Chirurgie, Band ix., p. 527.
[18] Gazette des Hôpitaux, 1880, No. 138.
[19] Brodeur, p. 348.
[20] Brit. Med. Jour., vol. ii., 1885.
[21] Transactions of the Royal Medical and Chirurgical Society, vol. xv., p. 113.

THE ROYAL COMMISSION ON SOUTH AFRICAN HOSPITALS.

(Continued from p. 810.)

V.

IN a report in which continuity of arrangement has to be maintained it is unavoidable to have some overlapping, and there are consequently occasional references from one to other parts of the report of the Royal Commission on South African Hospitals which make it somewhat difficult of analysis. But a perusal of the summary which we have already published—with which we may assume our readers to be acquainted and to which they can refer—will make it easy for them to follow us in our comments.

We may take the following facts as an evidence of our unpreparedness for a campaign such as that which has actually occurred in South Africa. At the outbreak of the war there were only available staff and equipment for two army corps, and even the two army corps which were first employed in the war could only be staffed and equipped with difficulty. For the sixth division, according to the evidence of Major Bedford, R.A.M.C., the reservists had to be used and a mixed *personnel* employed. After providing for the first two army corps there existed only a reserve equipment sufficient to furnish one general and two stationary hospitals (page 8). It is easy to be wise after the event, but as a matter of fact no one foresaw at the beginning of the war that a force enormously larger than two army corps, in addition to the British troops already in South Africa, would be required. In other ways, too, the army corps unit allowance of field hospitals was reduced from nine or ten to six, and these hospitals in South Africa were ten short of the proper number, which shortage was never made up and caused a strain throughout the campaign. As regards the small reserve of hospital equipment, while seeing some force in the objection to keeping up permanently a large stock owing to the fear of much of it becoming obsolete, we concur with the Commission in thinking that this explanation is not wholly satisfactory. The total number of troops landed between September, 1899, and July, 1900, did not fall short of the aggregate of 230,000 men. At the time of the greatest pressure, which occurred at the end of the month of March, 1900, the total force then engaged being 207,000 men, there were in the country some 800 medical officers (including civil surgeons), 6000 hospital subordinates, and 800 nurses (page 10). When the enormous extent of country and the rapid and unexpected movements of the troops are taken into consideration, together with the extreme difficulties of transport and the necessity that such transport as was available should be used mainly with the view of meeting the necessities of the fighting force rather than for rendering medical aid, it must be admitted that the task imposed upon the medical service was herculean. Also the amount of medical aid available in the country generally was not distributed, it must be remembered, according to the needs of particular localities. These difficulties, which had to be more or less encountered generally, became most conspicuous at Bloemfontein during the months of April and May. Notwithstanding that the services of civil surgeons in the United Kingdom were available and largely utilised it took time to get them out to South Africa and the supply of local practitioners at the Cape was very limited. In opening out fresh hospitals and utilising these surgeons it was found essential to have a certain number of medical officers of the army employed for reasons which are uncommonly well put by Mr. Bowlby, senior surgeon in charge of the Portland Hospital, and set forth at page 9 of the report. The difficulty of supplying properly trained hospital orderlies was much greater than that of finding civil surgeons and, in fact, was never really overcome.

[22] Newman: Lectures on the Surgery of the Kidney, p. 258.

As regards the officers of the Royal Army Medical Corps, they could not be supplied, for the simple reason that they were not to be had in anything like sufficient numbers. It is notorious that the Army Medical Service has for years past been an unpopular one with the medical schools and hospitals. Some ascribe the cause to one thing—such as the abolition of the regimental system—some to another, or to a multiplicity of causes; but the fact remains that the service fails to draw the number of candidates required for its needs even in times of peace, to say nothing of war; and, what is more, even if it did draw them in abundance it would be impossible for financial reasons alone to maintain a permanent medical establishment of sufficient strength to meet the requirements of any big modern war. Recourse must, perforce, be had, and very largely had, to other expedients. The strength of the Royal Army Medical Corps must in any case be largely increased in the near future. But what should now be considered is the framing of some far more widely based and comprehensive scheme, which shall include not only the regular medical service as an integral part of the army, but the medical services of the militia, volunteers, and colonial forces, supplemented by as much medical aid as is needful in time of war from the staff of our civil hospitals and the medical profession generally. What seems to be wanted under the new and altered conditions of the British Empire is a scheme of organisation which would result in the practical formation of an Imperial Medical Service. Can such a scheme of medical aid be devised and organised on lines which will commend themselves to the understanding, patriotic sympathy, and favourable consideration of the whole medical profession at home and abroad? It surely should not pass the wit of man to devise something of the kind and we believe that to some extent the lines upon which it can be done have been indicated by the system adopted in Germany.

With regard to the complaints concerning medical officers of the Royal Army Medical Corps the report deals with the matter fairly and discriminately. As a whole their conduct and capacity are stated to deserve great praise. The number of those who have died during the war is unfortunately large. With the exception of a few instances the charges levelled against them were unfounded. The Commissioners in this connexion allude to the unattractiveness and under manning of the corps and the insufficient opportunities for leave and study in order to keep abreast with recent advances in the practice of medicine and surgery and other matters. The Commissioners recommend that immediate steps should be taken at the end of the war to increase the permanent staff of the Royal Army Medical Corps, and to provide for its speedy enlargement in times of great wars. Inducements must be offered to insure the continuous supply of sufficient men of good professional attainment, and means must be adopted for keeping them *au courant* with the results of medical progress so as to secure a high standard of professional efficiency (page 12). The Commissioners, in dealing with complaints that officers of the Royal Army Medical Corps are too military in their habits and conduct, contrast the great differences which exist between the nature and variety of the duties in civil and army life and refer to the excellent evidence of Mr. Bowlby and of Colonel Macnamara. Admitting to the full this distinction and the necessity for military rank on the part of officers of the Royal Army Medical Corps, they nevertheless think that there has been a tendency on the part of some of the officers, and still more on the part of the non-commissioned officers and men of the corps, to treat hospitals as if they were barracks and the occupants too much as soldiers and too little as patients (page 12). The report dwells upon the immense amount of work that had to be discharged by the principal medical officer and the head quarter medical staff in South Africa and the difficulties which they had to encounter—far greater than those to be met with in any ordinary campaign.

In South Africa the territory occupied by the troops is vast. In this territory numerous armies or bodies of men have been continuously and rapidly changing their positions. Often the army movements have been extremely sudden and no notice of them could be given beforehand to the medical staff. The medical arrangements for all these armies and troops had to be considered and provided for. In addition the medical staff had to consider and provide for the placing and shifting of the various hospitals on the lines of communication and the establishment of the hospitals at the base and the supply and care and transport of all the numerous requisites for sick and wounded men throughout the country occupied by our soldiers.

Of course, judging from events, we know that mistakes have been made by the staff in the course of this war and that things have not been foreseen which might have been. We have pointed out in dealing with complaints in Part III. instances of such mistakes and oversights. But taking their work as a whole and considering the difficulties they have had to contend with we think that the principal medical officer and his head staff have done excellent work. They have never spared themselves and have shown a great devotion to their duty and every desire to make due provision for the care of the sick and wounded, and when their conduct is fairly judged we think that they deserve great praise. The organisation of the field and stationary and base hospitals for the colonial troops, the militia, and volunteers fell upon the medical staff in South Africa, and in our judgment they met the difficulties presented to them with singular ability and success (page 13).

We may pass over much of the remainder of Part II. of the report, simply contenting ourselves with a few comments as we proceed until we come to the subject of sanitation. The report states that the civil surgeons employed during the campaign have, as a body, done their duty extremely well and, as a rule, worked well with the Royal Army Medical Corps. As a whole the orderlies discharged their duties satisfactorily, notwithstanding that there have been numerous complaints against them, some of which were apparently well founded. Many of the orderlies showed great devotion. Whilst upon this subject we may say that a better class of men, physically and socially, is required. Orderlies are insufficiently paid, and their training should be improved in a medical and not in a military direction. They are often not physically strong enough for their duties and it must be borne in mind, a fact which seems to have been forgotten, that in lowering the physical standard for the men of the corps another and less desirable stratum of the population is tapped. It is not so much military smartness as respectability, hospital training, intelligence, personal cleanliness, and skill in the execution of their ward duties as sick-attendants that are required from the men of this corps.

Of the private hospitals there is little or nothing said in the report that is not favourable. The differences and points of contrast between civil and military hospitals are pointed out. The numerous private hospitals were, it need scarcely be said, a very material aid in this war, and the army medical service is entirely in accord with the nation in their high appreciation of the work these hospitals did. Some of them were fitted out with an elaboration of detail, convenience, and comfort that left little or nothing to be desired It is unreasonable to anticipate, however, that the Government can compete and vie with private enterprise and philanthropic effort in this respect, and we consider that so long as war is war it is vain to expect military hospitals to be furnished on a splendid scale like that of the Yeomanry hospital, for example. Nor is it necessary or desirable. We are not in accord with Mr. Murray Guthrie, M.P. (*vide* Nos. 2307, 2308, 2482, and 2483, Minutes of Evidence). His evidence seems to us misleading in character. With reference to the remarks of Mr. Burdett-Coutts, M.P., and Mr. Murray Guthrie, M.P., about the death-rate being less in civil than in military hospitals, at page 15 of the report an attempt is made on a limited scale to institute a comparison between the death-rates of private hospitals and military hospitals. A return is furnished by Surgeon-General W. D. Wilson of the percentage ratios of deaths from general causes and from enteric fever in five hospitals—two military and three civil. The result of the comparison is, on the whole, favourable to the military hospitals, but such comparisons are, for various reasons, often untrustworthy and misleading. Touching charitable gifts the Commissioners make the practical suggestion that in future wars it would be advisable to have them all received and dealt with by one organised body. There will never be any absence of supplies of comforts of all kinds for our soldiers in time of war. They will be forthcoming in embarrassing abundance when the national feelings of patriotism and philanthropy are once roused, but great difficulty will attend their distribution. We require, indeed, to have our whole charitable system and organisation in time of war inquired into with a view to see whether its machinery can not be remodelled and placed on a simpler, more effective, and economical basis. Special praise is given to the ambulance trains so largely used in the campaign. The Commissioners speak highly of the state in which they found the hospitals in South Africa at the time of their visit and express an opinion that the institutions were quite able to cope with an outbreak of enteric fever or other disease should it occur (page 16). This condition will be attributed by some to Mr. Burdett-Coutts's strictures, and by others simply to the fact that the temporary state of extreme strain and pressure which undoubtedly existed when he saw them had passed away. No doubt both factors may have exercised an influence, but, in our opinion, the latter was the main one.

We are very glad to notice that the report decisively affirms that the head of a military hospital should be a member of the Royal Army Medical Corps, and we fully concur in what the Commissioners have to say on the subject and with the tenour of the evidence of military officers generally thereon.

With regard to what is vaguely known, but nevertheless pretty well understood, by the term "red tape," comprehending returns, records, difficulties, and delays in respect of the requisitioning of necessaries, &c. (p. 17), the report contains much that is very pertinent and sensible. The House of Commons must, we fear, be held to be responsible (directly and indirectly) for a good deal of laborious clerical work so long as it is open to Members to call for returns on every conceivable subject. That a certain number of official records and returns of various kinds must, under any system, be maintained is unquestionable, but the amount of clerical labour in the service generally is one of the worries of army life, and, we think, of army medical life in particular, whether in peace or war. It diverts too much of the medical officer's time and attention from far more important duties and makes him too much dependent on his soldier clerks. The subject requires to be very carefully gone into with the view of seeing whether clerical labour could not be materially reduced and simplified. To take one example by way of illustration, the medical record of cases should be governed by their severity or interest and not by the mere fact that something extra in the way of diet had been ordered. It certainly looks as if the design were not at all in the interest of the patient, but to restrain the hand of the prescribing officer by giving him extra and unnecessary trouble.

As regards the delay and difficulties which arise from medical officers having to get their supplies from the Army Service Corps the Commissioners make a highly important suggestion, and it is this :—

> Whether this can to any and what extent be avoided with practical advantage by permitting the Royal Army Medical Corps to have sole possession of, and control over, all hospital necessaries (other than ordinary food and ordinary clothing), including such things as beds, mattresses, and hospital clothing, is a question which should be considered by the committee which we have already mentioned.

There are many medical officers of experience who regard this as the root of the whole matter and consider that until the army medical service is self-contained and complete in itself in every respect, so as to render it independent of supply departments, there will and must be recurring failures. This subject, together with that of transport, is regarded by them as one of primary importance, but the consideration of it will more fitly and conveniently arise when we come to consider that part of the report devoted to "suggestions with a view to remedying defects."

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on March 14th, Sir WILLIAM MACCORMAC, Bart., K.C.V.O., the President, being in the chair.

The SECRETARY reported the death, on Feb. 2nd (Jan. 20th O.S.), of Professor Victor Pachoutine, Hon. F.R.C.S. Eng., President of the Imperial Military Academy of Medicine at St. Petersburg; and the PRESIDENT stated that he had written to Madame Pachoutine and to the Imperial Military Academy of Medicine to express the sympathy and condolence of the Council.

The PRESIDENT nominated Dr. S. Monckton Copeman and Dr. Christopher Childs for appointment by the Council as the delegates of the College to the Congress of the Royal Institute of Public Health to be held at Eastbourne in July next.

The PRESIDENT reported that, in pursuance of the provisions of the Bradshaw Bequest, he had chosen Mr. T. R Jessop as Bradshaw Lecturer for the ensuing collegiate year.

The PRESIDENT reported the delivery of the Hunterian Oration by Mr. N. C. Macnamara, and the best thanks of the Council were given to Mr. Macnamara for his oration and he was requested to publish it.

The PRESIDENT and VICE-PRESIDENTS reported that, subject to the approval of the Charity Commissioners, they had accepted a design from Mr. Allan Wyon for dies for the Cartwright medal.

A report from the Board of Examiners in Dental Surgery was read; it was referred to a committee of the Council to consider. The report contained suggestions for alterations in the curriculum and in the examinations. Memorials were received from the staff of the Victoria Dental Hospital of Manchester and from the staff of the Liverpool Dental Hospital referring to the proposed changes.

A letter was read from Mr. George Brown and Dr. G. Danford Thomas specifying the points in regard to which they are of opinion that the Medical Acts require amendment. This was in answer to a letter from the Council in reference to a resolution carried at the annual meeting of Fellows and Members.

The following resolution was carried unanimously, and an illuminated album containing it, with the signatures of the Council, was presented to Mr. Edward Trimmer, M.A., the secretary, who is retiring after 42 years' service:—

> On the occasion of the retirement of Mr. Edward Trimmer from the office of secretary to the Royal College of Surgeons of England the Council gladly avail themselves of the opportunity to express to him their very high appreciation of his services to the College and their warm regard for him personally.
>
> The powers of organisation displayed by Mr. Trimmer during the time the arrangements for the examinations were under his supervision, his experience in all matters relating to procedure, his thorough mastery of the charters and by-laws, and his exceptional knowledge of the history of the College, have enabled him to render to the College services of the greatest value, and the Council cannot but feel that they are losing an officer who has always maintained the high traditions of the College and successfully striven to advance its interests.
>
> His unfailing courtesy, genial manner, and sound judgment have justly caused him to be highly respected, and whilst the Council express the hope that in his retirement Mr. Trimmer will enjoy many years of health and happiness, they assure him that neither he nor his services to the College will be forgotten by those who have had the pleasure of associating with him.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Kettering Urban District.—Mr. J. Winter Dryland expresses the opinion that in so far as this district is concerned the time is not yet ripe even for the voluntary notification of phthisis; but he reports that a veterinary inspector has been appointed to inspect the cows supplying milk to the town. After deaths from phthisis the invaded house is carefully disinfected and handbills are distributed drawing attention to the manner in which the disease is spread.

Borough of Kensington.—Dr. T. Orme Dudfield's last monthly report contains a summary of the vital statistics for 1900. The estimated population of the borough at the middle of the year in question was 173,000. The birth-rate was 20·7 per 1000 (as contrasted with a rate of 33·1 in 1868) and the general death-rate was 15·6 per 1000. The infantile mortality was 179 per 1000 births, as compared with 159 per 1000 births for London as a whole. This high rate was in large part due to an excessive infantile mortality, 290 per 1000 births, in the north-west district.

Maldon Rural District.—The southern part of this district has been fortunate in being provided during 1900 with an adequate supply of pure water drawn from springs thrown out from the gravel by the underlying London clay. The greater part of this district seems now, thanks to the energetic action of Dr. Thresh, to be well supplied with water. The Maldon Rural District Council during 1900 applied to the county council for sanction to adopt Part III. of the Housing of the Working Classes Act, 1890. The application was granted, but the committee of the county council which conducted the inquiry point out that most of the cottages attached to the farms are let at a much too low rental, the labourers accepting this substitute for a low weekly wage. It was urged by some of the witnesses that 1*s* 6*d*. a week was all that could be paid by the labourers, but the county councillors observe in their report that no decent cottages can be built for a rental such as this. If the actual value of the cottage was charged to the labourers there might be some inducement to private enterprise, but as it is there is none. Nevertheless, the county councillors granted the application.

Whitechapel Sanitary District.—The formation of the Metropolitan Borough of Stepney has put an end to the district of Whitechapel as a separate sanitary unit, and Mr. Joseph Loane, the medical officer of health, finds himself among those officers whose posts are abolished from March 25th next. In this, his last report, Mr. Loane furnishes a short retrospect of the work done in Whitechapel and of the development of the sanitary staff since he took office 18 years ago. Overcrowding has, Mr. Loane tells us, been the worst problem which he has had to face, and in his opinion the attempt to remove the workers to the suburbs will never succeed unless and until they are able to take their workshops and their factories with them. He thinks that efforts should be made to undersell the "house-sweaters" by erecting good healthy dwellings for the people at rents not exceeding 3*s.* per room per week, and in his view the aid of wealthy philanthropists must be called in. But what will the political economists say to this?

Kingston-on-Thames Urban District.—The Thames Conservancy has apparently expressed its dissatisfaction with the effluent turned out from the Kingston sewage works and the corporation is concerning itself with the problem of procuring a more satisfactory effluent. With this object in view the medical officer of health, Mr. H. Beale Collins, has visited many experimental works and has reported thereon to the corporation. As regards the control of tuberculosis the medical officer of health advises that the example of neighbouring authorities should be followed and that all cows in the Kingston district should be tested with tuberculin by a veterinary inspector. Much milk comes into Kingston from outside districts, and Mr. Collins protests against the careless method of transport of such milk and he draws attention to the unprotected manner in which the milk churns are sent by train. Certainly anyone who travels much by train has ample opportunities of seeing illustrations of this carelessness. The Kingston Corporation is enjoined by its medical officer of health to take a lesson from the successful Danes in the matter of dairy produce.

Carlisle Urban District.—Mr. William Brown, the medical officer of health of this city, reports that the public slaughter-houses have been a great success. Before their erection slaughtering was carried on in 27 private slaughter-houses under very unsatisfactory conditions. In the five years preceding the erection of the public slaughter-houses only one case of tuberculosis came to the notice of the sanitary authority. For the last five years an average of 53 tuberculous carcasses have been examined. The veterinary inspection of dairy cattle was carried on during 1900, and the diseases discovered were tuberculosis, acute inflammation of the udder, congestion of the lungs, hæmaturia, and cow-pox. Tuberculosis in the human subject is compulsorily notifiable in Carlisle, and notification during 1900 brought to light 18 cases of phthisis and three of tabes mesenterica, but Mr. Brown does not tell us what action was taken as a result of such information.

Worcester County District.—In preparation for the "Consumption Conference" which was held at Worcester on Feb 9th, Mr. G. H. Fosbroke, the county medical officer of health, prepared a useful map and some charts, illustrative of the behaviour of phthisis in the county. The charts show a steady fall since 1861, and it is gratifying to learn that Worcestershire, as compared with other counties, has a very low death-rate from phthisis, in fact, it shares the honour of least phthisis mortality with Staffordshire and Leicestershire.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6822 births and 4280 deaths were registered during the week ending March 16th. The annual rate of mortality in these towns, which had been 21·5 and 19·6 per 1000 in the two preceding weeks, further declined to 18·9 last week. In London the death-rate was 17·6 per 1000, while it averaged 19·8 in the 32 large provincial towns. The lowest death-rates in these towns were 13·8 in West Ham, 14·3 in Burnley, 14·6 in Brighton and in Swansea, 14·7 in Bolton and in Derby; the highest rates were 24·8 in Oldham, 26·6 in Plymouth, 28·2 in Liverpool, and 29·0 in Sunderland. The 4280 deaths in these towns included 370 which were referred to the principal zymotic diseases, against 395 and 376 in the two preceding weeks; of these 112 resulted from whooping-cough, 105 from measles, 66 from diphtheria, 30 from scarlet fever, 29 from diarrhœal diseases, and 28 from "fever" (principally enteric). No death from any of these diseases occurred either in Brighton or in Swansea; in the other towns they caused the lowest death-rates in Portsmouth, Plymouth, Norwich, Huddersfield, and Bradford; and the highest rates in Bristol, Derby, Liverpool, Salford, and Sunderland. The greatest proportional mortality from measles occurred in Liverpool, Leeds, and Sunderland, and from whooping-cough in Bristol, Cardiff, Derby, Birkenhead, Halifax, and Sunderland. The mortality from scarlet fever and from "fever" showed no marked excess in any of the towns. The 66 deaths from diphtheria included 30 in London, six in Sheffield, four in Leeds, four in Salford, four in Liverpool, and four in Bristol. No fatal case of small-pox was registered last week in any of the 33 towns, and only one small-pox patient remained under treatment on Saturday last, March 16th, in the Metropolitan Asylums hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1652, against numbers decreasing from 2535 to 1746 on the 11 preceding Saturdays; 130 new cases were admitted during the week, against 162, 185, and 140 in the three preceding weeks. Influenza was certified as the primary cause of 30 deaths in London last week, as compared with 32, 35, and 39 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 501 and 463 in the two preceding weeks, further declined last week to 394, and were 124 below the corrected average. The causes of 63, or 1·5 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Manchester, Bradford, Leeds, and in nine other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Sheffield, Hull, and Sunderland.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 24·5 and 23·4 per 1000 in the two preceding weeks, further declined to 22·7 per 1000 during the week ending March 16th, but was 3·8 per 1000 in excess of the mean rate during the same period in the 33 large English towns. Among these Scotch towns the death-rates ranged from 11·1 in Leith, and 13·4 in Perth, to 24·4 in Glasgow and 25·4 in Edinburgh. The 713 deaths in these towns included 40 which were referred to whooping-cough, 24 to small-pox, 10 to measles, seven to diphtheria, six to "fever," six to diarrhœa, and five to scarlet fever. In all, 98 deaths resulted from these principal zymotic diseases last week, against 122 and 113 in the two preceding weeks. These 98 deaths were equal to an annual rate of 3·1 per 1000, which was 1·5 per 1000 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 67 and 51 in the two preceding weeks, further declined last week to 40, of which 22 occurred in Glasgow, seven in Edinburgh, five in Dundee, and four in Greenock. The deaths from small-pox, which had been 15, 12, and 20 in the three preceding weeks, further rose last week to 24, and were all registered in Glasgow. The fatal cases of measles, which had been 13 and 15 in the two preceding weeks, declined again to 10 last week, and included five in Edinburgh, two in Glasgow, and two in Aberdeen. The deaths from diphtheria, which had been two in each of the two preceding weeks, rose last week to seven, of which six occurred in Edinburgh. The six fatal cases of "fever" corresponded with the number in the preceding week, and included three in Glasgow. The deaths from diarrhœa, which had been 23 and 15 in the two preceding weeks, further declined last week to six, of which three occurred in Glasgow, where four of the five fatal cases of scarlet fever were also registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 184 and 161 in the two preceding weeks, rose again last week to 171, but were slightly below the number in the corresponding period of last year. The causes of 26, or nearly 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 46·6 and 39·6 per 1000 in the two preceding weeks, further declined to 34·6

per 1000 during the week ending March 16th. During the past four weeks the death-rate in the city has averaged 38·6 per 1000, the rate during the same period being 19·7 in London and 23·4 in Edinburgh. The 230 deaths belonging to Dublin registered during the week under notice were 33 below the number in the preceding week and included 14 which were referred to the principal zymotic diseases, against 12 in each of the two preceding weeks; of these, 11 resulted from whooping-cough, two from diphtheria, and one from "fever." These 14 deaths were equal to an annual rate of 2·1 per 1000, the zymotic death-rate during the same period being 1·6 in London and 3·4 in Edinburgh. The fatal cases of whooping-cough, which had been three, five, and 10 in the three preceding weeks, further rose last week to 11. The mortality from diphtheria showed a slight increase over that in recent weeks. The 230 deaths in Dublin last week included 41 of children under one year of age and 72 of persons aged upwards of 60 years; the deaths of infants exceeded the number recorded in the preceding week, while those of elderly persons showed a decline. Four inquest cases and five deaths from violence were registered; and 73, or nearly one-third, of the deaths occurred in public institutions. The causes of 16, or nearly 7 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Inspector-General of Hospitals and Fleets Henry Dawson Stanistreet has been placed on the retired list. Deputy Inspector-General of Hospitals and Fleets Richard William Coppinger has been promoted to the rank of Inspector-General of Hospitals and Fleets in His Majesty's Fleet.

The following appointments are notified:—Staff Surgeons: W. Bowden, D.S.O., to the *Naiad;* J. Chambers to the *Collingwood;* and W. M. Craig to the *Hibernia* for the *Maine*. Surgeons: P. T. Sutcliffe to the *Hibernia* for the *Maine;* W. J. Stitt to the R.M.A. Portsmouth; and N. H. Harris to the *Australia*.

ROYAL ARMY MEDICAL CORPS.

Temporary Lieutenant James C. G. Macnab, Surgeon-Captain 1st Fifeshire Volunteer Artillery, is granted the temporary rank of Captain whilst serving in South Africa.

The War Office have decided to enlist a certain number of trained men for service in the Royal Army Medical Corps during the present war in South Africa. Enlistments will be for the period of one year, or, if the war lasts longer, for the duration of the war. In the event of the war being over in less than one year they will have the option of being discharged at once, or of completing one year's service. They must be not less than 20 nor more than 40 years of age, and though there will be no maximum limit of height they must be medically fit for active service. A fair knowledge of ambulance and nursing duties will also be required of them. Married men may be accepted and facilities will be given when possible for their families to join them in South Africa on the termination of hostilities should they desire to remain in that country. All men accepted will be enlisted as privates and will receive a gratuity of £5 at the termination of their engagement, in addition to any gratuity given to the troops at the end of the war. The rate of pay will be 3*s*. a day.

VOLUNTEER CORPS.

Rifle: 1st Volunteer Battalion the Durham Light Infantry: Laurence James Blandford to be Surgeon-Lieutenant. 2nd Volunteer Battalion the Cameronians (Scottish Rifles): John Marshall to be Surgeon-Lieutenant. 1st Volunteer Battalion the Durham Light Infantry: Surgeon-Lieutenant A. E. Morison resigns his commission. 2nd Volunteer Battalion the Highland Light Infantry: Surgeon-Lieutenant A. N. McLellan resigns his commission.

VOLUNTEER MEDICAL STAFF CORPS.

The Manchester Companies: Surgeon-Lieutenant J. W. Smith to be Surgeon-Captain.

YEOMANRY CAVALRY.

Royal 1st Devon: Surgeon-Lieutenant Henry Goodwyn resigns his commission and is appointed Lieutenant.

SOUTH AFRICAN WAR NOTES.

Lieutenant A. Chopping, R.A.M.C., has been discharged from hospital to duty.

Lieutenant Taylor is reported to be improving (Howick, March 18th.)

Major A. T. I. Lilly, R.A.M.C., is returning to England in the *Pinemore*.

THE HEALTH OF THE NAVY.

The report of the health of the navy just published is mainly statistical in character, being mainly made up of figures, returns, and tables, together with summary statements of deductions therefrom. But it contains in an appendix a selection of the more instructive reports which medical officers of the navy have furnished to the Admiralty. Among the most interesting of these is Surgeon J. G. Fowler's *résumé* of medical facts in connexion with the Naval Brigade at Ladysmith. The total number of deaths out of the Brigade of 284 men and officers was 37, and out of 19 officers 17 at different times were on the sick list.

The health of the navy, as a whole, during the year 1899 was good, and as the figures could not be more succinctly given than they are in the report itself we cannot do better than quote it.

The aggregate number of cases of disease and injury recorded for the year furnishes a ratio of 879·63 per 1000, which is the lowest obtained since the year 1856. Compared with the ratio for 1898, it shows a reduction of 26·46 per 1000, and with that of the previous two years a reduction of 20·82

All the stations, excepting the North America and West Indies, Pacific, and China, show a reduction in the ratio of cases as compared with 1898.

The invaliding ratio of the total force, viz., 27·64, also shows a reduction when compared with the previous year, and with the average of the last two years, in the former case of 1·22, and in the latter of 2·78 per 1000.

The death-rate per 1000 was 5·41 and shows an increase of 0·5 per 1000, as compared with that of 1898, which was 4·91.

129 cases of wounds in action are returned, 24 proving fatal. 117 of these occurred in South Africa and the remaining 12 during the Samoan troubles.

On the home station 11 cases of cerebro-spinal fever, all of which terminated fatally, are recorded.

Malarial fevers show a decrease, contrasted with 1898, especially on the Cape of Good Hope and West Coast of Africa Station, which shows a reduction of 170·46 per 1000 in the ratio of cases.

The ratio per 1000 of cases of primary and constitutional syphilis shows a reduction of 5·98 compared with the ratio for the previous year.

The total force in the service afloat, corrected for time, in the year 1899 was 89,180, of whom 54,880, or 61·53 per cent., were between the ages of 15 and 25; 25,270, or 28·33 per cent., were between the ages of 25 and 35; 7480, or 8·38 per cent., were between the ages of 35 and 45; and 1550, or 1·73 per cent., were 45 years of age and upwards.

The total number of cases of disease and injury entered on the sick list was 78 446, which is in the ratio of 879·63 per 1000, being a decrease of 26·46 per 1000 compared with the previous year, and of 20 82 per 1000 when compared with the average ratio of the last two years.

The total number of persons invalided was 2465, which is in the ratio of 27·64 per 1000, and shows a decrease of 1·22 per 1000 compared with the previous year. Of the above total 1760 persons were finally invalided from the service, giving a ratio of 19·73 per 1000 for the whole force, or 71·39 per cent. of the number invalided, showing an increase of 0·94 per 1000 compared with 1898.

The number of deaths was 483, which gives a ratio of 5·41 per 1000, and exhibits an increase of 0·5 per 1000 in comparison with 1898, and of 0·34 on the average of the last two years.

AFFAIRS IN SOUTH AFRICA.

The armistice with General Botha has, to the deep regret of most people, proved futile; it has led to no satisfactory conclusion. General Botha has informed the British Commander-in-Chief that his terms of peace cannot be accepted. The war, if war it may still be called, must therefore go on. The public and the military critic in this country wonder why it is not finished, but it is the hardest thing possible to track and to dispose of an enemy in a waste of veldt who never stays to fight and whose sole object is to make raids on the relatively weak posts scattered over vast lines of communications and then to disperse and reunite. But the systematic surrounding of large areas and sweeping-in process after the manner pursued by fishermen with their nets must tell in the end, however rarely we may inclose a great multitude of Boer fish. The plague is not making any very active progress at the Cape, but the continued and increased mortality among the rats has a nasty significance. Inoculation for plague is being extensively carried out, and has, indeed, been made compulsory. A large number of the native population have been camped out on the Cape flats and energetic attempts have been made to cleanse and to improve the sanitary state of some of the worst and most overcrowded districts. A case of bubonic plague has been found on board the *Roslin Castle* at Durban in the person of a trooper from Capetown and all precautions are being taken. We trust that the efforts of the charitable in this country will not slacken, for our troops in the field, owing to the stormy and wet weather, have been having a bad time

of it of late and they will soon be in need of ample supplies of clothing for the cold weather on the veldt.

THE BRITANNIA.

A medical board, consisting of Sir Henry Norbury, K.C.B., Director-General of the Medical Department of the Royal Navy; Dr. J. W. Fisher, Inspector-General of Hospitals and Fleets; Mr. A. W. May, Fleet Surgeon, R.N.; and Professor W. H. Corfield, Consulting Sanitary Adviser to His Majesty's Board of Works, have issued a report upon the recent sickness on board the training ship *Britannia*. The report finds the position of the *Britannia* in the mouth of the Dart salubrious and the wood of which the *Britannia* and the auxiliary ship *Hindostan* is built to be apparently quite sound, the air of the holds was sweet, and the bilges all that could be desired. The admissions on the sick list from diseases which may depend upon the sanitary condition of the ships have shown steady diminution during the past five years. From these and other circumstances the board have come to the conclusion as the result of their investigations that the recent outbreak of influenza among the cadets was introduced from without and had nothing whatever to do with the sanitary condition of the ships. Certain slight alterations in the ventilation and sanitary arrangements of the ship which the board have recommended are to be carried out at once so as to admit of the return of the cadets on March 30th. The Admiralty have made the report public to correct widespread but erroneous impressions.

WESTERN COUNTIES CONVALESCENT HOME FOR SOLDIERS, COMBE DOWN, BATH.

A meeting of the supporters of this institution was held recently at Bath under the presidency of the Mayor. General Ian Hamilton, C.B, gave an interesting address, and Colonel Steele, R.A.M.C., spoke of the admirable work that the home was doing. On the proposition of the Rev. Canon Quirk it was resolved that the home, which was established in January, 1900, and had rendered invaluable service to the soldiers, should be still carried on for at least another 18 months, and that £700 should be raised by subscriptions, which, with the amount already collected, will be required to maintain the convalescent home for that period.

THE PRINCESS CHRISTIAN COTTAGE HOMES FOR DISABLED SOLDIERS AND SAILORS.

A special appeal has been issued for the endowment of beds in these homes as a memorial to Prince Christian Victor. The homes are for men discharged from the army paralysed, crippled, or disabled and unable to earn their livelihood, and at the present time there are many sufferers from the South African and other wars for whom accommodation cannot be found. It is for those who are permanently disabled that provision is now required.

THE NEW MILITARY STATION HOSPITAL AT PORTSMOUTH.

The new military station hospital which is to be built at Portsmouth will be one of the finest institutions of the kind in this country. The hospital, which will be situated on an elevation of nearly 1000 feet above the sea level, will have a sea view on three sides, and will stand in grounds of about 40 acres.

MEDICO-PSYCHOLOGICAL ASSOCIATION.—A meeting of the Northern and Midland Division of this association will be held at the Leicester and Rutland Asylum, Leicester, on Wednesday, April 3rd, 1901. Mr. Rothsay Stewart will read notes on "Two Cases of Insanity Following Chorea" and "A Case of Rodent Ulcer treated by X Rays." Dr. A. Miller (Hatton Asylum) will open a discussion on the Improvement of our Methods of Obtaining Information on Matters of Asylum Administration and the Advantages of Establishing a Bureau in connexion therewith. The asylum is about one mile from Leicester Station and Mr. Stewart invites members to lunch at the asylum at 1.30 P.M., when he will take them round the wards at 2.30. The meeting is fixed for 4 30 and there will be dinner at the Grand Hotel, Leicester, at 7.30, when morning dress will be allowed. Members intending to dine at the hotel and members accepting Mr. Stewart's invitation to lunch are requested to communicate by March 29th to Mr. Rothsay Stewart, County Asylum, Leicester.

Correspondence.

"Audi alteram partem."

PRINCE CHRISTIAN VICTOR MEMORIAL.

To the Editors of THE LANCET.

SIRS,—Will you allow us to appeal for assistance in carrying out the following project which was organised towards the close of last year?

The sympathy evinced by our lamented and revered Queen Victoria in all the personal sorrows of her people arising from the South African war had awakened a warm and grateful response in the hearts of the public, and it was then resolved to give expression to this all-pervading sentiment and in some measure respectfully to reciprocate the sympathy which had been shown by establishing a permanent memorial of the grandson of the Queen, Prince Christian Victor of Schleswig-Holstein, who died in the service of his country in South Africa.

Although the circumstances under which this tribute would have been paid are so sadly altered, the love and gratitude of the nation are only intensified, and the fact that our beloved Sovereign took the greatest interest in the proposed memorial and that it was one of her last wishes that it should be a success not only makes it impossible to withdraw the plan of a collection, which might otherwise seem inopportune at the present time, but adds a pathos to the appeal which cannot fail to insure its favourable reception throughout the country. It is proposed that the memorial shall take the form of a fund for founding and endowing beds in the Princess Christian Cottage Homes for Disabled Soldiers and Sailors. This would be in harmony with the spirit and aims of the young Prince who always had the interest of soldiers at heart.

Donations and offers of assistance in collecting may be sent to the honorary organising secretaries, office of the Prince Christian Victor Memorial, Horse Guards, Whitehall, S.W., or to the Memorial Fund at Messrs. Lloyd's Bank, 16, St. James's-street, S.W. Donations and collections will be acknowledged in the press.

We are, Sirs, yours faithfully,

(Signed) ROBERTS, F.M.,
President of the General Committee.

(Signed) REDVERS BULLER, Genl.,
Chairman of the Executive Committee.

Office of the Prince Christian Victor Memorial, Horse Guards, Whitehall, S.W., March 14th, 1901.

"THE DUTIES OF HOUSE SURGEONS AT THE EAST SUFFOLK AND IPSWICH HOSPITAL."

To the Editors of THE LANCET.

SIRS,—Allow me to thank you for your leading article in THE LANCET of March 16th and to suggest that the profession make a testimonial to the young surgeons who are suffering for making a most proper stand for the sacredness of knowledge obtained professionally. The public also have an interest in supporting those who suffer for maintaining that a surgeon is right to refuse to speak of what he learns of a person who comes under his professional care unless distinctly requested by the person concerned to do so.

If you will open a subscription list for this purpose I shall be happy to contribute two guineas and help in any way to maintain the doctrine that the press should seek information from *anyone* but a medical man professionally concerned, who is *the only* person bound not to know anything.

I am, Sirs, yours faithfully,

Framlingham, March 18th, 1901. GEO. E. JEAFFRESON.

To the Editors of THE LANCET.

SIRS,—In Dr. Kay's letter published in THE LANCET of March 16th, p. 816, there are two inaccuracies relating to me which, no doubt, were unintentional on his part but deserve correction. In my interview with the house surgeons I did not *demand* that they should see the reporters of this journal nor did I say that "the *paper* must be run." I asked that they would please see

the reporters or leave them the information, as previous surgeons had done, in order that accidents treated at the hospital could be reported, thereby bringing the benefits conferred upon the injured before the public as "the *institution* must be run." This paper does not depend for its existence upon the news obtainable from the hospital, but I believe that institution is largely benefited by the publicity the press gives to its work.

I am, Sirs, yours faithfully,

THE EDITOR OF THE "EAST ANGLIAN DAILY TIMES."

Ipswich, March 19th, 1901.

TO MEDICAL FREEMASONS.

To the Editors of THE LANCET.

SIRS,—May I through the medium of your valuable journal solicit the votes and interest of your Masonic readers on behalf of Doris Sall, aged nine years, daughter of E. W. H. Sall, M.R.C.S.Eng., till recently in practice at Southsea. He has been compelled to relinquish practice and to go on a sea voyage owing to the complete breakdown of his health, and is anxious to secure the election of his little girl to the Royal Masonic Institution for Girls at the election in April. Any votes will be thankfully received and acknowledged by

Yours faithfully,

J. ERNEST LANE,

Secretary, Sancta Maria Lodge, No. 2682.

46, Queen Anne-street, W., March 17th, 1901.

BENEFICIAL EFFECT OF OXYGEN IN PNEUMONIA.

To the Editors of THE LANCET.

SIRS,—I read the record of the case by Mr. A. Bradburne in THE LANCET of Dec. 15th, 1900, p. 1730, with much interest, as I thoroughly endorse his views on the benefit of oxygen in severe cases of pneumonia. The following occurred in a relative in my own home and was under my supervision continuously during the entire course. The patient was recovering from single lobar pneumonia when a relapse occurred, the disease breaking out afresh in the opposite lung. In spite of all treatment the patient got steadily worse and it was on a Tuesday afternoon the consensus of opinion of two medical men and myself that the case was practically hopeless—in fact, at the time the patient was almost moribund. The respirations were hurried and gasping, the lips were cyanosed, and none of us expected but that an hour or two would see the end. At this stage a tank of compressed oxygen containing 600 gallons, which had been ordered early in the morning, arrived (oxygen 79 per cent. and nitrogen 21 per cent., the exact opposite of the atmospheric proportion). I administered the gas for 10 minutes, when the respirations became normal, all cyanosis disappeared, and the patient sank into a quiet sleep, which she had not done for two days. In about 15 or 20 minutes the respirations began to quicken and the gas was applied to the nostrils, when breathing again became natural. In about another 20 minutes the patient awoke, said she that felt much better, and took some peptonised milk and champagne. For some hours previously all nourishment had been refused. The patients continued to improve, but the oxygen was administered day and night with no interval longer than an hour. At each administration the gas was stopped on the respiration becoming normal. For the first three days the improvement was marked. Food was taken with relish, even to a few raw oysters, which were longed for and given. During this time strychnine and digitaline were administered with brandy and champagne. On Saturday evening a change for the worse took place and the patient gradually failed. The oxygen was still kept up, and on the following Wednesday (eight days after the first administration) the patient died. Some hours before death she said that she felt something give way inside which on post-mortem examination was found to be an abscess of the left bases which burst into the peritoneal cavity. There is no doubt that this patient was kept alive for eight days by the oxygen, nine tanks of 600 gallons each being given during that time. This was a case of double pneumonia, the right lung being involved two weeks before the left. The patient also suffered for years from mitral stenosis and was very thin. Dr. H——, who had been in practice 50 years, said that he would always in future use oxygen in all severe cases of pneumonia, he never having seen it given so frequently before, and we three practitioners were unanimous in our opinion that the patient would have died that Tuesday afternoon but for the use of the oxygen. The oxygen was supplied by the Walton Company, New York city, where the case occurred. There it is always used mixed with 21 per cent. of nitrogen to 79 per cent. of oxygen, as in its pure state it is too irritating and cannot be administered but for a few moments, whereas the above mixture can be repeated as required with seemingly no bad effects when judiciously given. I have often had recourse to it and have yet to see the case where its effects were hurtful. Of course, it requires (like an anæsthetic) some practice to learn when to withhold and when to re-administer it. In 1898 a celebrated English author was taken ill with pneumonia in New York City. It was applied in his case and his condition to-day is only another proof of its benefit.

I am, Sirs, yours faithfully,

ARTHUR A. COTTEW,

L.R.C.S.I., L.R.C.P. Edin., M.D. Bellevue, New York.

"LEGISLATION AGAINST NATIONAL INTEMPERANCE."

To the Editors of THE LANCET.

SIRS,—Dr. H. Laing Gordon's letter in THE LANCET of March 2nd is facetious but scarcely helpful. It may be a doubtful point whether "alcoholic nervous instability" can be transmitted from parent to child, but it is a fact that habits of intemperance in either parent tend inevitably to produce conditions which act unfavourably upon the children and interfere with the healthy development of both mind and body. I imagine that Dr. Gordon will agree that alcohol is capable of producing a condition of mental instability in those who, previously to their having acquired a taste for alcoholic drinks, were strong and healthy people, capable of reacting normally to their environment. Some time ago Dr. Pye-Smith pointed out to us that the cause of the nervous breakdowns we so frequently see in business men was not the wear and tear of work but the wear and tear of whisky. We have to recognise the fact that the public has a firmly-rooted belief in the general usefulness of alcohol both as a remedy in disease and as an article of diet. In all classes of society we constantly come across the idea that whisky is good for gout and rheumatism and that a mother cannot nurse her infant without the help of a plentiful supply of "nourishing" stout. For these ideas medical opinion in the past must be largely responsible, and if they are now proved to be false it is our duty to put the facts clearly and authoritatively before the public and insist upon having them included in the instruction given to the children in all our State schools, as I believe has been done in the United States with very encouraging results.

It may be true that legislation can never make a man sober, but, Sirs, I agree with you that a great deal can and ought to be done to prevent his drunkenness. The good results of shortening the hours for the sale of intoxicating drinks you, Sirs, have brought before us. There are two other reforms for which we, as medical men, might agitate—namely, the exclusion of children from public bars and the abolition of the office of barmaid. (In the United States women are not allowed to serve as barmaids and all attempts to introduce "real English barmaids" have so far been frustrated.) That the work of retailing intoxicants is as deadly as that of other occupations from which women have already been excluded by the State needs no demonstration.

I am, Sirs, yours faithfully,

London, W., March 6th, 1901. M.D., B.S. LOND.

THE HOUSING PROBLEM.

To the Editors of THE LANCET.

SIRS,—You have recently published four articles on the question of the housing of the working classes and the poor in London; the London County Council has issued a large volume containing particulars of its own work in dealing with the problem; the County Council was in December vigorously attacked by Mr. Charles Sheridan Jones in the *Fortnightly Review;* in the following month the chairman of the Housing Committee of the London County Council replied to Mr. Jones; and in the *Fortnightly Review* for February Mr. Jones returned to the attack. Those who have read your articles and those who in addition have digested the materials upon which they were founded or who have

otherwise studied the matter will be aware that the problem is already one of such magnitude that it may well seem to some insoluble, and that it does not diminish in difficulty because the influx of workers to London continues and because the poor displaced from insanitary areas never, apparently, find healthy dwellings erected for the accommodation of their full number to take the place of those pulled down.

The growth of the population and overcrowding perplexed Parliament in the days of good Queen Bess. In the thirty-first year of her reign it was enacted that no cottage should be erected in a rural district with less than four acres of land attached and that no cottage should be occupied by more than one family. This statute, typical of an age when all had elbow-room, stood till 1775, when it was repealed on the ground that it put the industrious poor in a difficult position and tended "very much to lessen population." Even in the reign of Queen Elizabeth London caused particular anxiety, for four years after the last Act mentioned was passed another forbade the erection of new buildings within three miles of London or Westminster or the conversion of one dwelling-house within the same area into more than one. This statute was only repealed by the Statute Law Revision Act of 1888, so that it must have been tacitly ignored for centuries—a parallel perhaps to the silent indifference with which more modern and more practical laws dealing with much the same subject have from time to time been treated.

It is not necessary to endorse all that Mr. Jones writes with regard to the County Council. Accusations not only of fatuity and ineptitude but of dishonesty and criminality, accompanied by comparisons with the methods of Tammany Hall, savour of vulgar abuse rather than of serious criticism, and it is easier to say that the London County Council might have done more than it has done than to define precisely the course which it ought to have pursued. Undeniably, however, the problem presented by overcrowding in London has been before the nation more or less prominently since Lord Ashley, afterwards more widely known as Lord Shaftesbury, drew attention to it in 1851, and very little has been *done* with regard to it, however much may have been suggested, or however much public bodies may have been empowered to deal with it. The County Council contributes its figures. The chairman of its Housing Committee says that Mr. Jones understates them, and taking them at their highest point they only show that the Council has re-housed between 20,000 and 30,000 persons, and as Mr. Charles Booth in his valuable statistical work ("Life and Labour of the People in London"), published in 1892, estimated the numbers of the lowest class of the population at 37,610, of the "very poor" at 316,834, and of the "poor" at 938,293, and as 128,000 families of from four to 12 persons live in single rooms it may be pretty safely assumed that what has been done does not substantially affect the mass of those living in insanitary conditions even if we add to houses and common lodging-houses directly due to the efforts of the Council those wholesome dwellings which have originated in private benevolence and private enterprise. The newly constituted borough councils of the metropolis may avail themselves, each within its own limits, of Part III. of the Housing of the Working Classes Act of 1890—that is to say, they as well as the County Council may acquire land and build houses for the working classes upon it and may possibly in years to come enjoy the privilege of being blamed if overcrowding still continues within their borders.

One thing before all must, however, be remembered by those who criticise the action of county council or borough council in availing itself of the powers given it (the exercise of which is optional) to expend or risk large sums of money in becoming the poor man's landlord. These bodies are representative, and elective, with frequently recurring elections. If county council or borough council declines to incur financial risks that are not compulsory, some part of the blame, if any there be, must fall upon the county or the borough at large. Mr. Jones who so freely censures the County Council might find no difficulty in securing election to it in a district deeply interested in its own insanitary condition, and yet might not be able to secure a majority of councillors elected from other districts of the great county of London to support such a programme of wholesale activity as he might successfully have laid before his own section of the electorate. Even if he secured such a majority he might still fail to gain the assent of the Treasury to the raising of loans on a scale of sufficient magnitude to give effect to his views.

It must be confessed that the outlook is not a bright one. Apart from other questions suggested the work to be done seems too great to be undertaken by the committees of councils which are composed of voluntary unpaid workers of varying degrees of intelligence, information, and zeal. Parliament has for the time shelved the question as far it concerns itself by giving certain powers to other bodies which they may or may not exercise. These bodies will have done something which they have not done yet when they have clearly shown that houses and lodgings for the poor can be provided and maintained under sanitary conditions so as to offer a small but fairly certain dividend upon capital supplied not for purposes of charity but as an investment, and a step will have been taken in the right direction when it has been proved by active enforcement of the law that the letting of houses under insanitary conditions is not only unprofitable but financially disastrous. Investors are satisfied with low rates of interest nowadays if their security be only tolerably good; the prices of scores of ordinary stocks of railways and commercial undertakings liable to grave fluctuations prove this. Where losses are made either by public bodies or private persons the transaction, if it continues at all, becomes one of charity and the housing of the poor of London by charity cannot be regarded as either desirable or practicable, however much charity may assist as a pioneer of the movement.

I am, Sirs, yours faithfully,

March 14th, 1901. INNER TEMPLE.

THE METHODS OF THE ANTI-VIVISECTIONISTS.

To the Editors of THE LANCET.

SIRS,—A few days ago I had the misfortune to lose a favourite cat and with a view to getting him back I inserted an advertisement in the daily press. On the evening of the day upon which the advertisement first appeared I received by post a large envelope addressed, "To the owner of the lost cat." The envelope contained a choice selection of literature which I forward for your inspection and which apparently emanates from the Surrey Branch of the British Union for the Abolition of Vivisection. The first document I looked at was headed, "The Climax of Human Selfishness," and I own I was puzzled, for I could not see that it was selfish either to keep a cat or to lose him. I read on and came to a leaflet entitled "Enteric and Typhoid in South Africa." Still I was unenlightened, but I looked further and came to sundry pamphlets, in which were quoted experiments by Mr. Frederick Treves, Mr. Walter Edmunds, and Dr. Rose Bradford. Then it flashed across me that the B.U.F.T.A.O.V. wished to convey to my mind that some, or all, of these eminent men of science had presumably stolen my cat for the purpose of experiment. I can draw no other inference from the contents of the envelope, and I have sadly come to the conclusion that Mr. Treves is at fault. When he was away in South Africa the cat was safe. On his return the cat disappears. Comment is needless. My argument may not perhaps stand strict examination by the laws of the syllogism, but it is quite as convincing as the following argument which you will find in the leaflet entitled "Enteric and Typhoid in South Africa." Concerning antitoxins the pamphlet says: "To show the absurdity that prevails, diphtheria antitoxin is made by passing it through the horse. *The horse never has diphtheria.*"

I am, Sirs, yours faithfully,

March 15th, 1901. M.B.

PS.—The cat has come back. He has a scratch under his chin and a bald spot on the back of his head. I am waiting to see what fell disease will develop.

"THE ROYAL ORTHOPÆDIC HOSPITAL."

To the Editors of THE LANCET.

SIRS,—The letter published in THE LANCET of March 9th, p. 739, from a governor of the Royal Orthopædic Hospital told a strange tale, but during the week that followed events have taken place which enable me to tell a stranger and more startling story.

On March 14th—I have it on the best authority—a small committee meeting was held at the hospital. Without previous notice an offer of £37,700 was

brought forward. Two members voted in favour of accepting the proposal, two against, when the chairman, Mr. Ernest Flower, M.P., at once gave the casting vote in favour of sale. The sum of £37 700 means the sale of the hospital on a basis of 29 years' purchase at a rental of £1300. At the general meeting on Feb. 18th Mr. Marks stated the value of the hospital was 30 years' purchase at £1500, or a sum of £45 000.

Will it be believed that at the committee meeting on March 14th, when it was decided to sell for £37,700, an offer was actually laid before them to rent the Hanover-square end of the hospital property at £1200 a year on lease? That would leave the more valuable Oxford-street end of the premises free for further letting. For the purpose of argument let us assume the Oxford-street end let on lease also at £1200, though £1500 is nearer its value, that would mean a yearly rental of £2400, or, capitalised at 30 years' purchase, a value of £72,000. This is probably not far off the present value of the property which the committee decided to sell for £37,700. Fortunately the Charity Commissioners have a right to intervene and it is to be hoped they will satisfy themselves of the facts above stated.

What should we think of gentlemen who dealt with their own property in such a way? Mr. Marks turned out the former committee because they wanted to sell the site for £28,000. His committee suddenly reversed that policy and have now determined to sell for £37,000. Mr. Marks ousted the old committee by votes that were by his own admission those of governors created for the purpose. He has largely relied on those votes for obtaining fuller powers at the annual meeting of Feb. 18th last. Surely, he should, under such circumstances, take no steps in the sale without the fullest deliberation and publicity.

It is to be hoped that in the interests not only of an old-established hospital, but also of the whole cause of the medical charities, that publicity will be given to the series of transactions that have been taking place at the Royal Orthopædic Hospital. At the same time one may hope that THE LANCET will insist on an explanation from the Prince of Wales's Fund why they wished to force the Royal Orthopædic Hospital to sell the site. At the time when they urged that course it was actually proposed to accept £28,000 for the property. Did the Fund investigate the facts of the case before they accepted the serious responsibility of urging such a step? Happily, in these days the bar of public opinion is still a force in the land. I trust that THE LANCET may inform the public as to the unbusiness-like and unwise policy now being pursued by Mr. Marks and his friends at the Royal Orthopædic Hospital.

I am, Sirs, yours faithfully,

March 19th, 1901. HOSPITAL GOVERNOR.

THE ORGANISATION OF THE PROFESSION.

To the Editors of THE LANCET.

SIRS,—Perhaps it is not generally known that some of the large colliery sick clubs are endeavouring to impose on their surgeons that they should attend on obstetric cases for a fee of 10*s*., instead of the recognised £1 1*s*., which in all justice is small enough. It is about time that these unreasonable conditions should be erased from all contracts. I am quite sure that all we require is combination and fair discussion with selected committees from each side.

I am, Sirs, yours faithfully,

March 15th, 1901. A GENERAL PRACTITIONER.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The General Hospital.

THE one hundred and twenty-first annual meeting of the supporters of this hospital was held on March 20th. The report for 1900 dwells upon the loss by death of Sir John Jaffray who for 30 years was a member of the committee and gave valuable help in the management. Reference is made to the large number of enteric fever cases treated in the hospital; a limit of 36 beds was assigned last year to patients suffering from this disease, but this number is greatly inadequate, the list of those awaiting admission often exceeding 100 and rarely dropping below 50. There is every probability of the health committee aiding in the effort to deal with these cases by the opening of additional hospitals. The report further shows that the number of patients was 5211, an increase of 347 over the previous year. The out-patients were 60,866, or 238 more than in 1899. The number of operations is shown to be steadily increasing; thus in 1897 there were 1020 and in 1900, 1815. The financial record shows an adverse balance of £6291, the average income for the last three years being under £22,000 and the average expenditure over £24,000. An urgent appeal is being made for additional subscriptions to carry out the needs of the hospital and to obviate the curtailing of its beneficent work.

A Singular Case of Manslaughter.

At the recent assizes, held on March 18th, before Mr. Justice Ridley, a man was indicted for manslaughter under exceptional circumstances. Two men quarrelled, both being intoxicated, and the prisoner struck the deceased a blow in his left eye. The following day, his eye being painful, he was taken to the Eye Hospital and detained. It was found that the eyeball had been burst and an operation to remove it was necessary. Chloroform was administered by the resident medical officer at the hospital, but the man died during the operation. The judge remarked that the crime was manslaughter in law and that the cause of death was the blow and not the operation. The prisoner was sentenced to one week's imprisonment, to date from the commencement of the assizes; consequently he was liberated on the following day.

The Consultative Institute.

Dr. Ward Irvine, who resigned his post at the beginning of the present month, severs his connexion with this institute on May 21st. In the meantime there is an opportunity for an amicable understanding and a settlement upon just grounds of the differences at issue. At a recent meeting of delegates from the Hospital Saturday Fund Mr. Arthur Chamberlain remarked that the Consultative Institute had justified its existence and would go on. If it does it must go on under its true colours. It is useless to associate the scheme with philanthropic disguises or to speak of the dignity and self-respect of a certain class of the population. It is generally found that in a large city like this the inhabitants are sufficiently astute to protect their own interests apart from the sentimental considerations of self-elected patrons.

March 19th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Sale of Drink to Children.

THE Prestwich District Council, on the recommendation of the health committee, at their last meeting authorised the affixing of their seal to a memorial to Parliament to prohibit the sale of drink to children under 16 years of age. The Chorlton Guardians likewise have decided to support this memorial and to write to the Members of Parliament for Manchester asking them to support the Bill. The Salford School Board also are sending a petition to the House of Commons in favour of the prohibition of the sale of intoxicants to children under 16 years of age.

Police Ambulance Work.

On March 14th an interesting ceremony took place in the Manchester Town Hall. The Lord Mayor, in the presence of many members of the corporation, presented 267 medallions and certificates gained by members of the police-force for proficiency in ambulance work. Alderman Rawson, the chairman of the watch committee, proposed a vote of thanks to the mayor and pointed out that 828 members of the force held certificates from the St. John Ambulance Association while the force had rendered first aid in a great number of cases "many of which would have proved fatal had it not been for the prompt measures taken by the police. During the last five years 10,570 persons had been taken to the infirmary and other similar institutions or to their homes and 52 lives had been saved." Dr. G. H. Darwin, who has long taken a deep interest in the subject, seconded the vote of thanks and said that "ambulance work was next to godliness, it was a noble work"; and he has certainly acted up to his view and worked nobly for it.

Eating-Wagers.

Wagers of a specially disgusting character have become so common in this part of the country that they may

almost be said to be epidemic. The favourite subject just now is as to the ability to eat a pigeon a day for 14 days. It is popularly supposed that it takes 24 hours to digest one pigeon and that it is too great a trial to the stomach for it to endure 14 pigeons in 14 consecutive days. The imagination of the lower—i.e., of the more animalised—classes, which is much centred on the stomach, has been stimulated to a marvellous degree by these competitions. The "well-known publican," who is also a "familiar figure in football circles," encourages them, of course, because they bring together numbers of people who wish to see the pigeon-devouring hero, and the sight induces a great thirst. One of these men on the Saturday night before he ate his first pigeon devoured "one sheet of a popular football paper," and some three or four years ago this same man and a companion had a paper-eating contest which he won. The political views which he inwardly digested are not stated. He was to eat his last pigeon on Sunday night, March 17th, and was feeling so well that he asked for a brace of them to commemorate the occasion. That this kind of thing should be the pride and ambition of so many does not say much for the refining influence of the education about which such a parade is made, for the competitors in this high-class sport have, no doubt, gone through their "standards" in the regularly prescribed fashion. If so the best result of our system of education seems to be that it does not impair the appetite or enfeeble the digestion. The worst feature of the whole thing, perhaps, is the publicity given to such contests by a certain section of the press which panders too much to vulgar grossness of taste.

Schools for Feeble-minded Children.

In connexion with the School Board system for Manchester there is one matter in which all will agree. As is well known, among the thousands of children to be taught a certain number are more or less feeble-minded and unfit for the ordinary course of school work. It is therefore satisfactory to know that two schools are now being built with special provision for the needs of these children, one for 46 scholars and the other for 80 scholars. They are, like those in London and elsewhere, all on the ground floor, with separate entrances for boys and girls, with bathing accommodation and with everything necessary for the special requirements of these poor children. It is said that there are about 1000 of them in Manchester, so that more provision will have to be made.

March 19th.

WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Small-pox at Cardiff.

THREE cases of small-pox were found on March 15th in a seamen's lodging-house in Cardiff. The patients, a sailor, a girl aged 14 years, and a boy aged four years, were removed to the small-pox hospital, where the sailor died on March 18th. The outbreak can be distinctly traced to cases which were removed from two ships at Barry about the middle of February.[1] A sailor from one of the infected vessels went to stay at the Cardiff lodging-house until Feb. 25th, when he left apparently well to join his ship, but as his papers have been returned it is possible that he has been attacked with some form of illness. Within a fortnight from Feb. 25th a sailor who has since died and the two children were attacked. The health committee are displaying commendable energy in their efforts to prevent the spread of the disease, spurred on possibly by the fact that the Royal Agricultural Show is to be held this year at Cardiff. Placards offering free revaccination are distributed and domiciliary visits of the public vaccinators are being made; while the inmates of the infected lodging-house and of the house where the infected girl was in service are both placed under observation. The corporation has not yet provided any house or houses into which persons who have been exposed to infection can be removed until the period of incubation has expired.

Port Sanitary Expenses.

The health committee of the Bristol Corporation have decided to renew their efforts to induce the Government to pay out of the Imperial exchequer the expenses incurred by port sanitary authorities in taking precautions against the introduction of cholera, plague, and yellow fever, on the ground that such expenses are incurred for the protection of the country at large.

Bristol Royal Hospital for Sick Children and Women.

This hospital was established in the year 1857 and has now, in addition to the 100 beds in the Bristol institution, a convalescent branch at Weston-super-Mare with accommodation for 28 patients. At the annual meeting of the supporters of the hospital held on March 16th it was stated that the income for the year (£3875) fell short of the expenditure by about £800. The accumulated deficits of the past few years have now reached £2300, an amount which it is hoped will be realised from a bazaar to be held in May. The number of in-patients treated during the year (631) was rather less than in some previous years, and the number of out-patients (4223) was considerably higher. In the dental department 450 patients were treated.

Bristol General Hospital.

At the annual meeting of the supporters of this institution, held on March 11th, it was announced that the following scholarships had been awarded: Clarke Surgical Scholarship of £15 to C. Corfield, Henry Marshall Prize of £11 to J. E Sparks, Lady Hoberfield Prize of £29 to A. E. Iles, and the Martyn Memorial scholarships, £15 to S. R. Williams and £5 to J. C. Norton.

Monmouthshire County Asylum.

At the meeting of the Monmouthshire County Council, held on March 13th, it was decided to erect a pathological laboratory and make other alterations in the asylum at Abergavenny at an estimated cost of £3000.

March 18th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Small-pox in Glasgow.

THE new cases admitted to hospital during the week ending March 17th numbered 92, and the cases remaining under treatment amounted to 420. In his report to the corporation Dr. A. K. Chalmers discusses the increase in the extent of the epidemic which has developed since Feb. 19th, and concludes that some influence which cannot be precisely determined led to an active dissemination of the disease at the end of the first week of February, and that the operation of this new factor was probably favoured by the seasonal conditions under which it occurred. In view of some efforts which have been made to discount the value of revaccination the medical officer states that no case of the disease has been admitted to hospital or is known to the health department in which revaccination had been performed before the disease was contracted. At the last meeting of the town council an attempt was made by one of the members to controvert this statement, but the Lord Provost insisted on its accuracy and drew attention to its public importance. The health committee has expressed satisfaction with the efforts that are being put forth to deal with the epidemic which still, as the above figures show, continues to give ground for anxiety. The scheme for securing a medical house-to-house visitation is being energetically prosecuted, more than 200 practitioners having responded to the invitation of the corporation to assist in securing effective revaccination for all citizens. A circular has also been issued to employers of labour throughout the city requesting them to use their personal influence with their workmen to promote revaccination. Some of the critics continue to call for a detailed report on the vaccination condition of all patients treated during the epidemic, but the pressure on the health officials renders this impossible, and an official statement has been made that such a report cannot be issued until the epidemic is thoroughly under control.

Glasgow University.

The meeting of the University Court on March 14th was occupied by a long and important discussion on the subject of clinical teaching and examinations Dr. D. C. M'Vail, seconded by Sir John Cuthbertson, proposed that the court should invite the physicians and surgeons of the Royal Western and Victoria infirmaries to become examiners in the University. The avowed object of this proposal was to induce

[1] THE LANCET, Feb. 16th, 1901, p. 514.

the University students to take at least part of their clinical work in the Royal and Victoria infirmaries. Dr. M'Vail argued that the clinical classes of the university professors are much overcrowded whilst other clinical teachers are to a large extent neglected. This state of matters, he contended, is due to the fact that the professors have a predominating influence in the degree examinations. The various physicians and surgeons are already recognised as teachers whose classes qualify for graduation, and in order to promote a more equal distribution of students and to make clinical teaching more practical and effective he proposed that all these gentlemen should take part in the professional examinations for degrees. The Senate, who had been asked to report on the proposal, advised against it and an amendment adopting the view of the Senate was moved by Professor Adamson who expressed his sympathy with the desire to secure the clinical facilities of the several hospitals for the benefit of the students. He, however, refused to believe that the large attendance in certain classes was to be explained by the mere fact that the teachers were also examiners. He opposed Dr. M'Vail's proposal on the ground that its adoption meant the transference of the appointment of examiners from the University authorities to the governing boards of the hospitals. Whilst willing to consider any reasonable plan for restricting the size of clinical classes he could not assent to a scheme which would remove the control of the University from examinations which admitted to a university degree. On being put the amendment was carried by 5 votes to 4.—The Senate have resolved, at the graduation ceremony in April, to confer the honorary degree of LL.D. on Mr. Andrew Cecil Bradley, M.A., formerly Professor of English Literature in the University; Mr. Charles Scott Dickson, K.C., M.P., Solicitor-General for Scotland; and Dr. Arthur William Rücker, F.R.S., secretary of the Royal Society. From some statistics recently collected it appears that since women were admitted to graduation in the University 49 have taken the degree of M.A., 15 with honours, four have graduated in the science faculty, and 52 have taken the degrees of Bachelor of Medicine and Bachelor of Surgery. The special organisation and facilities provided at Queen Margaret College are evidently appreciated, as Glasgow can claim more medical women graduates than can any other Scottish University.

Meat Inspection in Glasgow.

A special committee of the town council has reported that in addition to the detective system of meat inspection at present in operation in the city it is necessary for the security of the public health to make further regulations for the examination of meat which is to be offered for public consumption. The committee advises the provision of suitable and convenient premises for such inspection and favours the proposal to provide some form of marking or stamp for meat which has been approved, so that firms using meat in large quantities may have a ready guarantee that no diseased meat passes into their premises. The need for some effective supervision is emphasised by a recent case in which the owner of a condemned carcass actually produced a certificate from a local veterinary surgeon stating the meat to be fit for human food, though on cross-examination he admitted that he was aware that the animal was diseased.

The late Dr. James Dunlop.

By the death of Dr. James Dunlop, a well-known figure has been removed from the medical world of Glasgow. Dr. Dunlop had reached the age of 67 years and had been engaged in active practice since he graduated at the University of Glasgow in 1857. His earliest experience was gained as house surgeon to Lord Lister in the Royal Infirmary, and almost from the outset he devoted his chief attention to surgical practice. At an early age he became Professor of Surgery in Anderson's College Medical School, a position which he held for more than 20 years. Until he retired a few years ago he also held the position of senior surgeon to the Royal Infirmary. For many years he displayed a keen and enthusiastic interest in the medical branch of the volunteer service; his first commission was dated November, 1860, and in 1890 he became Brigade-Surgeon-Lieutenant-Colonel to the Glasgow Brigade. Advancing age hardly checked his devotion to this work, and in January of last year he went out to South Africa, where he was appointed one of the surgeons to the Wynberg Base Hospital. His return in August was celebrated by a banquet, at which he gave a lively and incisive account of his experiences. In addition to his connexion with the Royal Infirmary, Dr. Dunlop was surgeon to the Lock Hospital and a governor of the Samaritan and Victoria infirmaries; in the promotion of the last-mentioned institution he took a prominent part. He was also for many years medico-legal adviser to the Crown, and in this capacity his name has been associated with many of the great criminal trials of the last generation. His other professional positions were largely connected with the Faculty of Physicians and Surgeons, in which he held at different times various offices, including those of examiner and visitor. To many Dr. Dunlop was known as an ardent sportsman and naturalist, and his letters descriptive of his fishing holidays on the Scottish coast contain many valuable observations on natural history and have a full measure of the saving salt of humour. Possibly Dr. Dunlop was concerned in too many directions to obtain great excellence in any, but his force of character secured wide recognition and his genial and kindly disposition made for him a wide circle of appreciative friends. Dr. Dunlop is survived by his widow, six sons, and one daughter; one of the sons is at present serving as a civil surgeon with the army in South Africa.

March 19th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Health of Dublin.

THE above title is almost paradoxical. The exceptionally high death-rate which has recently been notified in Dublin has caused much comment in the public journals and many letters and suggestions from the citizens. The wretched and overcrowded state of the tenement houses has long been looked upon as a foremost factor in the spread of disease. The matter is dealt with in a letter from Sir Charles Cameron in the *Irish Times* of March 19th, which contains some interesting statements and figures. The evil of overcrowding, he says, does not now largely exist, for the census which has just been taken in reference to the dwellings of 15,000 families occupying the lowest-class houses shows that the number of persons in those houses is in the ratio of 2·5 per room. This is a great improvement on the state of things disclosed by a similar census in 1881 when it appeared that 32,000 families occupied 48,000 rooms, or one family per one and a half rooms.

The Irish Workhouse Association.

The annual meeting of the Irish Workhouse Association took place in the Mansion House on March 8th and was to a large extent a medical function. The Right Hon. Lord Monteagle, K.P., the President, occupied the chair, and resolutions were proposed by Dr. T. Myles, President of the Royal College of Surgeons in Ireland, Sir William Thomson, Sir Philip C. Smyly, and Colonel Everard, D.L. Public attention was called to the fact that although the association has been but a comparatively short time in existence it has been the means by which a great deal of good has been effected. One of the speakers remarked that if the association had done nothing beyond inducing the Government to pay half the salaries of the trained nurses in workhouse hospitals it would have fully justified its existence. Sir William Thomson said that he was delighted to notice in the report that the Government had consented to a reform, and that the first step had been taken in the appointment of a medical inspector whose duty it would be not alone to look after the buildings, but also to see that the infirm and sick were taken the best possible care of.

The Royal College of Surgeons in Ireland.

At a meeting of the Fellows of the Royal College of Surgeons in Ireland on March 19th, Sir William Thomson and Mr. Robert H. Woods were elected members of the council to fill two vacancies.

The Royal University of Ireland.

A deputation from the Royal University of Ireland waited upon Earl Cadogan, the Lord Lieutenant of Ireland, on March 9th, for the purpose of requesting the appointment of a Royal Commission to inquire into the working of the Royal University as an examining and teaching body in relation to the educational needs of the country at large. After several members of the deputation had spoken his Excellency made a very conciliatory reply and stated that he had brought the matter before the Cabinet and that a Royal Commission would be appointed. Of course, a great deal will now depend

on those who may be appointed on this body, but as the Commission is a Royal one it is expected that there will be members from other parts of the United Kingdom than Ireland; indeed, many think it would be wiser to appoint no one from Ireland on it as sectarian and political bias is so rampant in this country at present, even in educational matters.

Ulster Medical Society.

The fifth meeting of the session of the Ulster Medical Society was held in the Physiological Laboratory, Queen's College, Belfast, on March 15th, the President, Professor W. H. Thompson, being in the chair. The President showed a convenient form of Kjeldahl apparatus for estimating the total amount of nitrogen and a new apparatus for making standard alkaline solutions. Dr. Robert Allen gave a demonstration of Microscopic Sections of Granular Cells in Tumours. Professor J. Symington gave a lantern demonstration of the Pre-natal and Post-natal Development of the Cerebral Hemispheres. Dr. R. J. Johnstone gave a demonstration of a series of pathological specimens mounted dry with glycerine in the lower part of the jars, which were hermetically sealed. Professor J. Symington and Dr. J. A. Craig showed (1) a specimen of Hypertrophy of the Nasal Turbinals (with lantern slides); (2) specimens of Cæca and Vermiform Appendices; (3) a Skull with Defective Tegmentum Tympani; and (4) an Impacted Fracture of the Neck of the Femur. Professor J. Symington and Dr. J. Tennant exhibited a Section of a Female Pelvis containing a Tumour. Dr. J. Lorrain Smith and Mr. Robert Campbell showed (1) a Congenital Cystic Sarcoma removed from a child three weeks old, and (2) a Sarcoma of the Upper Third of the Femur of a Child. Dr. Thomas Houston read a paper on Anæmia in a Case of Typhoid Fever. He first pointed out that enteric fever was one of the few septic conditions of the blood in which the number of leucocytes per cubic millimetre were decreased; that this decrease was due to an "apparent" decrease of the polymorphonuclear elements. The differential counts made in this case showed a high percentage of lymphocytes and large mononuclear leucocytes. The usual explanation of this disease as given by Ehrlich and others is that the toxins of the typhoid bacilli repel the polymorphonuclear elements (negative chemotaxis). The reader went on to adduce evidence from the determinations made in this case that this theory of negative chemotaxis was not applicable to typhoid fever. He showed that there were many reasons for believing that in typhoid fever there was a tendency to dilution of the blood and that this tendency would fully account for the peculiarities of the blood as illustrated by the differential counts given. He quoted a case of typical chlorosis which had apparently been set up by typhoid fever, and he pointed out that this disease was also one in which there was a marked dilution of the blood, as shown by the work of Dr. Lorrain Smith on Anæmia. The blood determinations illustrating the paper were those of patients in the Royal Victoria Hospital, Belfast. An interesting discussion followed in which the President, Dr. Lorrain Smith, Professor J. A. Lindsay, Dr. W. Calwell, and Colonel J. Moorhead took part.

Agmondisham B. Vesey, M.R.C.P. Irel., J.P.

I regret to announce the death of Mr. A. B. Vesey of Magherafelt, co. Derry, a practitioner who was much respected in the north of Ireland. On the evening of March 12th, while proceeding on his way home from the dispensary situated a short distance from his residence, he fell suddenly in an anginous attack and expired. During the past 12 months Mr. Vesey has been in declining health and in August, 1900, he was compelled to relinquish his duties as medical officer of the dispensary and workhouse for six months, and this leave of absence was further extended at the last meeting of the board of guardians. Mr. Vesey studied in Dublin, at the Richmond Hospital. He qualified in 1873 and was a Member of the Royal College of Physicians of Ireland and a Licentiate of the Royal College of Surgeons in Ireland. Returning to his native place, Magherafelt, where his grandfather was rector, he succeeded his father as medical officer of the workhouse and dispensary, and as physician to the fever hospital. Mr. Vesey was greatly respected by both rich and poor, who had the utmost confidence in his professional skill, and his sudden death is universally deplored. He was a J.P. for the county of Derry. He was buried on March 15, a large concourse of patients and friends following his remains to their last resting-place.

Samuel Doake, M.A., M.D. R.U.I.

I regret also to chronicle the death of a distinguished former student of Belfast, Dr. S. Doake, which occurred at his residence, The Hill, Dromara, co. Down, on March 14th. A very able student during his Queen's College course, Dr. Doake graduated M.D. of the Old Queen's University in 1862. He then entered the army, but residence in India so broke down his constitution, which was never a robust one, that he was obliged to retire on half-pay. Coming home he was appointed medical officer of the Dromara Dispensary, but this office he had to relinquish owing to ill-health. Since then he has lived in retirement with his children at The Hill, the house in which he was born. A great personal favourite, and a man of thorough ability, Dr. Doake was always handicapped by a weak physique. He was buried on March 16th.

March, 19th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Legal Action on Account of X-Ray Burns.

THE Civil Tribunal of Paris has just given judgment in a case which lasted for some time and which raised an interesting point as to the responsibility of a medical man. A lady named M—— prosecuted a medical radiographer for having, as she alleged, committed an error in having injured her by burns produced by the x rays. Madame M—— had suffered for some years from acute sciatica and on the advice of her family medical attendant she had consented to have her leg radiographed by Dr. B——, who gave her three sittings. The first lasted 40 minutes, the second 45 minutes, and the third one and a quarter hours. Before this last sitting the skin of Madame M——'s thigh was noticed to be somewhat red and inflamed from the preceding sittings. But although Madame M—— mentioned this Dr. B—— made light of it and went on with the third sitting of one and a quarter hours, at the end of which time Madame M—— had a burn of the third degree which confined her for four months to her bed. On this account she claimed 5000 francs damages from Dr. B——. Dr. Brouardel and M. Ogier, who had been nominated as expert witnesses by the tribunal, sent in a very remarkable report according to which Dr. B—— was not responsible for the damage. In their views the method of application in radiography is not yet formulated and no one knows the conditions which give rise to the fact that some patients are burned while others with even longer exposures are unhurt. In the same way it is impossible to foresee out of a body of men marching in the sun who will be affected by sunstroke. It was, however, to be regretted that Dr. B—— did not pay attention before the commencement of the long third sitting to the inflammation which had appeared after the second sitting. Despite this definite report the court gave Madame M—— the full damages asked for—namely, 5000 francs—declaring that Dr. B—— had acted imprudently, more like a workman than a medical man, and that his apparatus was defective. This judgment, however, is subject to appeal.

Subcutaneous Injections of Chaulmoogra Oil in Leprosy.

M. Hallopeau and M. du Castel have made known to the Academy of Medicine some results, founded on some researches of Tourtoulis Bey, which they had obtained in cases of leprosy by the use of chaulmoogra oil given by subcutaneous injection. If given by the mouth the drug was often badly borne and so its use had to be given up too soon, for it is a remedy which has to be employed for a long time to do any good. M. Hallopeau remarked that from the composition of the oil not being exactly known it was often supplied in an adulterated condition whence the variable results and often-times the ill success obtained in the hospitals by this treatment. When the subcutaneous injections were well borne they gave in certain cases excellent results and even brought about apparent cure, but it must be remembered that cases of leprosy often underwent unexpected and spontaneous amelioration and that the injections were sometimes very badly borne. M. du Castel said that he had obtained good results in the tubercular form but practically no result in the nervous form. In his opinion the treatment should be reserved for the grave cases, for it was painful and like all oily injections was wont to produce, despite every precaution, painful abscesses or pulmonary embolism.

Alterations in a Water Service by a Landlord.

M. Bechmann, the Director of the Municipal Water-supply, has just brought before the Council of Hygiene the case of a landlord who had two concessions—the one for the supply of spring water for his kitchens and water-closets on the various floors of a tenement house and the other of river water to supply the public standpipe in the yard. From motives of economy he inverted his supply, so that the kitchens were supplied with river water and the tenants were compelled to go down to the yard to get drinking water. In the existing state of the law the administration is powerless to compel the landlord to reconvert his supply and the only thing to be done is for the tenant to bring an action in the civil court. M. Bechmann demands that the law which presents such glaring deficiencies should be altered.

Small-pox Inoculation in Algeria.

M. Hervieux recently drew before the Academy of Medicine a very sombre picture of the danger to which small-pox inoculation is giving rise in Algeria. According to a report by M. Trolard this abominable practice is making headway more and more among the natives. They refuse vaccination, despite all the efforts of the medical men, and prefer direct small-pox inoculation performed by native practitioners who inoculate with a lancet charged with variolous pus. Owing to this deplorable habit, which the French authorities try in vain to combat, small-pox is increasing rapidly among the Arabs and the mortality is going up, to say nothing of the numbers of maimed and blind who have to be looked after by the State, while as a final result the commercial relations of the colony are beginning to be imperilled. M. Hervieux argued that energetic measures must be taken and proposed that the Academy should lay down a rule that inoculation should be made a penal offence punishable by a fine in every French colony. A discussion, however, took place, M. Chauvel saying that the Academy could not formulate penal laws without going outside its proper rôle, which was advisory and scientific. M. Gautier considered that a fine was an insufficient punishment and suggested that compulsory isolation of small-pox patients, which being at once a kind of imprisonment and a valuable method of prophylaxis, would have greater weight in the eyes of the natives. Finally, the Academy left the choice of the punishment to the Minister concerned but insisted that small-pox inoculation ought to be sternly suppressed in French colonies.

The Title of Doctor of Pharmacy.

When some three years ago the responsible Minister created the new title of "Doctor of Pharmaceutical Science" there were not wanting many medical men who expressed a fear that this new diploma, which was intended to encourage higher education and study of pharmacy with a view to the student seeking a professorship or the post of expert, would also encourage the illegal practice of medicine already so largely indulged in by pharmacists, for the public, which considers that the term "doctor" means doctor of medicine, would be confused. At the time that the title was proposed the council of the University of Lyons reported very unfavourably upon the idea, but nevertheless the title was created. However, it was expressly laid down that the holder of the new title should not call himself simply "doctor" but always "doctor of pharmacy." All the same, that which had been foreseen happened and the new doctors constantly forgot to add the words, "of pharmacy." The President of the Association of Medical Men of the Seine made a formal representation to the syndical Chamber of Pharmacists in order to bring about the cessation of the abuse, but the pharmacists evaded the question, declaring that their Chamber had nothing to do with such matters. The President of the Association of Medical Men then applied to the responsible Minister and received the answer that in future the new doctors would be definitely instructed to use the precise terms of their diploma so that, in showing its purely academic character, all confusion with the title borne by practising physicians would be avoided.

March 19th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Death of Dr. G. M. Dawson.

DR GEORGE MERCER DAWSON, C.M.G., LL.D., A.R.S.M., F.R.S., &c., who for many years had been director of the Geological Survey of Canada, died in Ottawa on the afternoon of March 2nd from acute bronchitis and *la grippe*. He was born at Pictou, Nova Scotia, on August 2nd, 1849, and was a son of the late Sir William Dawson, F.R.S., who for many years was the principal of McGill University. Dr. Dawson's work was mainly carried on in the North-West Territories of the Dominion of Canada and in British Columbia, where he investigated more particularly the relations of the cretaceous and the Laramic formations. He further contributed largely to our knowledge of the glacial phenomena which in Canada are so strikingly developed. In 1891 he was appointed one of Her Majesty's Behring Sea Commissioners and for his services in this connexion received the title "C.M.G." He was President of the Royal Society of Canada in 1894, and in 1897 he received a gold medal from the Royal Geographical Society, a well-deserved honour.

The Latest News from the Yukon.

During the months of January and February the residents of Dawson experienced some very severe weather. The lowest temperature recorded was that on Jan. 15th, when the thermometer descended as low as 68·5° F. below zero. For nine days the average minimum temperature was 60° below. With the onset of the intense cold that peculiar white mist which always accompanies it settled slowly down upon the city and valley until an object could scarcely be distinguished 50 yards away. To add to the discomfiture of the inhabitants an epidemic of rabies seized upon the dogs of the town, which became so widespread and alarming that they all had to be impounded for the protection of society. Then what might be called an epidemic of "typho-pneumonia" broke out and carried off many prominent and popular citizens. The pneumonia appeared first and developed after the usual fashion. Then as the crisis approached abdominal complications set in, resulting eventually in a fatal collapse. During the months of December, January, and February the death-rate from "typho-pneumonia" was extremely high.

Report on Leprosy in Canada.

In the annual report of the Minister of Agriculture appears the regular report of the officer having the medical supervision of the lepers at the Lazaretto, Tracadie, New Brunswick, Dr. A. C. Smith. From this it appears that there are to-day in that institution 20 inmates—13 males and seven females—whose ages range from 19 to 64 years. Seven of the inmates are classified as being in the first stage of the disease, 12 in the second, and one in the final stage of the malady. During the official year there were four deaths, and three new cases were admitted from the surrounding districts. Dr. Smith was successful in inducing several of the less advanced cases to make a trial of chaulmoogra oil and creolin in treatment, and reports encouraging results. Whilst the Director-General of Public Health, Dr. Frederick Montizambert, was in British Columbia during the past summer he visited Darcy Island unofficially, where are confined five more lepers, all Chinese males. One of these is maintained by the province of British Columbia, and one each by the municipalities of Vancouver, Victoria, Kamloops, and Nanaime. This comprises the extent of leprosy in Canada at the present time.

Path logical Studies at William Head Quarantine Station.

During the past summer Mr. Charles H. Higgins, B.S., D.V.S, late official pathologist at William Head Quarantine Station, made an interesting study of the bacillus pestis bubonica. His morphological description of the plague bacillus is as follows. It is a short, thick, straight rod, with rounded ends. In length it varies from 0·7 to 1·2 millimetres and is half as broad. The bacilli sometimes occur in chains and have been observed in some cases to have a capsule. In fresh broth cultures they are often seen in chains resembling streptococci. In old cul ures they sometimes completely lose their elongated shape and appear as cocci. The germ takes the polar staining, leaving an unstained central portion. In unstained preparations and in the hanging drop this polar arrangement of the protoplasm is noticed. The form of the bacillus varies greatly according to the media upon which it is grown and also upon its age. Descriptions of cultural characteristics and observations on the inoculation disease in guinea-pigs, with symptoms and pathological lesions, also appear in the report.

Report of the Lunatic Asylums of the Province of Quebec.

The last official report on the asylum population shows

that there were 2981 of these unfortunates in the province, and the cost of maintenance is put down at $314,157·48 per annum, both figures showing an increase of those over the previous year. The report goes to show that the material and hygienic conditions of the three principal asylums of the province—Quebec, Verdun, and Longue Pointe—are in a very satisfactory state at the present time. The percentage of cures on the admissions of the past year has been somewhat less in each of the asylums of the province than it was last year. In 1898 Longue Pointe showed a percentage of 27·35 and in 1899 25·8; Quebec, 41·62 in 1898 and 31·75 in 1899; and Verdun, 43·63 in 1898 and 33 33 in 1899.

Canadian Association for the Prevention of Tuberculosis.

The conference summoned by His Excellency the Governor-General, Lord Minto, met in Ottawa on Feb. 14th and organised the above association, with the Governor-General as honorary president and Sir James Grant (Ottawa) president. Prominent medical men were present as delegates from each of the provinces. Amongst other questions discussed was that of Government aid to sanatoria, the tuberculin test as affecting the cattle-breeding business of the country, and the prevention of tuberculosis on the Indian reserves in Canada. The question of tuberculosis in immigrants was also taken up. Along these lines resolutions were adopted, and an organised effort may now be expected to be put forth in Canada for the prevention of tuberculosis in all its widespread ramifications. The association appointed a committee to confer with the Dominion Government as to the advisability of creating a department of public health.

News Items.

For the first time in the history of the Newfoundland sealing fleet physicians will accompany it. The fleet numbers about 6000 sailors and leaves St. John's on March 9th. Dr. Roddick, M.P., made the arrangements and the following are the names of the physicians from Toronto and vicinity who volunteered for the service: Dr. McWillie Martindale, Dr. W. F. Adams, Dr. McKinnon, and Dr. E. H. Stafford. No Montreal men were available.

While working in the laboratory of Professor Ruttan of McGill last week a first-year medical student from Prince Edward Island had the misfortune to have one of his eyes destroyed. In the test tube was some sulphuric acid and alcohol which frothed up in his face when presented to him for inspection by a neighbouring student.

The province of Ontario is on the verge of a small-pox epidemic. The disease is now located in some 15 centres and something like 100 cases have been reported, with two deaths. In the neighbourhood of Montreal there are six cases and the health authorities of that city are making strenuous efforts to keep the malady outside the city limits. The health officer of Montreal is prosecuting a vaccination crusade.

The Toronto Dental Society held its first annual clinic on Feb. 25th and 26th. Two features of the meeting were the "X Ray in Dentistry," by Dr. Price of Cleveland, U.S.A., and the "Surgical Treatment of Cleft Palates," by Dr. Truman W. Brophy of Chicago. Dr. Brophy described and demonstrated his operation at the Hospital for Sick Children before the leading dental and general surgeons of the city. He has operated on over 200 patients under five months of age with complete success.

Dr. Campbell Davidson, son of the Hon. Mr. Justice Davidson, has been appointed medical officer of the ss. *Montfort*, which left Liverpool on March 1st for Halifax to transport the Canadian contingent of General Baden Powell's police-force to South Africa.

March 6th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

An American Physician made a Major-General

DR. LEONARD WOOD, who commanded the Rough Riders in the Cuban campaign of the Spanish-American war, and who is at the present time Military Governor-General of Cuba, has been appointed by the President a major-general in the United States army. General Wood up to the time of the war with Spain had seen no active service as a soldier, although he had fought in the West in frontier warfare against the Indians. His promotion is said to have given rise to much heart burning in army circles, as it is considered unfair that a man who is virtually not a trained soldier should be thus put over the heads of men who have been in the army the greater part of their lives. Of course, such a procedure would be impossible in any other country than the United States, but notwithstanding its novel nature it may prove a wise step after all. General Wood has shown himself able and capable in whatever position he has been placed. He was an excellent physician, and probably had he elected to continue in practice he would have risen to a prominent rank in the profession. In the Cuban war, as colonel of the Rough Riders, he by no means disgraced himself, and as military governor of Cuba he has gained golden opinions on all sides. It has been mainly owing to his well-directed efforts that the large towns of that island are becoming metamorphosed from sinks of filth into fairly sanitary places of residence. It may be said, too, that the Cuban war, and to a still greater extent the South African war, have demonstrated the fact that to be a successful leader or soldier it is not always necessary to be a trained military man. In South Africa the colonials have fully held their own with the regular troops, and the same thing may be said as regards the volunteers in the Philippine Islands. It would, however, be somewhat curious if a man who was a physician until he was 40 should become the officer of highest rank in the United States army.

The Coming Exposition at Buffalo.

It is anticipated that the Pan-American Exposition, which will open at Buffalo on May 1st, will be a great success. A better situation for a large exhibition could hardly have been chosen. There are few more beautiful or picturesque cities in America than Buffalo both in itself and its surroundings. Niagara is within easy distance (about 20 miles) and can be reached by rail, electric cars, or by boat. Another strong point in favour of Buffalo is that it is only nine or 10 hours' ride by rail from New York and is connected with that city by no less than six lines, among these being the Grand Central and Lehigh Valley. Thus visitors from Europe will not be put to the inconvenience of a long and tiresome railway journey. The accommodation, both in the hotel and boarding-house lines, is probably better in Buffalo than in any town of its size in the United States. It is estimated that with the hotel buildings now in existence and those in course of construction the hotel accommodation of Buffalo is about 20,000. This, it is said, will be added to by 10,000 before May. The Statler Hotel, adjoining the Exposition grounds on the south, is now being built. It will be a temporary structure and will afford accommodation for 5000 people. The Esenwein, another temporary hotel near the Exposition site, is designed to accommodate 3500 guests. The Iroquois and Mansion House, which are permanent hotels in the business district of Buffalo, will accommodate 1500 each. The Lift House, also in the business portion, will house 1000, and the Genesee and Broezel 800 each. In addition to the hotels there are numerous boarding-houses, and many private houses will take in guests during the time that the Exposition is running. The exhibition buildings and grounds are well advanced towards completion and when May comes it is expected that all will be ready. A feature of the Exposition will be the portion devoted to science and medicine. Buffalo contains much of interest to medical men; it has an excellent medical university attached to the city hospital, besides another large and flourishing medical school and several hospitals, including one of the large State hospitals for the insane.

Sing-Sing Prison.

This institution for criminals of New York city, the buildings of which were erected in the year 1834, has long borne an evil reputation for unhealthiness. Latterly the prevalence of typhoid fever on a large scale among the prisoners has brought the question of the unhygienic state of Sing-Sing prominently before the public. The attention of the State Board of Health of New York has been called to the matter, and it seems, as a result of an investigation undertaken by the board, that the old prison is doomed to be either destroyed or put to some other use. Mr. Charles F. Wingate, consulting engineer to the State Board of Health, made an exhaustive examination of the sanitary conditions in Sing-Sing generally and of the sewage system in particular. The state of affairs that he discovered can only be characterised as appalling He found that the prison cells were but four feet above tide-water (Sing-Sing is situated on a bank of the Hudson about 30 miles from New York city) and that the sewage emptied into the Hudson at low tide backs up under the prison buildings. He also condemned the whole of the

plumbing system. Typhoid fever has been rife among the prisoners, there being more than 40 cases at one time, with two or three deaths, within the past three months. Acting upon the report of Mr. Wingate, the Prison Association has recommended in a special report to the Legislature that the prison buildings should be entirely removed and that a completely new penal establishment should be erected elsewhere. The report of the committee of the Prison Association states that the insanitary condition of Sing-Sing consisted in excessive dampness, the absence of sunlight, insufficient ventilation, and bad drainage.

The Pan-American Medical Congress: The Etiology of Yellow Fever.

At the Pan-American Medical Congress recently held in Havana the paper which received the most attention was that of Dr. Walter Reed, surgeon in the United States Army, on Yellow Fever and its Probable Propagation by Mosquitoes. The theory that the mosquito plays a leading part in the dissemination of yellow fever, although by no means new, has, it appears, received striking confirmation from the investigations of Dr. Reed and his colleagues, Dr. Carroll and Dr. Agromonte. When Dr. Reed first brought forward the proposition that the mosquito, as in malaria, acted as the intermediary host for the transfer of yellow fever from one patient to another, and that furthermore the bite of the mosquito was probably the only cause of infection, the announcement was treated with a certain amount of scepticism by many in the profession. However, later researches would seem to have clinched the argument in favour of this theory, and it is more than likely that experiments will result in conclusive proofs. The discovery that mosquitoes are chiefly instrumental in spreading both malaria and yellow fever would be of inestimable importance and would almost mark a new epoch in medicine.—Another paper of great value read at the Havana Congress was that by Dr. Walter Wyman, Surgeon-General United States Marine Hospital Service, upon Sanitation and Progress. Dr. Wyman takes the common-sense view that sanitation in many countries has not kept pace with scientific knowledge and declares that the problem of how to improve the sanitary condition of the poor quarters, to prevent the increase of foul, damp, dark, and overcrowded dwellings, and thus lessen the burden of the community without still further pauperising the people and attracting to the place other vagrants and criminals, is one of the most serious that confronts modern civilisation and municipal government. Dr. Wyman is of the opinion that a class of men to whom we should look for aid in advancing hygienic measures are the men of extreme wealth and believes that their attention should be directed to the vast amount of good to be done by the employment of their capital in backing up sanitary improvements "The methods by which such men may assist in public sanitation may not be so obvious or numerous as other methods of advancing the public welfare. Yet the influence of a man of great wealth could be distinctly felt in the advancement of sanitary legislation and in the perfection of sanitary administration. Moreover, the use of large capital in the improvement of the dwellings of the poor appears to be as noble and sensible a method of the employment of capital as can be found." The housing of the New York poor is as bad as anywhere in the world and is undoubtedly a potent cause of sickness. Dr. S. A. Knopf speaks on the situation as follows: "The present condition of the tenement houses in New York is so serious that the evils arising therefrom are a distinct menace to the welfare of the community. There are at present over 44,000 tenement houses in the old city of New York and new tenement houses are being erected at the rate of about 2000 a year. These are in many respects worse than the old buildings erected 30 years ago. They are badly constructed and so planned that many rooms depend for their light entirely upon long, narrow, dark air-shafts, which instead of giving light and air are merely stagnant wells emitting foul odours and diseases." The tendency of modern medicine is rather towards prevention than cure. The very first steps towards prevention must be to enable all to live under satisfactory health conditions. While the poor in most large cities are housed as at present it is impossible to prevent disease. The fact must also be borne in mind that an insanitary area in a town is a source of contagion and a menace to the rich as well as the poor. Thus it is false economy on the part of the wealthy to ignore the unfortunate position of the indigent; it would be wiser policy on their part to expend some of their money in making it possible for every individual to live under good sanitary conditions.

March 14th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Medical Society of Victoria: Presidential Address.

DR J. W. BARRETT, the retiring President of the Medical Society of Victoria, departed somewhat from the stereotyped form in his valedictory address. After referring to the continued progress of the society and the interest evinced in its proceedings he remarked on the absurdity of some of the customs of Victorians. Notwithstanding a beautiful, temperate, yet sunny climate, tubercle was too much in evidence. The people lived in villas, sleeping among the more numerous tubercle bacilli in the damper air near the ground and carefully excluded the sunlight by overhanging verandahs and window-hangings. Promiscuous spitting was also very common and should be prohibited by law. Another absurdity was the holiday custom. The maximum temperature in Victoria was reached about Jan. 20th. The State schools broke up about Dec. 20th and resumed about Jan. 20th. February was the most trying month, not because it was the hottest but because the resistance of the individual had been lowered by the previous heat. Why not have the holidays in February? Again, why make Easter fall on a variable date, sometimes in April rains, sometimes in March? Why not fix it for the second week in March and let people enjoy a respite after the heat? The bulk of Dr. Barrett's address dealt with the population problem. He showed that nowhere in the world was found the sudden and great drop in the birth-rate which had occurred in Australasia in the last 15 years. He attributed it to the extensive and deliberate adoption of means for restricting families, and he considered that the so-called "emancipation of woman" was largely responsible for this state of affairs. Practically all careers had now been thrown open to women, while previously marriage was the only one; and ambitious women preferred the business to the old-fashioned career. They might even marry and pursue their profession or business by avoiding maternity. But such a choice on a large scale meant that women were doing that which men could do and leaving undone that which men could not do. No woman now, in bearing a child, thought of the State or of doing it a service, like the old Roman matrons. Medical men should understand the question in all its many-sided aspects and be in a position to give advice, and that advice might be that it was not possible to cheat the Almighty without paying a very heavy penalty—personally and racially. The personal penalty was an old age cramped mentally and morally with attendant neuroses, and in which the individual could not look back to a life fully spent and in which he or she had graduated in all the faculties of human relationships.

Typhoid Fever in Sydney.

The medical adviser to the Sydney Water and Sewerage Board, Mr. T. Mailler Kendall, has presented a report dealing with the incidence of typhoid fever in Sydney during last year. Altogether, he stated, the epidemic had been very severe and the mortality great. The greatest incidence occurred during the first quarter of the year, especially during March, and the least in the third quarter. The largest number of cases—241, or 25 5 per 10,000 of population—occurred in the city itself. Mr. Kendall attributed the prevalence of the disease to deficient sanitary control, both as regards drainage and the removal of refuse.

Sanatorium for Zymotic Diseases at Melbourne.

The new hospital or sanatorium for zymotic disease at Melbourne has just been completed. It is situated at Wode island on the river Yarra, and was commenced during the plague outbreak. The buildings are of the most modern type. Two wards are provided, each with nine beds, isolated from each other and separated also from the quarters of the staff and administrative offices. The floors are of Trinidad asphalte and the whole of the interior of the wards has been so constructed as to admit of thorough cleansing and disinfection. There is also ample provision in the way of disinfecting appliances, bathrooms, and lavatories, and a pathological and bacteriological laboratory has been added. The drainage

will pass into a large tank, from which it will be pumped and thoroughly disinfected before being discharged into the river.

Inebriates Act of New South Wales.

Last session Mr. Creed, M.L.C., succeeded, after repeated attempts, in placing upon the statute-book of New South Wales an Inebriates Act, providing for the establishment of suitable homes for inebriates under proper supervision. Quite a volume of regulations under the Act has just been gazetted. These regulations provide that applications for licences under the Act must be endorsed by any two duly qualified medical practitioners, clergymen, or justices of the peace who have known the applicant intimately for not less than two years. Another provision is that no licence shall be issued for any persons to establish an institution for inebriates until its locality has been declared suitable and the buildings, grounds, and appliances necessary for efficiently carrying on such an institution shall have been inspected and approved by a Government visiting committee and the inspector-general of insane and declared by them in writing to the principal under-secretary to be fully suitable and sufficient for such a purpose. The 42nd regulation is as follows and has been adversely criticised as possibly giving opportunity for maladministration:—

> In the event of an inquest being held upon any patient who shall have died at a licensed institution the proceedings thereof shall not be published, nor shall any information with regard to them be furnished to the press for publication by any person unless, in the opinion of the coroner or the patient's next friend or executor, it is necessary for such information to be made public in the interests of justice and then it shall be supplied by the coroner only in any form and to any person he may think fit.

Newcastle Hospital, New South Wales.

The annual report of the Newcastle Hospital showed that satisfactory progress was being made with the erection of the additional buildings forming a nurses' home and operating wing. In the out-patient department the number of attendances had increased from 3718 to 4214. The committee think that "there is greater imposition practised by out-patients than can be detected by the present means of inquiry." The income for the past year was £3808, and the expenditure was £3039. The average cost per in-patient per annum was £54 17*s.* 3*d.*; the average death-rate was 8·19.

Illegal Use of Medical Titles.

At Broken Hill, New South Wales, recently, Mahomed Fandledeen, a native of India, was charged under the new Medical Act (New South Wales) with illegally using the title of "Doctor," and was fined £50, with costs. Two other cases against a man who styled himself "Professor" and a "Chinese doctor," were dismissed. At Collingwood, R. V. Danne was charged with representing himself to be a doctor of medicine while not registered in Victoria. The defendant said that he was prepared to plead guilty and to consent to a fine of £5 and £5 5*s.* costs. The prosecution agreed and a verdict was given accordingly without calling evidence. The defendant gave a remarkable death-certificate recently in a case where an inquest was held—viz., that the deceased was "still-born," and under the heading, "Duration of life," put "a few hours."

Death of Dr. L. E. F. Neill.

The somewhat sudden death of Dr. Leo E. F. Neill from pneumonia came as a great shock to the profession in Sydney, of which he was a most gifted member. He had a brilliant career at the Sydney University, where he graduated in arts before studying medicine and carried off several scholarships and gold medals, chiefly in classics. In his medical course he was equally successful, graduating with honours in 1890. After two years' residentship at the Prince Alfred Hospital he visited America and made himself familiar with the methods obtaining in the leading hospitals there. He then settled in practice and soon earned an enviable reputation for so young a man. He was assistant surgeon at the Prince Alfred Hospital and surgical tutor and assistant surgeon at the Women's Hospital. He was also a great footballer and played in leading matches against the other colonies.

Feb. 8th.

THE annual distribution of prizes to the Volunteer Medical Staff Corps (London Companies) will take place this evening (Saturday) at 8 P.M. Mrs. J. Edward Squire will distribute the prizes.

Obituary.

SIR EDWIN SAUNDERS, F.R.C.S. ENG., F.G.S.

THE death took place at his residence, Fairlawn, Wimbledon Common, on March 15th, of Sir Edwin Saunders at the advanced age of 87 years. It was at his house that the first steps were taken in 1857 to unite together those practising dental surgery by the formation of the Odontological Society. He was the first treasurer of the society and subsequently filled the office of councillor, vice president, and president in 1864 and 1879. He was until quite recently one of the trustees and on his resigning that office he was unanimously elected an honorary member. Sir Edwin Saunders was amongst the earliest to memorialise the Royal College of Surgeons of England with a view to obtaining recognition by examination and diploma for dental surgeons. He, with others, in 1857 established the Dental Hospital of London and Medical School in Soho-square and retained for many years a keen interest in that institution. It was owing to his self-sacrifice and liberality that the building in Leicester-square was equipped and handed over free from debt. He took an active part in the management until it was decided to build an entirely new hospital. With this movement he did not agree and accordingly dissociated himself with the hospital. At the meeting of the International Congress in London in 1886 he occupied the chair of the dental section. He took an active part in the British Dental Association in the early years of its existence and at the meeting in 1886 was the president. For over 50 years Sir Edwin Saunders held the appointment of dental surgeon to the late Queen, and in 1883 received the honour of knighthood. Sir Edwin Saunders was married to Marion, daughter of Mr. E. Burgess, and on the occasion of their golden wedding, as a fitting memorial to his long professional career, his friends presented him with an illuminated address and Lady Saunders with a diamond brooch.

Medical News.

UNIVERSITY OF CAMBRIDGE.—At a congregation on March 14th the following were admitted to medical and surgical degrees.

M.D.—J. Gutch, M.A., and W. M. Sing, M.A., Christ's.
M.S.—R. H. Urwick, M.A., Trinity; A. H. Style, B.A., Emmanuel.
M.B. and B.C.—E. H. Coleman, B.A., St. John's.

—Applications for the John Lucas Walker Studentship in Pathology, value £200 for three years, are to be sent to Professor Woodhead by April 16th. Candidates who are not members of the University are eligible.—Several important modifications in the regulations for the M.B. degree are proposed by the Medical Board in a report dated March 11th which has just been published.—Tenders for the erection of the new Botany Schools, amounting to nearly £23,000, have been accepted by the Senate. The building operations will begin forthwith.

NAVAL AND MILITARY EXHIBITION.—With the approval and under the patronage of Earl Roberts, the Commander-in-Chief of the army, the directors of the Crystal Palace Company will commemorate the jubilee anniversary of the Great Exhibition of 1851 by holding in the building which was originally erected by Sir Joseph Paxton in Hyde Park and subsequently transferred to Sydenham a Naval and Military Exhibition in the coming summer. Here will be illustrated the important innovations of the past 50 years in all branches of naval and military warfare. There will also be a series of special displays, comprising tournaments, historical tableaux, and miniature battles. The council of advice is composed of about 300 officers of both services. While affording instruction and amusement to the general public the exhibition should prove a means of helping the families of soldiers dependent upon the various naval and military charitable funds. These institutions have availed themselves of the gift by the Crystal Palace Company of 50,000 guinea season tickets, the entire proceeds of the sale of which will be credited to the particular societies disposing

of them. The tickets are now ready for issue and will be available until April 1st of next year. The proceeds of special concerts and other entertainments will also be devoted to these charities. The date of opening has been fixed for May 2nd and the exhibition will remain open for a period of five months.

AN IN MEMORIAM GIFT.—Miss H. Beatrice Kekwick of Bramcote Lodge, Scarborough, has given £1000 to the Scarborough Hospital and Dispensary, in memory of her father, the late Mr. John Kekwick of Cairnforth, Rotherham.

HEALTH OF BATH RURAL DISTRICT.—At the meeting of the Bath Rural District Council held on March 9th the medical officer of health (Mr. C. Harper) presented his annual report for 1900. This showed that the population of the district was estimated at 28 285, the area being 27,266 acres. The deaths in the 19 parishes were equal to a rate of 11·84 per 1000. The birth-rate corresponded to a rate of 24·35 per 1000.

ROYAL STATISTICAL SOCIETY.—A meeting of this society was held at its rooms, 9, Adelphi-terrace, Strand, W.C., on March 19th, the President, Lord Avebury, F.R.S., being in the chair. A paper, being the essay which was successful in the Howard medal competition of the session 1899–1900, was read by Dr. J. F. J. Sykes on "The Results of State, Municipal, and Organised Private Enterprise on the Housing of the Working-classes in London and other Large Cities in the United Kingdom."

APPOINTMENT OF A MEDICAL OFFICER OF HEALTH.—At the meeting of the Axminster Rural District Council held on March 14th it was reported that there were five applicants for the post of medical officer of health. Each candidate had been required to fix his own remuneration and the gentleman who mentioned the lowest was elected. Mr. G. Evans of Seaton, who had been medical officer of health for 13 years, complained that he had not received any notice of the termination of his engagement, but the explanation was given that the appointment, being a yearly one, expired at the end of the year.

MEDICAL FEES.—At the Truro County Court, held on March 15th, Mr. A. L. Salmon, M.R.C.S. Eng., L.S.A., sued a patient for £11 for professional attendance and medicine. Mr. Salmon had attended defendant from September, 1900, to January, 1901, and had called in Dr. R. H. Clay of Plymouth in consultation. The solicitor for the defence said that he would submit to judgment except in regard to two items—viz., 10*s.* for medicine on Jan. 6th, and 2*s.* for a visit on Jan. 22nd. The defendant also contended that on three different occasions the medicines were inaccurately dispensed. Judge Granger said that the evidence did not satisfy him that the wrong medicine was sent, and he did not think that a court had ever been asked to take away the character of a professional man on such flimsy evidence. He gave judgment for £11 and costs.

ROYAL INFIRMARY, HULL. In proposing the adoption of the 118th annual report of the committee of the Hull Royal Infirmary at a meeting held in the infirmary buildings on March 14th, Sir James Reckitt, Bart., the chairman, said that for some years past hundreds of patients had been turned away from the institution who ought to have been admitted for treatment if there had been room. In one week 25 patients were sent out of the institution insufficiently cured, but there were other cases of more importance waiting, and they would probably have died if room had not been made for them. It was therefore inevitable that the institution should be increased as soon as possible. A meeting would soon be called for the purpose of making the infirmary a rallying point for some memorial to the life of Queen Victoria the Good. Sir Robert M. Craven seconded the adoption of the report and said that at the present time the hospital was totally inadequate for its purposes. He referred to the difficulty in getting surgeons and said that he did not think that they would succeed unless they increased their salaries. He hoped that the institution would never have a female doctor. He suggested that the whole of the staff should be on the standing committee. He also remarked that what used to be a down-trodden profession was asserting itself and, like the skilled workman, the surgeon demanded payment for his skill and they would have to pay it. The report was adopted.

UNIVERSITY COLLEGE OF SOUTH WALES.—Mr. Alfred Thomas, M.P., has been elected President of the University College of South Wales in succession to Lord Tredegar who has held the office during the last five years and who is debarred by statute from re-election.

BRISTOL UNIVERSITY COLLEGE COLSTON SOCIETY.—At a committee meeting held on March 7th it was stated that during 1900 the subscriptions of this society amounted to £405. In the present year the amount contributed is £422. The committee resolved to grant £400 to University College.

EXETER LUNATIC ASYLUM.—At the meeting of the Exeter City Council held on March 13th it was stated that the cost of maintenance for the Exeter patients in the asylum had been reduced from 12*s.* 10*d.* to 10*s.* 6*d* weekly, and thereby £900 had been saved, and that a corresponding reduction would be made in the poor-rate.

APPOINTMENT OF A COLLIERY SURGEON.—Dr. Llewelyn Roberts of Newtown, Montgomeryshire, has been elected surgeon to the Great Western Colliery, Pontypridd, in succession to the late Mr. J. L. Leckie who held the position for many years. The number of men employed in the colliery is over 2000 and they contribute 3*d.* in the pound of their earnings towards the salary of the surgeon. There were 35 applications for the appointment. A committee of the men selected two of the candidates and on March 11th and 12th a general ballot of all the colliers employed took place with the result indicated.

LEEDS GENERAL INFIRMARY.—The report for the past year shows a deficiency of over £8000. The cost of each bed occupied was £68 2*s.* 0¾*d.*, as against £64 12*s.* 2*d.* in 1899. The average cost of the in patients had been increased partly by their having each stayed one day longer, but the chief reason had been the increase in the cost of living. The coal bill showed more than £700 extra and drugs and surgical dressings £522 extra. The number of out-patients had also increased. The alterations of the old casualty department and the building of the new sitting- and bedrooms for the resident staff had cost £4172. Mr. Charles Lupton made an earnest appeal for funds.

Parliamentary Intelligence.

HOUSE OF COMMONS.

THURSDAY, MARCH 14TH.

Civil Surgeons and Nursing Sisters in South Africa.

Sir ANDREW AGNEW asked the Financial Secretary to the War Office whether the civil surgeons and nursing sisters employed in tending the sick and wounded in South Africa would be entitled to the same war gratuity as those connected with the army.—Lord STANLEY: Civil surgeons, civil veterinary surgeons, and nursing sisters are employed under a definite contract as to pay and are not entitled to any war gratuity.

Medical Attendance for Soldiers' Families.

Mr. ARCHDALE asked the Financial Secretary to the War Office whether the wives and families of soldiers, embodied militia, or reservists serving with their corps, were only entitled to free medical attendance when residing within reach of an officer of army medical corps or of a civil practitioner engaged at military contract rates; and, if so, would he say who was to pay for medical attendance for those who lived outside that distance and were too poor to pay for themselves.—Lord STANLEY: It has been explained to the House before that it is not possible to provide medical attendance for those residing at a distance from military headquarters.

Enteric Fever Infection.

Sir WALTER FOSTER asked the Financial Secretary to the War Office whether he was aware that clothes of men dying in South Africa from enteric fever were returned to this country in a dirty state; and whether, in consequence of the danger of infection now increased by the prevalence of plague in Cape Colony, he would order that the kits of soldiers dying from disease should be thoroughly disinfected before being returned to this country or destroyed and proper compensation made to their relatives.—Lord STANLEY: No clothing of men dying in South Africa is returned to the Clothing Department at home, and nothing is known of any having been sent home privately. In accordance with the Regimental Debts Act the personal effects, except special articles left by will belonging to a soldier dying on active service, are sold by auction on the spot. Special cautionary instructions as to the spread of infection have been sent out.

FRIDAY, MARCH 15TH.

The Vaccination Question.

Mr. LEVY asked the President of the Local Government Board whether, having regard to the declaration of his predecessor in that House on July 20th, 1898, that the administration of a compulsory vaccination law would be neither necessary nor desirable, and the tacit

promise of the same Minister on the same date that the Local Government Board would not do anything to interfere with the relations between vaccination officers and the guardians who employed and paid them, he would withdraw the circular issued by the Local Government Board.—Mr. CHAPLIN: As the question of the hon. Member contains two distinct statements affecting myself, perhaps before it is answered I may be allowed to make a very brief personal explanation. As to the first statement the hon. Member, who is new to the House, is probably not aware that I have repeatedly explained that it referred solely to the concession which was made by the Government on the previous evening. With regard to the second statement I have repeatedly shown that the statement and the inferences which are drawn from it are both of them equally erroneous.—Mr. WALTER LONG: My right hon. friend has dealt with the allegations in the question and it only remains for me to say that I decline to withdraw the circular.

Hospital Provision in the Scottish Highlands.

Mr. WEIR asked the Lord Advocate whether in view of the difficulty experienced in securing suitable hospital accommodation in the poorer districts of the Highlands and Islands of Scotland he would consider the expediency of introducing legislation such as would provide for the establishment and maintenance of hospitals in congested areas.—The LORD ADVOCATE: The Secretary for Scotland would not be disinclined should a favourable opportunity present itself to amend the Congested Districts (Scotland) Act, 1897, in one or two respects and in this event he will consider whether the point mentioned in the hon. Member's question can be provided for.

Civil Surgeons in the Army.

Mr. RANDLES asked the Secretary of State for War, having regard to the fact that the civilian veterinary surgeons at home stations during the war emergency were drawing pay at the rate of £250 per annum and allowances, which brought their pay to over £30 per month, and received a gratuity of two months' pay after 12 months' employment and an extra month's salary for each additional six months' service, (1) could he state what increase of salary and gratuity the Government proposed to pay those civilian medical practitioners who had been engaged at home stations for the last 12 months and upwards at a salary of only £270 per annum; and (2) could he explain why the gratuity of £100 for the first year of service with troops at home and £50 for the succeeding years awarded to civilian medical practitioners holding commissions as medical officers to volunteer corps and militia regiments had been refused to the civilian medical practitioners who offered their services during the war, seeing that the rate of pay to the civil surgeons proceeding to South Africa had been increased from one guinea to one and a half guineas per diem with same allowances and gratuity.—Lord STANLEY, replying on behalf of the Secretary of State, said: In regard to the first paragraph of the question the civilian surgeons and veterinary surgeons employed at home stations are paid at army rates and there is no intention of making any alteration in their pay. In regard to the second paragraph medical officers belonging to the militia and volunteers are treated as officers under army rules, while private medical practitioners are treated according to the terms on which they engage.

Pneumonia on H.M.S. "Britannia."

Mr. EUGENE WASON asked the Civil Lord of the Admiralty whether he was aware that an outbreak of influenza followed by pneumonia occurred on board H.M.S. *St. Vincent* at Portsmouth last year owing to the contamination of the site of her moorings, and that since the moorings had been dredged there had not been any similar outbreak on board the *St. Vincent*; could he state how long she was away from her moorings; and would he cause the *Britannia* to be removed to other moorings, and not to be again moored in the same position until the site had been thoroughly dredged and the accumulation of filth for years removed.—Mr. PRETYMAN: There was an outbreak of influenza accompanied by lung and other affections on board the *St. Vincent* in 1899. The ship was specially inspected at the time by the Medical Director-General; the whole question of her sanitary condition was inquired into and the ship was thoroughly overhauled. There was no evidence that the outbreak was due to contamination at the site of the moorings, but the moorings were in fact dredged because it was found that the ship touched the bottom at low water. There has been no outbreak of any importance since the date named. The *St. Vincent* left her moorings on July 6th, 1900, and returned to them on Oct. 29th. A committee, composed of Sir Henry Norbury (Medical Director-General), Professor Caulfield, Inspector-General Fisher, and Fleet Surgeon May, has been engaged during the last two days in examining H.M.S. *Britannia* and making inquiry into all the circumstances likely to effect the health of the cadets. The committee has now terminated its inquiry and its report is expected immediately. Until that report is received I should prefer to postpone answering the last part of the hon. Member's question, but I may say there is no reason to believe that there is any accumulation of filth under the *Britannia*.

TUESDAY, MARCH 19TH.

Medical Provision at Shoeburyness.

Mr. BARTLEY asked the Secretary of State for War whether he was aware that no provision existed in cases of illness among officers at Shoeburyness, there being no hospital, no arrangement for nurses, and not even a single member of the Army Medical Corps; whether he was aware that this week a young officer who had served in South Africa was taken ill with double pleurisy which resulted in double pneumonia; that he was left in his own quarters where he died, and had it not been for his parents would have had no nursing or medical appliances; that recently, in consequence of an officer developing scarlet fever, the whole batch of officers in that officer's quarters had to be put under tents; and whether immediate steps would be taken to provide a suitable hospital, nurses, and appliances at Shoeburyness for officers when taken ill there.—Mr. BRODRICK. It has not been found possible to provide accommodation for hospital wards for officers at home stations except at Netley and Woolwich and in special cases at Aldershot. Officers, except when suffering from wounds or illness from active service, are only admitted to these hospitals on the recommendation of a medical board. At Shoeburyness there are two medical officers. For the case of pneumonia one day and one night nurse were engaged from the beginning by the medical officer and remained to the last. As regards the case of scarlet fever some young officers residing in the same corridor were very properly removed; it does not appear a hardship that they were placed under canvas.—Mr. BARTLEY: Will the right hon. gentleman undertake that some provision will be made for these severe cases that occur sometimes?—Mr. BRODRICK: This officer was duly attended by the proper medical officer and had a day nurse and a night nurse from beginning to end. I do not in the least admit that in an officer's quarters proper attention cannot be given.

The South African Hospital Commission.

Mr. DALZIEL asked the First Lord of the Treasury whether he could state the amount of salary paid respectively to members of the South African Hospital Commission in addition to the amount allowed for personal expenses.—Mr. BALFOUR replied that a sum of £1250 was paid to each member of the Commission except the chairman.

Mr. DALZIEL asked whether he was to understand that the chairman was not paid.—Mr. BALFOUR replied that the chairman was not paid.

WEDNESDAY, MARCH 20TH.

The South African Hospitals Commission and its Report.

In the early hours of the morning—indeed, shortly after midnight—there was a long debate on the South African Hospitals Commission and its report. The debate arose upon a supplementary vote in Committee of Supply for the expenses of temporary commissions. Mr. BURDETT-COUTTS opened the debate. He laid down these propositions: that the inquiry of the Commission had been partial and imperfect, that its conclusions were lame and impotent, and that its recommendations for reform were framed altogether on wrong lines. The subject, he said had been investigated in a manner which had thrown a cloak over the true extent and nature of the defects of the Army Medical Department and had concealed the causes of those defects and the responsibility for them. While they had condemned a general for inaction in the field they were content with an inquiry which did not point out the connexion between cause and effect and which failed to push home the responsibility in any quarter. The hon. Member then went on to blame the Commission for not securing powers to take evidence on oath, for accepting the guidance in all its movements of the organisation of the Army Medical Department, and for refusing certain evidence offered it. He condemned the examination of patients in batches while they were still in hospital under the care of officers of the department. In South Africa, he said, nine-tenths of the patients were so examined. In his original complaint he had made a great point of the bad feeding of the convoys by train, but while this was so out of 154 patients examined only seven were asked any questions as to their feeding while in train convoys and four of these said what he had always maintained—that they hardly ever had anything but bully beef and biscuits. As for the reform of the medical provision of the army, he appealed to the Secretary of State to go outside this report in framing his scheme. If there was an era in which not so much new legislation was necessary as that we should set our house in order, and if for that purpose a full, relentless, and searching examination of its defects were necessary, then the worst model they could take for such an investigation and the weakest and rottenest basis of reform was this farce of an inquiry for which Parliament was now asked to pay.—Mr. DALZIEL quoted from the report and argued that the Army Medical Department had proved inadequate for the work of the campaign.—Sir WALTER FOSTER submitted that the report was tantamount to an admission of the case made out before the appointment of the Commission. If they analysed the figures in the report and examined the other material they would find a very grave condemnation of the medical arrangements. The only recommendation of the Commission was that there should be appointed a Committee to do the work the Commission had not done. The object of the Commission was not to prepare a defence of the Army Medical Department but to inquire into the care and treatment of sick and wounded. The Royal Army Medical Corps had not been attacked in this House. Members had fully recognised that the Corps had done as well as it could do in the circumstances, and probably it had done as well as any other department of the army, but the Royal Army Medical Corps was unequal to the demands made upon it. Civil surgeons had to be relied upon largely, and the number of these civil surgeons employed gave some measure of the deficiency which would have to be made good in the Royal Army Medical Corps.—Mr. BRODRICK said that the question before the House was simply the question of how the Commission had performed its duties. There was no doubt that the Member for Westminster (Mr. Burdett-Coutts) had made a most vehement attack upon the character of the inquiry and the principles brought to bear upon it by the Commissioners. In the few words which he (Mr. Brodrick) proposed to say he would like to ask the House as a matter of common sense, upon what grounds were these sinister motives imputed to this Commission. Supposing, as the hon. Member had suggested, there had been a determination to shield the Royal Army Medical Corps, to burke the intended inquiry and to report something which might be favourable to the authorities, what could be the motive of these independent gentlemen, not one of whom had anything whatever, so far as he knew, to gain from the Government in the matter, who were absolutely independent of all Government influence, and who were themselves gentlemen of high character—what could be the motive which would induce them to act in the manner which the hon. Member believed they had acted throughout this inquiry? He held no brief for the Commission. They were a body of high-minded gentlemen who had given an immense amount of hard work without any remuneration of any sort or kind. They had travelled many thousands of miles, and they had simply taken up this business for a public purpose and with the honest intention of reporting on the state of things they found. If their report was not altogether satisfactory to his hon. friend and other Members of the House he could only say that so far as he was concerned he was not bound by the four corners of the report. In the nature of things it could not be an exhaustive report. It was not an accurate statement to say that the Commission had recommended the appointment of a Committee to do the work which they themselves were appointed to do. The Commissioners were appointed to consider and report upon the care and treatment of the sick and wounded in the campaign. They might or might not have carried out that charge to the satisfaction of hon. Members, but he thought they were fully justified in their recommendation that a Committee should be appointed to inquire and report upon the steps necessary to put the Royal Army Medical Corps upon a proper footing. He thought that the Members who had spoken had pressed the matter against the Commission in

some respects a great deal too far. But at this hour he was not going to weary the House by trying to discuss the points in detail. As a matter of fact, he had been so busy with other work recently that he had not been able to go into the subject of this report very deeply. He did not wish to make any gulf between himself and those Members who did not think this report the best medium for the commencement of a reform of the army medical service. He would remind the House, however, that the shortage of the Royal Army Medical Corps lay as much at the door of Parliament as of any other body. He did not think they ought, looking at this matter quite impartially, to cast an unmerited slur upon men who had tried to do their duty properly according to their light. Nor did he think it ought to be supposed for a moment that a Commission appointed to discuss the care and treatment of the sick and wounded during the campaign could cover the whole ground or be their only guide as regarded the future of the army medical service. He would also ask the House to believe that he was not looking in the reorganisation of this service for salvation either to this Commission alone or to the *personnel* of the Royal Army Medical Corps alone. He was perfectly aware that the past of the Royal Army Medical Corps had been unsatisfactory in two respects. First of all they had had far too small a choice of men to bring into the corps, and until they could remedy that defect they should not get an efficient service, and in the second place they had had far too little elasticity in the service. He assured the House that he approached the subject with a perfectly open mind. He did not feel at all certain that they could build altogether upon the existing foundation They would not limit themselves to any official sources for inspiration in the reorganisation of the corps and he was not in the least without hope that before very long the steps that they were about to take would enable them to bring before the House a scheme which would give them, what they were determined to have, a really effective Royal Army Medical Corps.—Several Irish Nationalist Members continued the debate, among the number Dr. THOMPSON, who bore testimony to the devotion to duty and hard work of the members of the Royal Army Medical Corps and insisted that if there were any blame in the matter it was to be attributed, not to the members of the corps, but to the system under which they had to work.

ROYAL COMMISSION ON ARSENICAL POISONING.

WEDNESDAY, MARCH 13TH.

THE Royal Commission on Arsenical Poisoning met on March 13th, in the Westminster Palace Hotel, London, and proceeded with the examination of witnesses. Lord KELVIN occupied the chair and the other Commissioners present were Sir William S. Church, Sir William Hart Dyke, M.P., Professor Thorpe, and Dr. B. A. Whitelegge, with Dr. G. S. Buchanan, secretary.

Evidence of Dr. George Reid.

Dr. GEORGE REID, medical officer of health of the county of Stafford, was the first witness examined, and in reply to the Chairman he said that the administrative county of Stafford was divided into 57 sanitary districts, of which 38 with a population of 677,968 were urban districts, and 19 with a population of 229,148 were rural districts. There were 50 medical officers of health in the administrative county, seven of whom acted for joint districts formed in each case by the union of two authorities. As it seemed desirable, so far as clinical evidence was concerned, to cover the geographical county, he appealed to medical officers of health of the county boroughs as well as to those of districts within the administrative county for information and in every case he obtained very full information. As time was of importance, it was not found practicable to communicate direct with every medical practitioner in the county, but he suggested that this should be done locally by the different medical officers of health, and in most cases he believed his suggestion was acted upon. He thought it desirable, however, to make an exception in the case of members of medical staffs of the general hospitals in the county, of which there were 14. In this way he obtained information about a large number of cases—altogether 667 from the county. Samples of beer were taken and as the results of the analyses were reported the clerk of the county council communicated with the implicated beer-sellers, intimating that they would incur a serious responsibility unless they discontinued the sale of arsenical beer, and witness visited the implicated breweries in order to ascertain what steps the brewers proposed to take to put a stop to the sale of the arsenical beer and to obtain what information he could as to the source of the arsenic. In the case of two breweries, one in Manchester and the other in Liverpool, he communicated with the medical officer of health of those cities, but he included among his visits four breweries in Shropshire adjoining the Staffordshire boundary. Without exception the brewers afforded him every information, and each brewer was either actually engaged in calling in the contaminated beer or had already done so. He believed this was thoroughly done in most cases, either voluntarily or in consequence of his visit, though in many cases large quantities of arsenical beer were retained in the hope of obtaining a return of the duty. This involved some amount of risk, and in one instance at least which led to a prosecution the beer after being interdicted by the brewer was sold by the tenant of a tied public-house. He thought it was unfortunate that the Inland Revenue Department did not at once intimate whether or not the duty paid would be refunded. Altogether, 140 samples of beer were analysed in the first stage of the inquiry, and of these 15 were found to be decidedly arsenical and seven very slightly so. 11 samples of glucose and brewing and other sugars were analysed, and two of the first-mentioned, both obtained from the same manufacturer (Bostock), were found to be arsenical. The amount of arsenious oxide in the contaminated beers varied from a trace (well under one-twentieth of a grain per gallon) to just over half a grain per gallon. The 140 samples of beers analysed were collected in 28 different sanitary districts from 140 distinct sources, and they represented the beers of 90 brewers, including 26 which were home brewed. He might mention that only in one instance did they fail to trace the contamination of the beer to the use of Bostock's glucose. The exception was a brewery in Shropshire and in that case they did not succeed in tracing the source of the contamination, the brewer assuring witness that he had not used Bostock's glucose within the last 12 months. Of the 667 cases tabulated by witness 290 occurred in Lichfield (rural), 91 in Lichfield (urban), 88 in Darlaston (urban), 69 in Stone (urban), 31 in Brownhills (urban), 14 in Cannock (urban), 13 in Tipton (urban), five in the County Borough of Hanley, four in the County Borough of Walsall, and four in Stafford (urban). He had no official knowledge of any fatal cases, but from what he could ascertain one, if not two, deaths might have occurred. One remarkable and, from a clinical point of view, instructive fact had been demonstrated by the inquiry in Staffordshire—namely, that whereas at least 67 per cent. of the cases were attributable to one implicated brewery, another and larger implicated brewery, supplying a much larger population, did not give rise to recognisable cases of illness calling for medical treatment. In the first case the quantity of arsenic per gallon of beer was found to be a little over half a grain, while in the latter case only one-tenth of a grain was found. In both cases it so happened that the quantity of glucose used to malt was 20 per cent. and the amount per gallon 5·1 and 5·6 ounces respectively; but whereas in the former case one glucose only (Bostock's) was used, in the latter the brewer used a mixture of equal parts of three different glucoses, only one of which was Bostock's. Thus, while the actual quantity of glucose used was very much the same in both cases, the relative proportion of arsenical glucose per gallon of beer was 5·1 and 1·8 ounces respectively, a proportion which was consistent with the quantity of arsenic found in the two beers. As it would appear, then, that thousands of persons for an unknown period had been drinking beer containing one-tenth of a grain of arsenic per gallon without suffering any effects sufficient to call for medical attendance, the question arose, Was this the first occasion on which arsenical beer had been brewed, and might not some illness have previously occurred which, in view of what we now know, might have been attributable to arsenical poisoning? After an interval of about four weeks—about the end of the third week in January—a systematic collection of samples was again undertaken, attention being specially directed to the public-houses supplied by the previously implicated brewers. As the outcome of this second collection 43 samples of beer, 10 of confectionery, and five of golden syrup were analysed, and all were found to be free from arsenic. Circulars had also been addressed to most of the medical practitioners who had previously reported cases, and from the replies received it would appear that 60 of the original patients were still suffering from the symptoms. A few fresh cases were also reported by two medical practitioners, but from subsequent inquiry he was by no means satisfied that the cases were of recent origin. He doubted whether one-fiftieth of a grain of arsenic taken every day in food would produce symptoms, but in his opinion it would be very undesirable to have one-fiftieth of a grain in a gallon of beer. Questioned on the subject of future preventive measures Dr. Reid made the following statement, viz.:—In the first place, as the use of wholesome glucose in brewing is not injurious from a health point of view, and if it be a fact that, in this country at any rate, its use facilitates the brewing of light beers, it would seem to be a mistake either to prevent its being used or to impose any conditions which might, in view of the ignorance of the public regarding the question, lead to beers of a heavier quality being consumed. At the same time, effective steps should be taken to guard against any such unfortunate calamity as has recently been experienced, and I would suggest:—

(*a*) That no glucose or invert sugar shall be manufactured with sulphuric acid unless the acid has been made from sulphur and is arsenic free, and that the brewer shall obtain a guarantee to that effect from the sugar manufacturer with each consignment.

(*b*) That the Inland Revenue Department shall be called upon to exercise control over the quality of brewing materials from a health point of view by its being made part of the routine duty of excise officers to see that the above guarantee has been obtained and to periodically collect samples of such materials for analysis by the Somerset House officials.

(*c*) That such precautionary measures, combined with the exercise of the powers already possessed by sanitary authorities under the Food and Drugs Act, combined with additional powers enabling such authorities to seize and destroy contaminated beer, should suffice to prevent the possibility of a similar occurrence in the future and afford a satisfactory guarantee to the public that their interests were being looked after.

By Sir WILLIAM S. CHURCH: He understood that sulphuric acid made from sulphur was not likely to contain arsenic and that was the reason for his first suggestion.

By Professor THORPE: He thought that the public were entitled to have an assurance that every precaution would be taken in the future and they would not have that assurance if they realised that a substance was being used which, previously to its use, required a process of purification. His opinion in this connexion would not be altered if it were shown that by far the larger number of glucoses and inverts were made from pyrites, purified from arsenic and that these substances were free from arsenic.

Dr. Thomas Stevenson Examined.

Dr. THOMAS STEVENSON, Vice-President of the Chemical Society and of the Institute of Chemistry, lecturer on forensic medicine at Guy's Hospital and scientific analyst to the Home Office, was next examined. In the course of his evidence he stated that he went to Manchester early in the epidemic. On Nov. 28th he inspected the dead bodies of two women in the Crumpsall mortuary, saw and examined a considerable number of men and women in the Crumpsall Infirmary, and arrived at the conclusion that the patients were suffering from chronic arsenical poisoning and that probably the two women who were there dead had died from arsenical poisoning. He obtained viscera from the bodies of the two women referred to and from three other women and submitted them to analysis for arsenic and other mineral poisons. He ascertained that the five women had all been drinkers and four of them had drunk beer largely. The histories of the two women, their symptoms, and the post-mortem appearances externally, such as pigmentation rashes and the excessive accumulation of epithelial scales, all pointed to arsenic. In four of the five bodies arsenic was found in the viscera; in one

case only in notable quantity; in three cases in minimal amounts. Alice Booker died six days after ceasing to drink beer; 13½ ounces of her viscera yielded 0·011 (one-ninetieth) grain of arsenic calculated as arsenious oxide—or 0·0002 per cent. This was an appreciable proportion. Mrs. Thompson died 32 days after ceasing to drink beer. Her viscera yielded arsenic in detectable but unweighable amount. In the case of Alice Riley, who died 14 days after ceasing to drink beer, and in the case of Margaret McCabe, who died 52 days after ceasing to drink beer, similar traces of arsenic were detected. In the case of Mary Jane Dyer, who died 23 days after ceasing to drink beer, no arsenic could be detected, though the symptoms during life were those of arsenic. She was obviously a heavy drinker and the organs showed the effects of advanced alcoholism, more especially in the liver and kidneys. Dr. Dixon Mann obtained comparable results on analysing other portions of the viscera of the five women. The analyses were conducted separately, but before the inquest he and Dr. Dixon Mann compared their results and found them substantially the same. It was interesting to note for what lengthened periods arsenic remained in the body. Ordinarily arsenic might be detected in the urine of persons to whom arsenic was administered very soon after it was taken, and for from one to three weeks after it had ceased to be taken. Exceptionally it might be found in the urine after longer periods. Obviously, as arsenic was largely excreted by the skin as well as by the urine, the fact that arsenic could no longer be detected in the urine was not proof that there was none present in the body. One remarkable symptom of those suffering from beer-poisoning which he observed was the pigmentation of the skin, which was pretty generally observed among the patients. When arsenical neuritis followed acute arsenical poisoning such pigmentation was by no means general. It had been asserted, denied, and re-asserted that arsenic lingered for lengthened periods in the bones of those to whom it had been administered. Others asserted that it remained longer in other organs than in the bones. Nothing definite could be asserted as to this beyond the fact that it lingered longest in the extravascular parts, such as the epidermis. It was even asserted that arsenic was a normal constituent of the human body, notably of the thymus and thyroid glands, and the skin. That arsenic was occasionally found in minimal amounts in the human body he knew from his own analyses, but he was of opinion that its presence was adventitious. It was not easy to ascertain that a person had never taken arsenic medicinally, and when one considered the innumerable avenues—food, drink, water, and the atmosphere—by which arsenic might be ingested it was not necessary in order to account for its presence to assume arsenic to be a normal constituent of the body. He could assert that in the majority of cases where he had tested various organs of the body for arsenic he had found none. Among the cases submitted to him by the Home Office and the Treasury he had occasionally found a little arsenic, but it was exceptional. He could not say that he had found it in the viscera of a healthy person. In consultation he saw a girl in Somerset who had been poisoned by arsenic. She had marked neuritis, could not walk, but he could discover no pigmentation in her skin. In another case a lady had had several doses of arsenic administered, and though she was very ill and her life was in danger she had no pigmentation. In the Hyères epidemic, where wine-drinkers were affected, pigmentation was a marked feature and, of course, pigmentation was known in connexion with arsenic given medicinally.

By Sir WILLIAM S. CHURCH: Arsenic was a poison which had engaged his attention very frequently clinically, pathologically, and analytically. Very frequently the symptoms that indicated arsenical poisoning were connected with the stomach and the intestines. The absence of gastric symptoms was calculated to make medical men slow in recognising that the case was likely to be one of arsenical poisoning. As to pigmentation there could be no doubt that when attention was called to this many patients were stripped and pigmentation was found in cases where it had not been expected. Except that it was very pronounced the neuritis did not appear to him to differ very much from what they had been acquainted with under the name of alcoholic neuritis. The general appearance of the patients was almost indistinguishable from what they would call alcoholic neuritis. The only patient whom he saw in a dying condition was in Crumpsall Infirmary and the patient was dying apparently from paralysis of the diaphragm. This year he had had to deal with a case of arsenical poisoning in which five out of seven or eight in one family were affected, and in that case he found extensive fatty degeneration without very great enlargement of the organ involved. The enlargement that had been so common in these cases in Manchester and Liverpool pointed to the probability of their being alcoholic as well as arsenical.

By Dr. WHITELEGGE: Do you regard alcohol as being a predisposing cause to arsenical poisoning?—I have had no opportunity previously to this epidemic of observing that.

In further examination Dr. STEVENSON said that exceptionally perhaps many articles of food might contain arsenic. The use of manures in the preparation of which arsenical sulphuric acid was employed must increase the chances of the admixture of arsenic with vegetables. Arsenic was said to have been found in cruciferous plants, such as turnips and cabbages, and even in potatoes. Many chalybeate waters were arsenical and the ferruginous deposits from waters that were good for drinking purposes often contained arsenic, even when the water itself was practically arsenic-free. Rivers from which drinking-water was obtained might contain arsenic, which frequently was cast into rivers from tanneries. Again, the application of arsenical substances to such things as apples and wines to destroy blight must result in the occasional ingestion of arsenic into the human body. The common use of arsenical sheep dips brought in the risk of introducing arsenic into our food supplies. Arsenic was given off during the burning of coal and coke containing arsenic. Soot was decidedly arsenical, and the soot-laden air of our cities was not destitute of arsenic, nor were smoked articles of food, such as ham, kippers, &c., chops, and grills. The method of preserving food by the use of borates introduced arsenic into food. He had met with no borax of commerce or boric acid quite free from arsenic. As these substances were used in the preservation of milk, cream, fish (fresh, salted, and dried), game, and even fresh meat, they had here another source of arsenic in the human body. He mentioned these sources of the introduction of arsenic into the body, not that he thought significant quantities of arsenic were thereby ingested, but to point out that some allowance must be made and some agreement come to as to the quantity of arsenic which was permissible in articles of food, drink, and drugs. There was a very varying susceptibility to arsenic among individuals. By far the larger number of adults could bear eight-minim doses of liquor arsenicalis three times a day for several weeks without the supervention of toxic symptoms—i.e., a dose of 0·22 grain arsenious oxide per diem. A few people could tolerate only a fraction of that amount without the appearance of distressing symptoms. But the same idiosyncracy was met with as to many drugs—chloral, opium, mercury, potassium iodide, &c., and even with respect to articles of food—onions, ginger, bananas, shell-fish, pork, and so on. In laying down restriction as to arsenic in food the idiosyncracy of persons with respect to it could not be fully met. He believed that 0·05 (1-20th) grain per diem was in the great majority of cases a safe quantity. As to the accumulative action of arsenic he wished to remark that the term cumulative, or accumulative poison, was a relative one. All poisons were, in a sense, cumulative. Even the rapidly excreted alkaloids, such as strychnine, showed a cumulative action when small safe doses were given at too brief intervals—i.e., before the major portion of the previous dose had been excreted. Arsenic was no more cumulative than other poisons which, like it, were rapidly excreted. When it was given in repeated small doses either tolerance was established—apparently a very rare occurrence—or input and output of the drug were balanced before a fatal dose accumulated in the body, or a toxic amount was retained in the body before input and output were balanced. If the daily dose were 0·22 grain—the ordinary full dosage—and one-fifth of the amount absorbed in the body were excreted per diem, when there was 0·9 grain in the body the input and output per diem would be balanced; and this condition would be arrived at in a fortnight. If, on the other hand, the daily excretion of arsenic were only one-tenth, input and output would be balanced when the body contained two grains; and this condition would be reached in about three weeks. But two grains might be a fatal dose. Certainly in the majority of cases in which arsenic was administered the daily excretion exceeded one-tenth of the arsenic taken. Dr. Stevenson, in conclusion, dealt with the detection of arsenic in beer and its quantitative determination. He gave the reasons which induced the Brewers' Commission to recommend the use of Reinsch's test. This test, he said, caused the rejection of beers containing more than one part of arsenic per 2,000,000 of beer, about one-thirteenth grain per gallon, and in skilled hands, he added, its delicacy was even greater than that. Using this test he found that by far the larger proportion of beers sold in London to the southern counties were arsenic-free, but that beers sold in several parts of the kingdom contained small quantities of arsenic—generally proportions which would not as he believed prove injurious to health.

The Commission then adjourned.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ABBOTT, C. E., M.R.C.S., L.R.C.P., and L.M. Irel., has been appointed Medical Officer to the No. 1 District of the Cheltenham Union, vice Beavan, deceased. Also Civil Medical Officer for Examining Army Recruits for Cheltenham.

ADAMS, JOSEPH DIXON, M.D. St. Andrew's, M.R.C.S., L.S.A., has been re-appointed District Medical Officer by the Langport (Somerset) Board of Guardians.

AHERN, JOHN M., L.R.C.P. Irel., L.R.C.S. Irel., L.M., has been appointed Assistant Medical Officer to the Warneford Asylum, Oxford.

BERRY, FREDERICK CHARLES, B.A., M.D., B.Ch. Trinity College, Dublin, has been re-appointed Medical Officer of Health for Burnham, Somerset.

COWAN, J. J., M.B., C.M. Edin., has been appointed District Medical Officer, Upton-upon-Severn Union.

ELLIOTT, C. N., M.B., M.Ch. Dubl., has been re-appointed Medical Officer of Health for the Thrapstone Rural District.

FAIRHALL, G. V. HAMLYN, M.R.C.S., L.R.C.P., has been appointed House Surgeon to the Royal Alexandra Hospital for Sick Children, Dyke-road, Brighton.

FLETCHER, JAMES, M.B., C.M., D.P.H. Aberd., has been appointed Medical Superintendent to the Bristol City (Fever) Hospital.

FOX, T. C., M.B. Lond., F.R.C.P., M.R.C.S., has been appointed Dermatologist to the Bridge School, Witham, Metropolitan Asylum District.

HARPER, CHARLES, L.R.C.P. Edin., M.R.C.S., has been re-appointed Medical Officer of Health by the Bath Rural District Council.

HUTCHINSON, J. A., M.D. Durh., M.R.C.S., has been re-appointed Medical Officer of Health by the Northallerton Rural District Council.

INGLE, CHARLES D., L.R.C.P. Lond., M.R.C.S., has been re-appointed District Medical Officer by the Langport (Somerset) Board of Guardians.

KENNISH, T. L., M.D. Edin., has been re-appointed Medical Officer of Health, Winslow, Bucks.

KINGSFORD, B. H., M.B. Lond., M.R.C.S., L.R.C.P., has been appointed Certifying Factory Surgeon for the Woking District of Surrey.

LANGRAN, WILLIAM, L.R.C.P. & S. Edin., L.A.H. Dubl., has been appointed Medical Officer of Health by the Axminster Rural District Council.

LAWTON, F. C., M.R.C.S., has been appointed District Medical Officer, Malmesbury Union, vice W. R. Tolerton, resigned.

LINDSAY, F. W., L.R.C.P., L.R.C.S. Edin., has been re-appointed Honorary Surgeon, Victoria Eye and Ear Hospital, Hereford.

MAHOOD, ALLAN E., M.B. Irel., F.R.C.S. Eng., has been appointed Surgeon to the Bideford Infirmary.

MCLACHLAN, A. R., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Medical Superintendent of the Infirmary, Brentford Union, and Assistant Medical Officer of the Schools, vice J. H. Reynolds, resigned.

MENZIES, J. M., M.B., C.M. Edin., has been appointed Medical Officer of Health, Long Sutton Urban District, vice R. Parkhurst, resigned.

MUDGE, ZACHARY BELLING, L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer of Health by the Phillack (Cornwall) Urban District Council.

NANCE, H. C., F.R.C.S. Eng., has been appointed Surgeon to the Jenny Lind Infirmary for Sick Children, Norwich.

PITTS-TUCKER, F. A., L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer, Ely Union, vice M. J. Tulk, resigned.

RENSHAW, I., L.D.S. Irel., has been appointed Dentist to the Cottage Homes, Rochdale Union.

RICHARDS, S. H., M.B., C.M. Edin., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed District Medical Officer, Middlesborough Union, vice W. Knott, resigned.

ROBERTS LLEWELYN, M.D. Lond., L.R.C.P., M.R.C.S., has been appointed Medical Officer to the Great Western Collieries, Pontypridd, vice J. L. Leckie.

SANDOE, JOHN WORDEN, M.D., B.S. Durh., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Broadclyst District of the St. Thomas's (Exeter) Union, vice James Somer, resigned.

SCARR, JOHN, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer to the Cottage Homes, Rochdale Union.

SMALLWOOD, M. E., L.R.C.P. Lond., M.R.C.S., has been appointed Second Assistant Medical Officer to the Infirmary, parish of St. Leonard, Shoreditch, London.

SPRAKELING, R. J., M.R.C.S., has been re-appointed Medical Officer of Health for the Borough of Bootle.

STANSFIELD, F. W., M.D., Ch.B. Vict., D.P.H. Camb., has been appointed Public Vaccinator to the Reading Union, vice O. Lowsley, deceased.

SUTCLIFFE, WM., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer, South-East District, West Bromwich Union, vice H. Sutcliffe, resigned.

THOMAS, DAVID JONES, L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer of Health by the Merthyr Tydvil District Council.

THOMPSON, WALTER, L.R.C.P. Lond., F.R.C.S. Eng., has been appointed Honorary Surgeon to the Leeds Public Dispensary.

TINLEY, E. F., M.D. Durh., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health by the Whitby Urban District Council.

WALKER, J. F., L.R.C.P. Lond., M.R.C.S., has been appointed First Assistant Medical Officer to the Infirmary, Whitechapel Union, vice H. G. Ellery, resigned.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ASYLUM FOR IMBECILES, Leavesden, Kings Langley, Herts.—Senior Assistant Medical Officer, unmarried. Salary £250 per annum, with rations, lodging attendance, and washing.

BRISLINGTON HOUSE PRIVATE ASYLUM, N. Bristol. Second Resident Medical Officer, unmarried. Salary £150, board, lodgings, and washing.

BRISTOL GENERAL HOSPITAL.—Assistant House Surgeon and a Casualty House Surgeon. Salary £50 per annum, with board, residence, &c.

CARDIFF INFIRMARY.—Assistant House Physician for six months, renewable. Salary at the rate of £75 per annum, with board, washing, and apartments.

CATERHAM ASYLUM FOR IMBECILES, Caterham, Surrey.—Medical Superintendent. Salary £600 per annum, rising £50 annually to £800, with unfurnished house, coals, gas, washing, milk, and vegetables.

CHELSEA, BROMPTON, and BELGRAVE DISPENSARY, 41, Sloane-square, S.W.—Honorary Physician.

CHELSEA INFIRMARY, Cale-street.—Temporary Second Assistant Medical Officer, age not to exceed thirty years. Salary at the rate of £70 a year, with furnished apartments, rations, washing, coals, and gas, and £3 10s. a year in lieu of beer.

CORPORATION OF MANCHESTER.—Junior Assistant to the Medical Officer of Health. Salary £200 per annum.

DOVER HOSPITAL.—House Surgeon, unmarried. Salary £100 a year, increasing after 12 months' service, with board, lodging, and washing.

EASTERN DISPENSARY OF BATH.—Resident Medical Practitioner. Salary £130 per annum, with furnished apartments, coals, gas, and domestic attendance.

EAST SUFFOLK AND IPSWICH HOSPITAL.—Two House Surgeons, unmarried. Salaries £110 for Senior and £80 for Second House Surgeon, with board, lodging, and washing.

ECCLESALL BIERLOW UNION.—Resident Medical Officer. Salary £130 per annum, with board, lodging, and attendance.

FRENCH HOSPITAL AND DISPENSARY, 172, Shaftesbury-avenue, W.C.—Resident Medical Officer, speaking French, unmarried. Salary £80 a year, with full board.

GENERAL INFIRMARY, Leeds.—Resident Ophthalmic Officer. Salary £50 a year, with board and lodging.

GLAMORGAN COUNTY ASYLUM.—Junior Medical Officer, unmarried, not over thirty. Salary £150, with board, lodging, washing, and attendance.

GOVAN DISTRICT ASYLUM, Crookston, near Paisley, N.B.—Senior Assistant Medical Officer. Salary to begin at £150 a year, with rooms, board, laundry, and attendance.

GUEST HOSPITAL, Dudley.—Senior Resident Medical Officer. Salary £100 per annum, increasing to £120, with board, residence, attendance, and washing.

HAMPSTEAD HOSPITAL.—Resident Medical Officer for six months, eligible for re-election. Salary at the rate of £120 per annum, with rooms, coals, and gas.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months, with honorarium of £25.

HOSPITAL FOR WOMEN, Soho-square.—House Physician for six months. Salary £30

HULL ROYAL INFIRMARY.—Junior Assistant House Surgeon. Salary £60, with board and lodging.

JESSOP HOSPITAL FOR WOMEN, Sheffield.—House Surgeon, unmarried. Salary £50 per annum, with board, lodging, and washing.

LONDON COUNTY ASYLUM, Hanwell, W.—Dispenser. Salary £110 per annum, rising by £10 a year to £150, with dinner.

LONDON OPEN-AIR SANATORIUM, Pinewood, near Bracknell, Berkshire.—Resident Physician, unmarried. Salary £200, with furnished apartments, board, attendance, and washing.

MANCHESTER PORT SANITARY AUTHORITY.—Port Medical Officer. Salary £350 per annum.

MANCHESTER ROYAL INFIRMARY.—Resident Surgical Officer, unmarried. Salary £150 per annum, with board and residence. Also Assistant Director in the Clinical Laboratory. Salary £50 per annum.

NORFOLK AND NORWICH HOSPITAL.—House Physician for two years. Salary £80 per annum, with board, residence, &c.

NORTHAMPTON GENERAL INFIRMARY.—Physician, not under twenty-five years of age.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Dental Surgeon.

PATHOLOGICAL DEPARTMENT, YORKSHIRE COLLEGE, Leeds.—Junior Demonstrator. Salary £120.

ROTHERHAM HOSPITAL.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and washing.

ROYAL ALBERT HOSPITAL, Devonport.—Resident Medical Officer, unmarried. Salary £110 per annum, with board and lodging.

ROYAL SEA BATHING HOSPITAL, Margate.—Assistant Resident Surgeon. Salary £60 per annum, with board and residence.

ROYAL SOUTHERN HOSPITAL, Liverpool.—House Surgeon. Salary 60 guineas per annum, with board and residence.

ROYAL SURREY COUNTY HOSPITAL, Guildford.—Resident House Surgeon. Salary £80, board, residence, and laundry.

SCARBOROUGH HOSPITAL.—Assistant House Surgeon for three months. Salary £75, with residence, board, and washing; if approved, to be Senior for twelve months. Salary £90, with residence, board, and washing.

ST. MARY'S HOSPITAL, Paddington, W.—Ophthalmic Surgeon.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary at rate of £24 per annum, with board, washing, and residence.

SUFFOLK GENERAL HOSPITAL.—House Surgeon. Salary £100 a year, with board, lodging, and washing.

TOTTENHAM HOSPITAL.—Honorary Surgeon. Also Assistant Honorary Physician.

TUNBRIDGE WELLS GENERAL HOSPITAL.—Resident House Surgeon, unmarried. Salary £100 per annum, with board, furnished apartments, gas, firing, and attendance.

VICTORIA HOSPITAL FOR CHILDREN, Chelsea, S.W., and the VICTORIA CONVALESCENT HOME, Broadstairs.—House Physician for six months. Honorarium of £25, and board and lodging in the Hospital.

VICTORIA HOSPITAL, Folkestone.—House Surgeon. Salary £100 per annum with board, residence, and laundry.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon. Salary £75 per annum, with board, residence, &c.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Assistant House Surgeon for two months, to be followed by six months as House Surgeon.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House Physician for six months. Honorarium at rate of £75 per annum, with board, lodging, and washing.

WREXHAM INFIRMARY.—House Surgeon. Salary £100 per annum, with board and washing.

Births, Marriages, and Deaths.

BIRTHS.

ALLEN.—On March 17th, at Gipsy-lane, Forest-gate, E., the wife of R. Hugh Allen, M.B., of a daughter.

DUDFIELD.—On March 17th, at Blomfield-road, Maida-vale, W., the wife of Reginald Dudfield, M.A., M.B., of a son.

HUMPHERY.—On March 11th, at Wellgarth House, Armley, Leeds, the wife of Geoffrey Percy Humphery, M.B., C.M., of a daughter.

OWEN.—On March 18th, at St. Alban's-place, Blackburn, the wife of O. Trafford Owen, M.B. Edin., of a son.

SHACKEL.—On March 17th, at Brand House, Ludlow, the wife of G. A. Shackel, L.R.C.P., M.R.C.S., of a son.

MARRIAGES.

HASSALL—LORAINE.—On the 14th instant, at St. John's Church, Chester, by the Rev. Canon Scott, assisted by the Rev. C. Packer, John M. Hassall, M.D., of Northwich, to Sophia Jane, widow of the late George S. Loraine, of Estancia Sta. Maria, Queguay Uruguay.

JAMIESON—MILNES.—On 20th March, at St. Andrew's Cathedral, Singapore, by Rev. D. Holland Stubbs, T. Hill Jamieson, M.B., C.M. Edin., of Penang, to Mary, eldest daughter of J. Milnes, Esq., Huddersfield, Yorkshire.

DEATHS.

ROGERS.—On March 14th, at Upper Baker-street, N.W., William Richard Rogers, M.D., M.R.C.P. Lond., and M.R.C.S., aged 84 years.

SAUNDERS.—On March 15th, at Fairlawn, Wimbledon-common, Sir Edwin Saunders, F.R.C.S., aged 87 years.

WEDMORE.—On the 13th March, at Chapmanslade, Wilts, Charles Ernest Wedmore, M.A., M.B. Cantab., M.R.C.S. Eng., third son of the late Thomas Wedmore, Esq., J.P., of Druids' Stoke, Bristol, aged 50 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE PECULIAR PEOPLE AGAIN.

AN inquest held recently at Canning Town on the body of a child, 10 months old, who had died from pneumonia, brought to light most of the circumstances which usually attend the deaths of children whose parents belong to the sect known as the Peculiar People. The child became ill, and so an elderly woman was called in to give advice. The elderly woman was apparently one of the Peculiar People accustomed to nurse members of her sect, while her opinion was valued on account of her age, and she made suggestions as to the child's diet. The child grew obviously worse, and the elder of the Church, who does not appear to have been a witness before the coroner, was summoned, and he, according to the usage of his sect, laid hands upon the child and prayed. So the child died without medical aid, which might have saved the child's life, and as the medical man who made the post-mortem examination very properly declined to say positively and on oath with regard to an infant whom he had never seen alive that if called in he could have saved the infant's life, the jury returned a verdict of "Death from natural causes," at the same time censuring the parents for their neglect. In the course of the inquiry the coroner, Mr. G. E. Hilleary, and one or two jurors tried to rouse in the child's parents a sense of the melancholy absurdity of their conduct, but in vain. For example, to a suggestion that the Bible says, "Those that are sick need a physician," the witness replied, "I beg your pardon, it says, 'They that are whole need not a physician,'" an answer which shows that others besides the enemy of mankind can dislocate and misquote Scripture to suit their own purposes and to support their perversity. We agree with a juror who ejaculated "It's all bosh," but at the same time it is very dangerous bosh and very difficult to deal with. We called attention recently to the law in an American State which forbids persons, who are not scientifically qualified, to pretend to heal disease. It would probably be difficult to deal with the elders of the Peculiar People without importing the element of religious persecution, but it would be much more just that they should suffer than the parents whom they instruct in their views and whose children they pretend to heal. The parents are now held responsible, if anyone is, when a child dies or suffers unnecessarily; when a grown-up person does so neither the elder nor anyone else suffers more than the ineffectual censure of a coroner's jury.

A HARD CASE.

To the Editors of THE LANCET.

SIRS,—I should like your opinion on the following case:—My practice being for sale, a gentleman came to see me, and after going fully into matters agreed to purchase the lease of the house and the practice. The purchaser's father, being a solicitor, prepared all the papers and arranged a day for settlement. Meanwhile a house became vacant almost next door to mine, when the purchaser's father, thinking it a suitable house, threw me over on the day arranged for settlement and took the other house. My solicitor says that I have no redress, having no signed papers, although all was prepared for signature. I believe it will be the opinion of the profession that such action should merit disapproval. I am, Sirs, yours faithfully,

M.R.C.S. ENG.

*** If our correspondent states his exact experience he has been treated very shabbily.—ED. L.

TENBY COTTAGE HOSPITAL AND ITS OUT-PATIENT SYSTEM.

AT the annual meeting of the governors of the above institution which was held on Jan. 25th a discussion arose as to the arrangements for seeing out-patients. They seem somewhat haphazard, or, as Mr. B. Harries, a member of the committee, put it, "There was not much red-tape about the hospital." So far as we understand the report, if an out-patient should come at a day and an hour when one of the medical staff happens to be in the hospital he is seen by the medical man in question. If, however, the patient should come when a medical man is not there he is attended to by the matron. Dr. D. A. Reid, who is a member of the medical staff, said that the medical staff ought to do the work and to attend regularly. The mayor thought that in that case everyone who was sick would go to the hospital and that the practitioners in the town would suffer. Dr. Reid, however, did not agree with this suggestion and proposed that the secretary should communicate with the practitioners in the town and ask them if they would fall in with the scheme. It was agreed that this should be done. In a letter from Dr Reid, which appears in the *Tenby and County News* of March 6th, it is stated that the three members of the staff who were not present at the annual meeting all declined to support Dr. Reid's ideas. We can only say that to our minds the position is a most unfortunate one. We do not doubt the matron's ability to dress a cut finger or a cut head, but one of these days a cut finger will develop tetanus or a patient with apparently only a cut head will turn out to have a fractured skull from which he will very possibly die. The members of the staff who agree in allowing the patients of an institution of which they are in medical charge to be treated by an unqualified person without their supervision are sailing perilously near the reef of "covering." There is one passage in Dr. Reid's letter to which we are quite unable to agree. He says: "If the subscribers were provided with out-patient tickets as at other hospitals and dispensaries, all fear of the charity being abused would be removed." If this is really the case the hospital subscribers of Tenby must be of a very different nature from those of other towns, for in our experience the average hospital subscriber is only too ready to give a letter to anyone who asks, without any inquiry as to the fitness of the recipient for charitable relief.

RAMPANT QUACKERY.

WE have received from a correspondent the following documents bearing upon a quack business which is carried on apparently in a way by no means creditable to its proprietors: two pages from the *Sydney Bulletin* of Dec. 15th, 1900, and Jan. 12th, 1901, a letter in answer to a correspondent containing a Diagnosis Form, and a little two-leaved circular containing qualifications and testimonials. The documents emanate from a firm of quacks calling themselves "Drs. Freeman and Wallace, Authors, Lecturers, and Scientific Analysts, the World-famed Specialists, Specialties, Nervous and Private Complaints, Blood and Skin Diseases." "Dr." Freeman describes himself as Director of the Freeman and Wallace Electro, Medical, and Surgical Institute, and as of Dr. Harmon's College, Cor. Cal., U.S.A.; while "Dr." Wallace sets forth that he is chief consulting staff, L.R.C.P.E., L.P.S.G., L.M.R.C.E., M.D. Cal. Now with Freeman we have nothing to do, but it is obvious that if Wallace is really what he purports to be the licensing bodies whose diplomas he abuses should take steps to remove him from their roll. The diagnosis form contains the usual mis-statements and 52 questions in all, dealing mainly with sexual hypochondriasis. Question 52 is possibly the most important—namely, "Have you inclosed our fee of £1?" The letter to the patient is, we must say, a very cunningly-worded document. Take the following passage. It commences by saying: "We are forwarding to you by this post a copy of our new pamphlet on Nervous and Private Complaints. ..... If you are in perfect health we trust the work will prove sufficiently interesting to warrant a careful perusal. If, on the other hand, you are in doubt as to whether you require medical advice you should carefully examine your morning's urine; if after remaining stationary for two days and nights it be clear, it is most probable your organs are in a healthy condition, but if not clear you should answer the questions and we will forward our opinion by return of post." We also learn from the advertisement in the *Bulletin* of Jan. 12th, 1901, that "The Freeman and Wallace Electro, Medical, and Surgical Institute consulting staff rise superior to the false code of ethics which tyrannically bind (*sic*) the medical profession ....." Wallace, we may add, claims to have a testimonial from Sir J. Dominic Corrigan. Freeman and Wallace are evidently quacks of the worst type, but there are always fools who will continue to go to such. We have called the letter to the patient a cunningly-worded document; it is worse, it is a lying document, for it implies that the urine becoming cloudy after two days' standing is a sign of disease. Now we have no hesitation in stating that if the urine of 1000 healthy persons were taken and allowed to stand for two days in practically every case it would become cloudy either from alkaline decomposition and deposit of phosphates, or from deposition of mucus or of urates.

LEGITIMATE OR ILLEGITIMATE COMPETITION.

To the Editors of THE LANCET.

SIRS,—In a small country town A sells his practice to B. Immediately on B taking over the practice, A having cleared out, C, a neighbouring practitioner, takes in a partner D and places D in the small town where B lives. I may add that C resides three miles away from D. Kindly give your opinion as to whether C and D have acted strictly in accordance with the usual professional etiquette towards their brother practitioner B.—I am, Sirs, yours faithfully,

March, 1901. JUSTICE.

*** There can be no doubt that C's action, taken immediately upon the departure of A, was directed to obtaining some of the practice recently transferred by A to B; but it is difficult to say that such action is necessarily unprofessional. Medical men are certainly, to some extent, in competition with each other, and we must make allowances for individual views on what is and what is not correct conduct towards a fellow practitioner. Many men would not have liked to do what C and D have done, but as many would consider their course one of legitimate enterprise. In matters where there can be no hard-and-fast law every man must be a rule to himself.—ED. L.

THE PROGRESSIVE MEDICAL ALLIANCE.

To the Editors of THE LANCET.

SIRS,—I inclose a circular which was handed to me in Oxford-street one day last week. It is unnecessary to comment on this from a point of view of professional morality—it speaks for itself, but it is at least a matter for wonder that associations like the Medical Defence Union and others of a kindred character allow such grave abuses to remain without apparently any effort to remove them. In more than one of the London weeklies there are to be seen advertisements of "hospitals" and "dispensaries" managed by "highly and fully qualified medical men," and such advertisements have appeared regularly for some considerable time. Surely something can be done to put a stop to practices

which are a disgrace to the profession and do so much to degrade it in the eyes of the public. Either the statements contained in these circulars are true or they are not. If they are true and the men in charge of these places are really qualified and registered medical men, then no time should be lost in bringing the matter before the General Medical Council with a view to having the names of men who have so far dishonoured their profession struck off its rolls; if they are not, surely it is the business of societies formed for the protection of the profession and the public to expose the falsehood.—I am, Sirs, yours faithfully,

March 15th, 1901 FAIR PLAY.

*** "Fair Play" has come across our old friend the Progressive Medical Alliance. We refer him and others of our readers who may be interested in this institution to THE LANCET of Sept. 29th, 1900, p. 981, and of Jan. 19th, 1901, p. 224. Unless some such steps as we, and "Fair Play" (in the above letter), suggest are taken it is of little use to say anything in these columns about such quack establishments, with a view that is of keeping people away from them. For the class of person who wastes his time and money at the Progressive Medical Alliance does not read THE LANCET.—ED. L.

HOW INFECTION IS SPREAD.

THE gross carelessness and disregard of duty towards one's neighbour which exists among certain members of the community was well exemplified by a case which occurred at Birmingham recently. A woman brought a child for treatment to the General Hospital at Birmingham and the child was at once recognised to be suffering from scarlet fever. The woman, it is reported, was told to stand on one side until the health authorities had been communicated with and the child could be removed to the fever hospital. On the arrival of the ambulance, however, both mother and child had disappeared. She was accordingly sought under the name and at the address which she had given at the hospital, but the address was found to be false, and no one in the street knew anything of either mother or child. However, Mr. Parker, the superintendent of the health department, took up the matter and after diligent search the woman was found and the child was removed to the fever hospital. The room which she occupied was a small attic in a house containing a number of other children. Ignorance is, of course, no excuse in the eye of the law, and we presume that the woman was told at the hospital what was the matter with the child. She is presumably poor, being a hospital patient, but we hope that the sanitary authorities will, as well as taking steps for the disinfection of the house in which she lived, summon her before the magistrate for exposing her child, when, even if on account of her poverty she be not punished, she will learn that no one has a right to expose his or her neighbour to the risk of contracting so severe an infectious disease as scarlet fever.

MALE PROBATIONER NURSES FOR MENTAL CASES.

To the Editors of THE LANCET.

SIRS,—Can you or any of your readers inform me of any hospital or institution where male probationers are taken to train as mental nurses. I am, Sirs, yours faithfully,

March 15th, 1901. H. B.

"MEMORIAL TO THE LATE DR. ARCHIBALD HAMILTON JACOB."

AMOUNT already announced in THE LANCET—£323 7*s.* 6*d.*

	£	*s.*	*d.*		£	*s.*	*d.*
Mr. W. Neale	1	1	0	Mr. W. Stamer	1	0	0
Dr. W. Harrison	0	10	6	Mr. P. O'Donoghue ...	1	0	0
Professor R. J. Anderson	0	10	6	Mr. G. W. Thompson ...	1	0	0
Mr. George McManus ...	0	10	6	Mr. W. P. Walsh	0	10	6
Mr. John Ringwood ...	1	1	0	Dr. J. O'Kelly	0	10	0
Mr. James Taylor	1	1	0	Miss Cahill	1	1	0
Mr. D. O'Sullivan	1	1	0	Mr. P. Dunn	1	1	0
Mr. P. Merrin	1	1	0				

Cheques and postal orders are to be made payable to the honorary treasurers (Sir Charles A. Cameron, C.B., 51, Pembroke-road, Dublin, and Mr. L. H. Ormsby, Vice-President of the Royal College of Surgeons in Ireland, 92, Merrion-square, Dublin), and crossed "Ulster Bank." The honorary secretary is Mr. George F. Blake, J.P., Registrar of the Royal College of Surgeons, Dublin.

THE FRIENDLY SOCIETIES' ANNUAL CONFERENCE.

THE annual conference of delegates from the 33 friendly societies in the United Kingdom was held at Birmingham on March 14th. Mr. J. J. Stockall was in the chair and the vice-chairman was the Rev. Frome Wilkinson. The Lord Mayor of Birmingham attended the opening of the proceedings and welcomed the delegates in the name of the city. Reports were presented by Mr. J. L. Stead and Mr. Cleveland, the conference secretary, who had been appointed to act as arbitrators to meet representatives of the General Medical Council at a meeting which was held in London on March 13th. (We are quoting from the report in the *Birmingham Gazette* of March 15th, but we fancy that the meeting referred to was a conference with the British Medical Association and not with the General Medical Council.) Be this as it may, Mr. Stead is reported as saying that "the doctors' representatives denied that the question of a 'wage-limit' had been settled, so that they were practically in the same position as they were three years ago." After the shorthand report of the reply of the medical men had been read Mr. Sandford (Foresters) moved a proposal urging the meeting to make a firm stand against the wage-limit. Mr. Hulse (Foresters) said that in some parts of the country he regretted that friendly societies did not pay their doctors a reasonable sum. The President said that they had admitted this to the medical men and he hoped that the mention of this fact would induce those societies which underpaid their medical men to do differently. This remark was greeted with "Hear, hear." Finally, Mr. Sandford withdrew his motion, but one was adopted to the effect that the conference could not under any circumstances agree to a wage-limit, while the arbitrators were to be re-appointed to continue the conferences with the medical men.

Despite the resolution about the wage-limit we must say that the meeting showed more hope of some satisfactory decision being arrived at in the future than former meetings have done. It is no light thing for a conference of friendly societies to allow that medical men can be underpaid. But as regards the wage-limit we seem to have arrived at an *impasse*, and we can only hope that the next conference between the societies and the profession will be productive of some good result. If a wage-limit is to be barred why should not a graduated scale of payments be adopted? There is no reason why a working man with 20*s.* a week should pay the same as one who earns 60*s.* If the former is to pay 1½*d.* per week the latter might well be asked to pay at least 4*d.* per week.

A DEPARTURE IN ANNUAL REPORTS.

WE have received a copy of the twenty-first annual report of the Evesham Cottage Hospital, from which it appears that the hospital is doing good and increasing work. But our attention has been caught by an innovation in hospital reports which merits distinct disapproval. Under the epitome of cases it is stated that 38 successful operations were performed, 18 major and 20 minor. The 38 are then further subdivided by being allocated to four members of the staff, so that the public may learn that Mr. A and Mr. B had two successful operations each, while Mr. C had four and Mr. D the remaining 30. Such publicity must be unpleasant for Mr. D, for laymen can hardly fail to consider that he is 15 times as good a surgeon as Mr. A or Mr. B, and seven and a half times as good as Mr. C. Evesham Cottage Hospital is a small place and the harm done by publishing such a table may be proportionately small, but if hospital statistics of this sort are going to be made public in annual reports great harm and great injustice may follow. In this case we are sorry for Mr. D, who has been advertised at the expense of his colleagues.

Inquirer.—Dr. James Barry, Inspector-General of Army Hospitals, is always described as M.D. She was certainly educated in Edinburgh and was probably an M.D. of that university. The evidence points in this direction though we believe the source of Dr. Barry's degree has not been definitely settled. The Act which brought the Medical Register into existence had not been passed when Dr. Barry joined the Army.

Justicia.—In our opinion the fees should belong to A from the time that the purchase-money is paid. The matter is one for mutual arrangement.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Mar. 21st, 1901.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Mar. 15	29·76	E.	...	51	44	39	39	41	Overcast
,, 16	29·67	N.E.	0·06	62	45	38	38	39	Raining
,, 17	29·79	N.E.	...	81	50	37	42	45	Cloudy
,, 18	29·59	ENE	...	55	44	37	40	41	Overcast
,, 19	29·54	N.E.	...	77	43	36	36	39	Cloudy
,, 20	29·52	N.E.	0·21	45	42	35	38	39	Raining
,, 21	29·79	E.	0·08	68	43	37	37	40	Cloudy

During the week marked copies of the following newspapers have been received:—*Shields Daily Gazette, Manchester Guardian, Herts Observer, Accrington Observer, Dundee Advertiser, Worcester Chronicle, Liverpool Daily Post, Western Times (Exeter), Dunfermline Journal, Newcastle Chronicle, Yorkshire Post, Birmingham Argus, Warwick Advertiser, Derbyshire Courier, Bristol Mercury, Hereford Times, Kent Messenger, Hampshire Advertiser, Buckinghamshire Advertiser, Bolton Guardian, Stirling Observer, Walsall Advertiser, Glasgow Herald, Western Mail (Cardiff), Hyde Reporter, Cheltenham Press, Cheshire Observer, Sanitary Record, Dalkeith Advertiser, Cambrian Daily Leader, Perthshire Advertiser, Brisbane Courier, Sunderland Morning News, Cape Argus, Evening News (Portsmouth), Mining Journal, Hertfordshire Mercury, Newcastle Daily Journal, Daily Express (Dublin), Reading Mercury, Local Government Chronicle, Surrey Advertiser, Newcastle Daily Journal, Local Government Journal, Banbury Guardian, New York Times, Cornwall Gazette, Ayr Advertiser, Hastings News, Toronto Globe, Gazette des Hôpitaux, Le Courrier de la Presse (Paris), Eckington Express, Stowmarket Courier, Manx Sun, City Press, &c., &c.*

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

WEDNESDAY (27th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (28th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

FRIDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

SATURDAY (30th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (25th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish quare, W.).—8.30 P.M. Mr. T. H. Kellock: Two Cases of Abdominal Injury with Rupture of Viscera.—Mr. H. F. Waterhouse: A Case of Lateral Sinus Pyæmia and Cerebellar Abscess with Development of Cheyne-Stokes Breathing and Cessation of Respiration under Anæsthesia, Recovery after Two Operations.

TUESDAY (26th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—Paper:—Dr. W. Hunter: A Case of Pernicious Anæmia, with Observations regarding Mode of Onset, Clinical Features, Infective Nature, Prognosis, and Antiseptic and Serum Treatment of the Disease.

WEDNESDAY (27th).—HUNTERIAN SOCIETY (London Institution, Finsbury-circus, E.C.).—8.30 P.M. Paper:—Dr. W. H. Kelson.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND (20, Hanover-square, W.).—4.30 P.M. Informal Exhibition of Cases. 5 P.M. Meeting.

THURSDAY (28th).—CHILDHOOD SOCIETY (Library of the Sanitary Institute, 72, Margaret-street, W.).—8 P.M. Dr. F. Warner: Observations of Children after the Methods of Natural History.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (25th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Prof. C. Stewart: The Protection and Nourishment of the Young of the Vertebrata, and some New Additions to the Museum.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. A. Whitfield: Consultation. (Skin.)

TUESDAY (26th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. J. F. Payne: On Cancer, especially of the Internal Organs. (Lumleian Lectures.)

THE BROWN ANIMAL SANATORY INSTITUTION (University of London, South Kensington, S.W.).—5 P.M. Dr. J. Rose Bradford (Professor-Superintendent): The Protozoa in their Relation to Disease, with especial reference to the so-called Tsetse-Fly Disease of South Africa.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—5.30 P.M. Annual General Meeting.

WEDNESDAY (27th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Prof. C. Stewart: The Protection and Nourishment of the Young of the Vertebrata, and some New Additions to the Museum.

LONDON THROAT HOSPITAL (204, Great Portland-street, W.).—5 P.M. Mr. C. Woakes: Selected Cases. (Post-Graduate Course.)

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Acland: Bronchiectasis.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Smith: Consultation. (Surgical.)

THURSDAY (28th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. J. F. Payne: On Cancer, especially of the Internal Organs. (Lumleian Lectures.)

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Hutchison: A Lantern Demonstration.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Consultation. (Surgical.)

THE HOSPITAL FOR DISEASES OF THE SKIN (Stamford-street, Blackfriars).—3 P.M. Clinical Demonstration: Dr. P. S. Abraham.

FRIDAY (29th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Prof. C. Stewart: The Protection and Nourishment of the Young of the Vertebrata, and some New Additions to the Museum.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. H. Tilley: Consultation. (Throat.)

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It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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The Hunterian Lectures
ON
THE TOPOGRAPHICAL ANATOMY OF THE ABDOMINAL VISCERA IN MAN.

Delivered before the Royal College of Surgeons of England on March 4th, 6th, and 8th, 1901,

BY CHRISTOPHER ADDISON, M.D. LOND., F.R.C.S. ENG.,
PROFESSOR OF ANATOMY AT THE UNIVERSITY COLLEGE, SHEFFIELD.

LECTURE II.[1]

Delivered on March 6th.

MR. PRESIDENT AND GENTLEMEN,—At the conclusion of the last lecture we noticed: (1) that when the stomach is high in the abdomen the liver also is found high up and placed well under cover of the ribs, and in these cases also the transverse colon is generally high in the abdomen and mostly distended, and, in many cases, it passes upwards in front of the stomach into the vault of the diaphragm; (2) that the stomach may be distended without coming much lower in the abdomen, but that in the cases in which a distended stomach (usually of a cylindrical shape) extends low down in the abdomen, with the liver maintaining its normal level, the pylorus will not be displaced downwards to any material extent; and (3) that when the liver is enlarged and extends low down in the abdomen, the pylorus will be found low down, as well as, usually, the main part of the body of the stomach. These conclusions are further reinforced by considering the

LATERAL DISPLACEMENTS OF THE PYLORUS.

By means of the strong right part of the lesser omentum and the structures contained within it the first part of the duodenum with the pylorus is firmly held up to the under surface of the liver, and the position and obliquity of the pylorus by that means largely determined. In 34 cases the pylorus was on the middle line or to the right of it and in six cases to the left of it. The first group of 34 cases contains 14 cases in which the pylorus was on the middle line or not more than two centimetres to the right of it; in a further 14 cases it varied from two to four centimetres to the right; and in six extreme cases it was more than four centimetres—up to six centimetres—to the right of the middle line. The six cases in which the pylorus was to the left of the middle line varied up to 3·5 centimetres to the left. So that in 45 per cent. of the cases the upper border of the pylorus was not more than two centimetres from the middle line to one side or the other, and in 22·5 per cent. it was on the middle line or to the left of it. (The measurements relate in all cases to the upper border of the pylorus.) The direction of the pylorus was practically vertical in 60 per cent. of the cases, oblique in 25 per cent., and transverse in 15 per cent.

Displacements to the left.—In all but one of the cases in which the pylorus was on the middle line or to the left of it the liver extended low down and far over to the left at a low level and in the remaining case had a very massive omental tuberosity fitting into the lesser curvature of the stomach, although the lower border of the liver did not extend to the left of the middle line in the plane of the upper border of the pylorus. These cases almost warrant us in saying *that when the liver is enlarged and spreads downwards across the abdomen at a low level we may expect to find the pylorus on the middle line or to the left thereof.* An examination of these cases does not lead to the conclusion that a pylorus to the left of its normal situation is particularly associated with an empty condition of the stomach, but if we look at those cases in which the pylorus was situated more than 3·5 centimetres to the right of the mid-line we find that they are specially associated with a well-filled or distended condition of the stomach.

Displacements to the right.—Professor J. Symington[2] pointed out that the left overhanging part of the liver is tilted upwards and to the right on its long left lateral ligament by the filling stomach. If this ligament be long and membranous the distended stomach can the more readily tilt the liver upwards and to the right and insinuate itself further to the right beneath the liver. The strong portion of the lesser omentum attaching the pylorus to the under surface of the liver has an obliquity downwards and to the left and would not resist a considerable movement in a right direction. A fair guide to the degree of lateral movement the liver has undergone may be obtained by noticing the situation and direction of the attachment of the falciform ligament to its anterior surface. On the diagrams of the liver, with the exception of a few of the early cases in which the point was unfortunately omitted, the attachment of the falciform ligament is indicated by interrupted lines. Those cases in which the pylorus was situated further to the right than usual are so uniform in the conditions they present of a well-filled or distended stomach (especially one that did not come much lower than usual in the abdomen), with the liver tilted upwards and to the right, so as to lie more or less completely under the right costal arch, that they may be sufficiently represented in tabular form.

Table showing the Conditions when the Pylorus is Displaced to the Right.

Case. No.	Distance to right of middle line of the upper border of the pylorus.		Remarks.
2	3·5	centimetres.	Stomach distended and low. Liver* a little tilted, low, and somewhat enlarged. Colon, no special feature.
14		,,	Stomach full. Liver tilted. Colon very distended, pressing up the stomach.
21		,,	All points the same as No. 14.
26		,,	Stomach full, thrown into folds. Liver not much tilted. Transverse colon normal.
27		,,	Stomach moderately filled. Stomach and liver both pushed down by intra-thoracic growth. Liver not tilted. Colon very tortuous and distended.
11	4	,,	Stomach full. Liver tilted.
28		,,	Stomach distended. Liver tilted and much pushed over to the right. Colon distended.
29		,,	Ditto in all respects.
5	4·5	,,	Stomach full. Liver and stomach pushed up and to the right by distended colon and intestines.
10		,,	Stomach very distended. Liver pushed almost entirely to the right of the middle line.
32		,,	Stomach very distended. Liver much tilted. Transverse colon prolapsed.
28		,,	Stomach very distended. Liver tilted.
35	5	,,	Stomach partly filled, thrown into folds. Liver and stomach both pushed upwards and to the right by an enormously distended colon. Liver almost entirely to the right of the middle line.
4	6	,,	Stomach distended. Liver large, not much tilted to the right. Colon low and tortuous.

* The tilting of the liver is of the left lobe to the right and upwards.

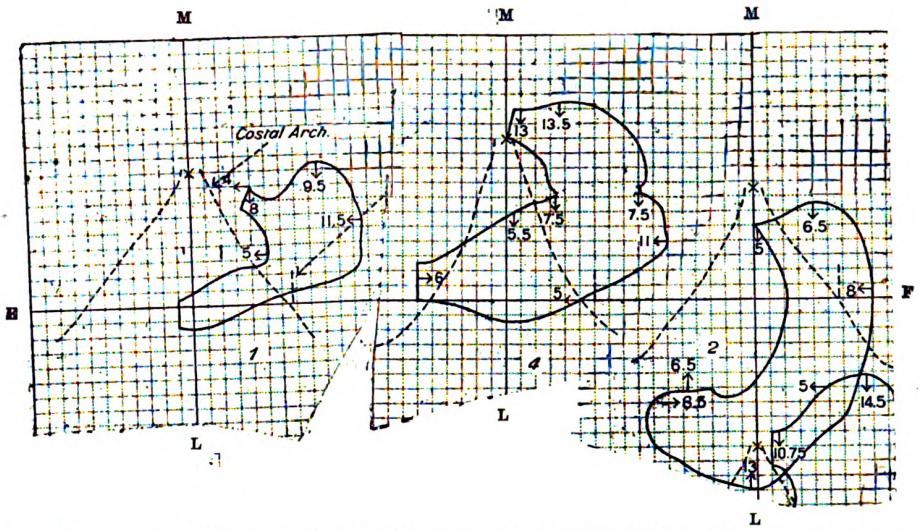
These cases, however, by no means include all those in which the stomach was distended.

MOVEMENTS OF THE STOMACH.

Although there were so many cases in which the stomach was well filled or distended there was only one example of the condition, figured by Symington as that of the normal distended stomach, in which the pylorus is situated behind a portion of the body of the stomach which extends further to the right than the pylorus on an anterior plane. It is doubtful if the pylorus moves more than two centimetres to the right in the course of filling of the stomach if it moves at all. In filling of the stomach the large hollow to the left behind is apparently first occupied, then the greater curvature in front, to the left of and below the liver, comes to the anterior abdominal wall, at the same time tilting upwards and to the right in some measure the left lobe of the liver, and directing the lesser curvature more to the right and backwards; then, if necessary, the stomach extends somewhat to the right, downwards and forwards, pressing down

[1] Lecture I. was published in THE LANCET of March 16th, 1901, p. 759.
[2] On Certain Variations in the Shape, &c., of the Liver, Edinburgh Medical Journal, 1888.

FIG. 4.



The stomachs for Cases 1, 4, and 2 shown on the reduced scale about the middle line (M, L) and the upper transverse abdominal line (E, F). Case 1 is an example of the type of stomach with a cylindrical portion towards the pyloric end. Case 4 is a good example of the constriction which is commonly found along the left border. Case 2 shows the cylindrical stomach of chronic distension displaced downwards by an enlarged liver. The figures indicate the distance in centimetres from the surface lines.

FIG. 5A.

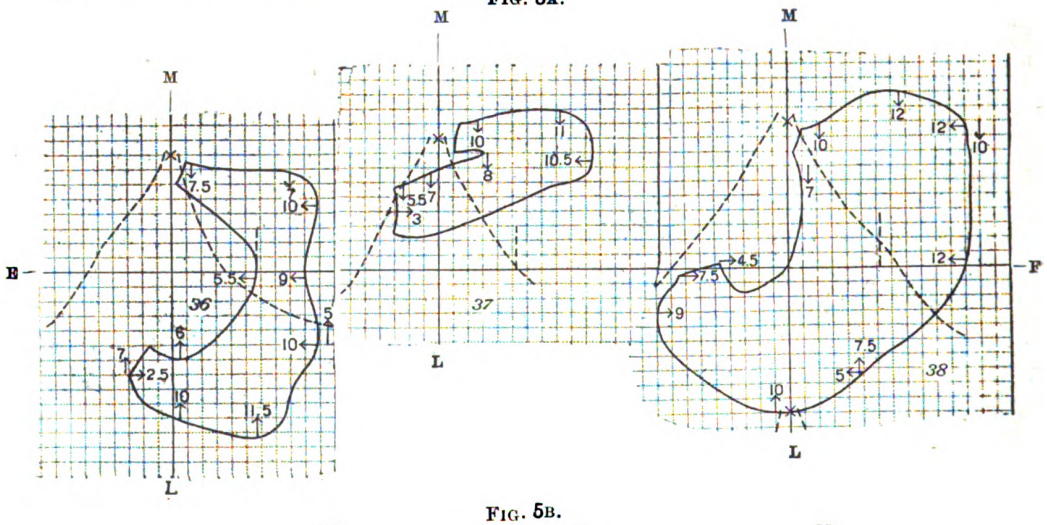
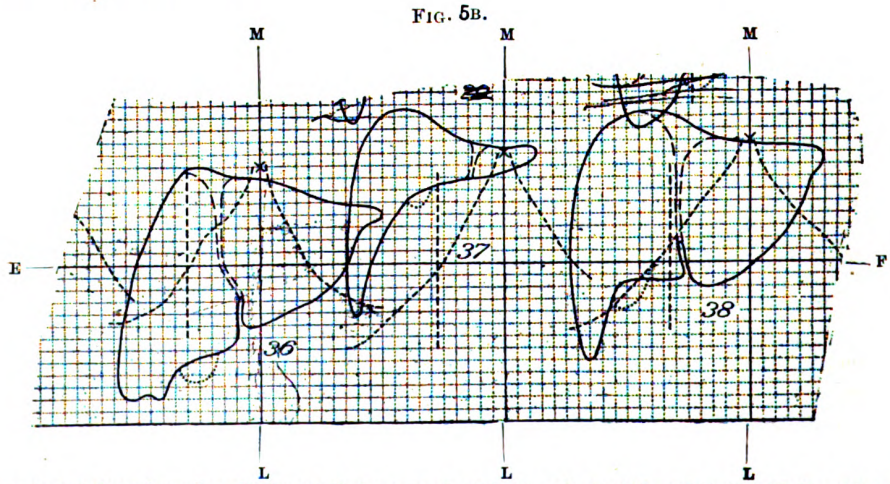


FIG. 5B.



The stomachs and livers from Cases 36, 37, and 38 shown on the reduced scale about the middle line (M, L) and the upper transverse abdominal line (E, F). Case 36 shows the displacement of the pylorus when the liver is low down. Case 37 shows the position of the parts when they are raised up by distended intestines below. Case 38 shows how the pylorus is not displaced downwards to any material extent when the stomach alone is low down. The scale represents centimetres.

before it the projecting anterior border of the pancreas and the transverse meso-colon.

THE INFLUENCE OF THE STOMACH UPON THE SHAPE AND POSITION OF THE PARTS BEHIND IT.[3]

The parts behind the stomach in the hardened specimen or in a good fresh subject present a well-marked and regular concavity for the reception of the cardiac portion of the stomach which Birmingham[4] aptly described as the stomach-bed. When the stomach is removed the convexity of the central part of the diaphragm downwards, produced by the heart, is seen. Passing to the left, this convexity passes into the concavity which lodges the summit of the stomach and which projects, as a rule, one centimetre higher than the highest point of the spleen. This concavity, continued either from above downwards or from the left inwards, passes into the hollow of the gastric surface of the spleen which forms the completion of the outer wall and a part of the floor of a deep concavity which projects backwards to a plane up to six centimetres posterior to the front of the aorta and the pancreas in the middle line. The floor of this concavity, traced inwards, is completed below the innermost part of the spleen by a portion of the anterior surface of the left kidney at its upper part, then by a varying part of the left suprarenal body with the adjoining left semilunar ganglion, and finally by the left crus of the diaphragm as it overlies the vertebral bodies. Traced downwards, the floor of the concavity passes on to the gastric surface of the pancreas, which, sloping more or less forwards, completes the support of the stomach behind and leads on to the transverse meso-colon, which, passing from the anterior border of the pancreas and being itself supported inferiorly by the small intestines, completes, with the projecting portion of the pancreas behind and the splenic flexure of the colon at the left, the support of the stomach below. The extent of the gastric surface of the left suprarenal capsule is determined partly by the position of the convolutions of the splenic artery, which often quite overlap it, partly by the size of the spleen and pancreas, and partly by the position of the pancreas. When the pancreas is pushed upwards by the intestines below, or downwards by the stomach above, it sometimes carries the suprarenal body with it to a certain extent. Moreover, when the upper part of the spleen is enlarged it may spread downwards over the gastric surface of the left suprarenal, as well as over that of the adjoining kidney, and shut them out from direct relation with the stomach. That which we have called the anterior border of the pancreas becomes, when it is traced inwards to the middle line, the lower border of the body of the gland and overhangs the emergence of the mesenteric vessels. It represents at this place the conjoined anterior and posterior borders, the inferior surface having ceased. However, even in the middle line it will be convenient still to speak of this border as the anterior.

We have just said that the stomach, resting on its bed, is supported at its lower part on the gastric surface of the pancreas which, sloping downwards and forwards to its anterior border, forms in varying degrees a supporting shelf for the stomach. When the stomach is lowly situated it tends to press down the anterior border of the pancreas, to increase the vertical depth of its gastric surface and to diminish the depth antero-posteriorly of its inferior surface; that is, to flatten out the pancreas. This process is accompanied by a pushing down of the pancreas over the face of the left kidney; thus giving the kidney an increased gastric surface. In its descent the pancreas occasionally drags down the left suprarenal body with it to some extent. Finally, the descent of the stomach is not accompanied by a descent of the left kidney. The reverse of these processes takes place when the stomach is raised up by distended intestines; the depth on a vertical plane of the gastric surface of the pancreas is diminished, whilst that of its inferior surface is increased antero-posteriorly, its anterior border becomes more prominent, and the gland, being pushed upwards, tends to obliterate the gastric surface of the left kidney. Fig. 6 is designed to illustrate these points; but a detailed comparison of the outlines of the whole series, which are before you, on the reduced scale of the stomach with those of the duodenum and adjoining viscera brings out the points more fully.

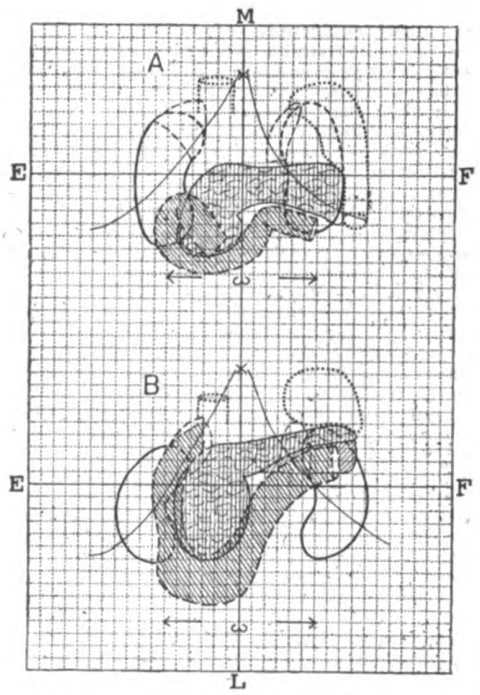
[3] Compare the stomach and liver outlines from Cases 36 and 37 on Figs. 5A and 5B with the outlines of the deeper viscera from the same cases on Fig 6.

[4] The Topographical Anatomy of the Spleen, &c., Journal of Anatomy and Physiology, vol. xxxi., 1896.

Take two adjoining contrast cases—viz., Cases 36 and 37. In Case 36, as Fig. 5A shows, there was a low stomach. Fig. 6 therefore shows a flat pancreas—that is, one having a large gastric and a small inferior surface—and, moreover, this flat pancreas is seen to be low down on the left kidney, leaving a large gastric surface of the kidney exposed above it. In Case 37, on the contrary, the illustrations show the conditions to be reversed: a high stomach, a pancreas with a large inferior and a small gastric surface—pushed up, that is, from below so much that the kidney has no gastric surface at all.

The ridge presented by the pancreas over the front of the vertebral column was, when present, usually found to the left of the middle line, having a direction downwards and

FIG. 6.



Outline A shows the position of the parts behind the stomach from Case 36 as an example of the displacements when the liver and stomach are low down. Outline B shows the same parts when the stomach and liver are high up (from Case 37, see text). The scale represents centimetres. M, L, The middle line. E, F, The upper transverse abdominal line. ω, Umbilicus. —>, Highest part of the iliac crest.

inwards and corresponding to the groove often present on the overlying part of the stomach. The pancreas projected in the average 0·5 centimetre above the lesser curvature in the middle line.

Professor J. Symington,[5] speaking of the omental tuberosity which the pancreas sometimes presents as it projects above the lesser curvature of the stomach, says: "As a rule I believe it will be found much more distinct when the stomach is distended than when it is empty." In these cases it was very distinct either as a ridge or tubercle in seven instances. In all of these the stomach was described either as well filled or distended and in all cases except one it was low down. When the stomach was fairly high in the abdomen, although distended, the omental tuberosity was noted either as very small or practically absent. Apparently a large omental tuberosity of the pancreas occurs when the stomach is low down and distended, as distinguished from those cases in which, whilst distended, it maintains its normal level.

THE DUODENUM.

The general surface marking of the duodenum has already been given. The first three parts of the duodenum are moulded around the head of the pancreas and the second part

[5] On the Topographical Anatomy of the Pancreas, Transactions of the Royal Academy of Medicine of Ireland, vol. xiii., 1896.

especially lies in a deep groove along its right border. In none of the cases in this series were the lips of the groove sufficiently voluminous to encircle this part of the duodenum, although in most cases the posterior lip of the groove extended sufficiently behind the duodenum to prevent its coming into immediate relation with the inferior vena cava. In the average the bend between the first and second parts the duodenum overlies the lower angle of the right suprarenal body. 13 of the cases, or 32·5 per cent., illustrate the fact that the duodenum often passes to a considerable extent on a sagittal plane, so that when the highest point of the first part of the duodenum is described as being only two centimetres further outwards than the pylorus it does not necessarily indicate that the first part of the duodenum is only two centimetres long, for, as in these cases, it may have passed almost directly backwards. The lower border of the liver usually overlaps the highest part of the duodenum for three and a half centimetres. In the average the *gall-bladder* projected on to the front lies in the right lateral line with its tip directly in front of, and nearly half way down, the second part of the duodenum. The lower part of the gall-bladder is usually lifted off the duodenum by the transverse colon, but in the average it directly overlies the duodenum at the intersection of the upper transverse abdominal line (E, F)[6] and the right lateral line. The nearness of the lowest part of the duodenum to the highest part of the iliac crest has been already pointed out, and when that bone can conveniently be felt it constitutes a useful guide to that part of the bowel.

Variations in the position of the duodenum.—The highest point of the duodenum (usually where the first part bends down to become the second part) averaged 1·8 centimetres above E, F (Fig. 3, Lecture I.). There were 30 cases in which it did not vary more than two centimetres from the average one way or the other, calling the average two centimetres above E, F. There were five cases more than four centimetres up to 6·5 centimetres above E, F, which we will call those of high level; and five cases lower than E, F, up to 4·5 centimetres below, and these we will call those of low level.

1. *High level.*—All these cases were amongst those that have been already noticed, in which the stomach and the lower border of the liver were at a high level and were, for the most part, pushed up by distended intestines, specially by the transverse colon.

2. *Low level.*—All these were cases in which the stomach was distended and with the liver reached low down in the abdomen.

3. There is a third group of cases in which the stomach was low down and distended but in which the liver maintained its normal level. In these cases we find the duodenum was at its normal level, being held up, as we have previously described, with the pylorus to the under surface of the liver by the strong right part of the lesser omentum.

It becomes evident, on comparing these three groups of cases, that lowering, or increase in size downwards, of the liver is the chief determining agent in depressing the first part of the duodenum, as it is that of the pylorus; and that distension of the stomach alone is not sufficient to produce this effect. Further, it appears that the causes that push up the liver and stomach also push up the first part of the duodenum.

Cysto-colic fold.—Sometimes the peritoneum is prolonged further to the right than the usual position of the right border of the lesser omentum and extends from the transverse fissure of the liver along the under surface of the gall-bladder superiorly, and along the upper border of the duodenum inferiorly, on to the hepatic flexure of the colon, and forms at this place a fold stretching from the gall-bladder to the colon presenting a free border directed more or less to the right. This cysto-colic fold, representing a prolongation of the lesser omentum to the right, was present in 12 cases, or 30 per cent.

The duodenum and the right kidney.—Professor D. J. Cunningham in his "Practical Anatomy,"[7] speaking of the relative levels of the duodenum and the right kidney, says: "The duodenum, moulded as it is on the vertebral column and around the head of the pancreas, is not subject to much variation in position. The differences seen in the figure are probably due to variations in the positions of the kidney." The cases in this series do not support this statement. The duodenum is subject to considerable movements in position in regard to the vertebral column. For instance, between Cases 5 and 7 of this series the difference in level of the upper border of the first part of the duodenum compared with the disc between the first and second lumbar vertebræ was 9·5 centimetres, or nearly four inches—viz., from 5·5 centimetres above in Case 5 to four centimetres below in Case 7. The upper border of the right kidney fell in the same cases only 4·5 centimetres—viz., from 6·5 centimetres above in Case 5 to two centimetres above in Case 7. On Fig. 7 these variations are set out in detail on the two curves; in the upper one A the positions of the highest point of the duodenum and of the upper pole of the right kidney are shown about the line E, F, and in the lower curve B about the first lumbar inter-vertebral disc. It is quite evident from these that the duodenum is quite as variable in its level in relation to the vertebral column as the upper pole of the right kidney is, if anything, more so.

We are not concerned in this place with the causes which produce alterations in the level of the right kidney; but it can be said that as far as the cases go they do not enable us to say in any one case, when the relative levels of the duodenum and right kidney are unusual, that the difference is produced by an alteration in the position of the kidney, or even chiefly so. *If the liver be enlarged and lower than usual it is most likely to be the duodenum that is displaced downwards;* and if the liver and stomach be raised up by distended intestines it is very likely that the duodenum also will be pushed up to some extent.

I need not detain you to analyse the lateral variations of the duodenum. In five cases the highest point of the duodenum was either on the middle line or as little as one centimetre to the right of it. An examination of the cases shows that the conditions associated with these displacements run practically parallel with those already described in considering the lateral displacements of the pylorus. In 40 per cent. of the cases the lowest part of the duodenum was at or below the highest point of the iliac crest and in 60 per cent. above it. The duodenum over the middle line is subject in some measure to the various displacing forces that have already been considered. Its lower border averaged 2·3 centimetres above the umbilicus. In 29 cases (72·5 per cent.) it was from one to five centimetres above, inclusive, but in the rest of the cases it varied from 6·5 centimetres above to four centimetres below.

The duodeno-jejunal flexure.—The duodeno-jejunal flexure is held up beneath the inferior surface of the pancreas by the fibrous tissue surrounding the mesenteric vessels and coming down from the diaphragm on to and over the flexure. The overlapping part of the pancreas, situated on the vertebral column just to the left of the middle line, is the least moveable part of the gland, the tail at the left being more freely moved by a distended stomach and the head of the pancreas at the right, along with the duodenum, being more directly exposed to the displacing force of an enlarged liver, as we have seen. Mr. C. B. Lockwood[8] takes the upper border of the duodeno-jejunal flexure to represent the upper border of the mesentery There were 30 cases, or 75 per cent., of this series in which the upper border of the duodeno-jejunal flexure was not situated more than two centimetres away from E, F, one way or the other. There were three cases more than two up to four centimetres above E, F, and in all of these the stomach was highly situated, being mostly pushed up by distended intestines. There were four cases three centimetres or more up to six centimetres below E, F, and in all of these the stomach was distended and, together with the liver, occupied a low position. There were, however, three other cases in which, whilst the stomach was low down and more or less distended, the duodeno-jejunal flexure was not lower than usual. The plates of these cases show that the liver, though low down, did not directly press on the flexure.

If we contrast these variations with those of the other parts of the duodenum we may fairly say that *the duodeno-jejunal flexure is the most stable part of the duodenum and that a distended stomach, in the absence of an enlarged or downwardly displaced liver, is not sufficient to cause its material downward displacement.*

Shape of the duodenum.—The first and fourth parts of the duodenum are those most subject to variation in shape:

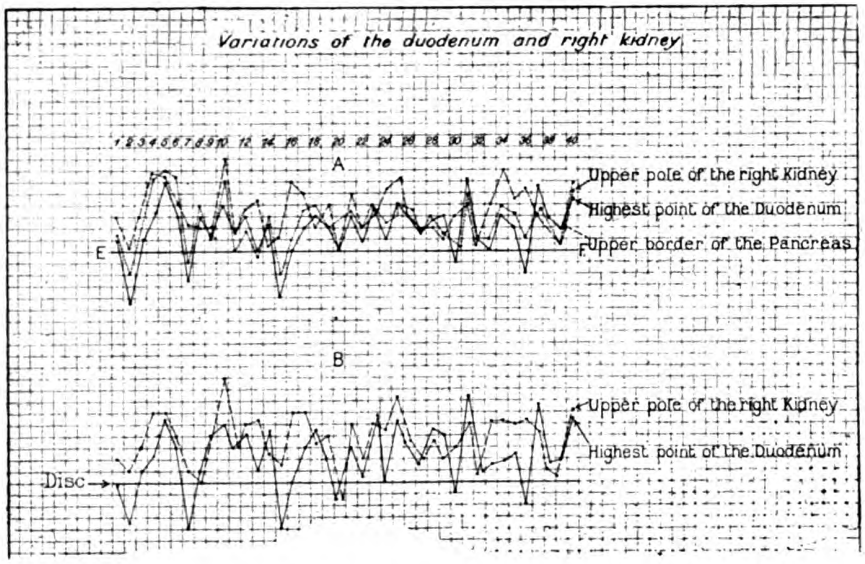
[6] Readers are reminded that this line which, for convenience, is called E, F, is drawn transversely across the abdomen through a point half-way from the upper border of the pubes to the supra-sternal notch.

[7] Vol. i., p. 492.

[8] Lectures on Hernia, London, 1889.

the first from displacements; the fourth from abnormalities, chiefly connected with its special position in regard to the peritoneal folds in its neighbourhood. Time does not permit more than to draw your attention to the special cases. In Case 7 the duodenum (which will be illustrated in the next lecture) was pushed downwards and to the left by the liver; the lower left portion of the head of the pancreas, which is sometimes spoken of as the lesser pancreas, extended across the fourth part of the duodenum into the root of the mesentery. The mesenteric vessels passed in front of this lesser pancreas into the root of the mesentery as usual and the fourth or ascending part of the duodenum was situated to the right of the middle line. The condition can hardly be accounted for by the displacement, and it most likely represents a duodenum with a simple bend like that of the bonnet monkey (Treves[9]). Four cases presented an abnormality in which, after the usual position of the duodeno-jejunal flexure was reached, there was an additional bend towards or across the middle line. In all these cases, as far as the point represented in the illustrations, this

FIG. 7.



A, shows the variations in the position of the upper pole of the right kidney, the highest point of the duodenum, and the upper border of the pancreas in regard to the upper transverse abdominal line E, F. B, shows the variations in the position of the upper pole of the right kidney and the highest point of the duodenum in regard to the disc between the first and second lumbar vertebræ. The scale represents centimetres.

additional part of the duodenum was firmly bound down by the peritoneum.

THE SMALL INTESTINES.

It would seem, according to the recent researches of Mall,[10] that the intestines, even after disturbance, shaking or even manipulation, do in a general way fall back again into their previous position and seem to preserve in an individual a certain uniformity in the plan of their arrangement. The investigation of the general or relative position of the various coils of the small intestine is, and must remain a matter of much difficulty. Although it may not be difficult in the infant, in a good proportion of cases, to point to some general plan in their arrangement, yet, with the changes in diet, the increase in length of the intestines, and the manifold displacing influences to which they are exposed in the adult, it is not easy to consider that the arrangement in the infant, even if shown to be fairly regular, establishes anything but a low probability as to the nature of the arrangement likely to be met with in the adult. The intestines move most freely in the upper left lateral and the central regions of the abdomen. Taking the general direction of the mesentery from above downwards, from left to right, the coils in the left upper region are mostly jejunum and those in the right lower region chiefly ileum. The left upon the mesentery, and the upper end or direction of the root of the portion of mesentery with its attached bowel is found, either the part near the thumb or towards the little finger, as the case may be.

THE PERITONEUM.

Prolapse of the mesentery.—The upper border of the duodeno-jejunal flexure represents the upper border of the root of the mesentery, so that what we have said of displacements of the former applies equally to the latter. Mr. Lockwood[15] in his work gives the upper border of the mesentery as from three to four inches above a base line drawn across the highest parts of the iliac crests. The average obtained from these cases of 9·5 centimetres above the iliac crest agrees very well with Mr. Lockwood's measurements in adults up to 40 years of age. He considers that when the distance is less than three inches (say, seven centimetres or less) the mesentery may be termed prolapsed. He associates prolapse of the mesentery especially with prolapse of the splenic flexure of the colon. We have seen that a low position of the liver and stomach are specially associated with a low position of the duodeno-jejuna[l]

[9] The Anatomy of the Intestinal Canal and Peritoneum, London, 1885.
[10] Development of the Human Intestine, &c.: Bulletin, Johns Hopkins Hospital, vol. ix., 1898.
[11] Der Raum der Bauchhöhle des Menschen, u.s.w. His: Archiv für Anatomie und Physiologie, 1891.
[12] Topographie der Mesenterien, u.s.w., Internationale Monatsschrift für Anatomie und Physiologie, p. 66 et seq., 1896
[13] Zur Kenntniss der Lage und Form des Mesenteriales Teiles des Dünndarmes, u.s.w., ibid., vol. xi., 1894.
[14] Op. cit.
[15] Op. cit.

flexure, and we should not expect that an enlarged or downwardly displaced liver would operate, in the absence of special laxity of the peritoneal bands or of the abdominal muscles, in so direct a manner on the splenic flexure of the colon. In six cases of this series the mesentery was prolapsed according to Mr. Lockwood's definition. In all of them there was a large or low liver with a distended stomach. In four of them the splenic flexure of the colon was prolapsed, whilst in the remaining two it was not. On the other hand, there were eight cases presenting prolapse of the splenic flexure of the colon, in four of which the mesentery was prolapsed, and in two others it was only just above the line of prolapse. In all of these cases the low position of the liver and stomach was noted, and in the remaining two cases the splenic flexure was prolapsed without the other conditions. In those cases in which the mesentery was prolapsed without the splenic flexure of the colon the costo-colic ligament was found strong and held up the colon in spite of the low liver and stomach. In those cases in which the splenic flexure of the colon was prolapsed, without the prolapsed mesentery and the accompanying conditions, the costo-colic ligament was very thin or badly marked. *We may say, therefore,* that whilst, as Mr. Lockwood remarks, prolapse of the splenic flexure of the colon and of the mesentery are commonly associated, the latter is chiefly related to the position of the liver and stomach; the former, in addition to these circumstances, possesses as a separate determining factor the strength of the costo-colic ligament.

The ages of the patients presenting one or both of these conditions were over 40 years in all but three instances and in two of these the ages were 36 and 39 years respectively. In the other case, that of a lad, aged 13 years, the whole of the viscera in the upper part of the abdomen were displaced downwards by an enormous intra-thoracic growth. The root of the mesentery crossed the middle line low down in eight cases, ranging from 10 to 14·5 centimetres below E, F, and allowed the intestines in the left abdominal quarter a freer range of movement. In all but two of them there was a low transverse colon; in all but three of them the stomach was low down; but only in three of them, however, was the root of the mesentery anything prolapsed at its upper end. In all but two cases the patients were more than 45 years of age. In one of the cases there was a left inguinal hernia consisting only of a portion of the sigmoid flexure of the colon.

The attachment of the *lower end* of the mesentery in these cases was 8·5 centimetres directly above Poupart's ligament. This agrees very well with Mr. Lockwood's figures when it is remembered that in these measurements Poupart's ligament is considered as stretching in a straight line from the anterior superior iliac spine to the spine of the pubes. Mr. Lockwood speaks of the lower end of the mesentery as prolapsed or dragged down when it is less than two and a half inches, or 6·25 centimetres, above Poupart's ligament. The four cases in which this condition existed in this series presented nothing in common except a low position of the hepatic loop downwards of the transverse colon.

THE LOWER END OF THE ILEUM.

The lower end of the ileum occupies a fairly constant position over the right psoas muscle a little below where it comes to form the right pelvic brim. It is nearly always directed upwards and outwards, and the mesentery, where the ileum overlies the psoas, usually shortens somewhat abruptly, allowing the terminal part of the bowel only a limited range of movement. The attachment of the lower end of the ileum is often made firmer by a prominent peritoneal fold—the plica vascularis—which passes downwards from beneath the ileum as it overlies the inner border of the psoas to the middle of Poupart's ligament. Sometimes this part of the bowel is firmly bound down to the iliac fossa, whilst in other cases it lies in the pelvic cavity with a prolapsed cæcum. These positions and mobilities of the lower end of the ileum from the 40 cases may be thus summarised. In eight cases, or 20 per cent., it was firmly fixed in the iliac fossa. In 12 cases, or 30 per cent., it had a limited range of mobility. In 20 cases, or 50 per cent., it was freely moveable in various positions. In four of the freely moveable cases the lower end of the ileum was wholly within the pelvic cavity with a prolapsed cæcum.

A Lecture
ON
SOME RECENT DEVELOPMENTS IN THE ADMINISTRATION OF ANÆSTHETICS.

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GENTLEMEN,—In every department of practical medicine progress is, as you are aware, constantly taking place; and although it cannot be said that the latter half of the century which has just drawn to a close has been conspicuous for any great discoveries in the branch of therapeutics to which I would now direct your attention, it cannot, I think, be denied that very important developments have during that time been effected in the various methods of inducing and maintaining anæsthesia. With most of these improvements you are doubtless familiar, but there are some which, by reason of their comparatively recent introduction into practice, may not have attracted your attention.

Of all the known systems of inducing anæsthesia there can be no doubt that that introduced many years ago by Clover is the best. I refer to the system of administering nitrous oxide and ether in succession. The advantages of this plan are that the initial sensations experienced by the patient are not unpleasant, that consciousness is rapidly destroyed, and that the stage of struggling and excitement is in the vast majority of cases wholly eliminated. The system is, moreover, a remarkably safe one, provided that the anæsthetist has had some little experience in its application. It is a mistake, however, to suppose that any system of inducing anæsthesia can be made perfectly safe, and it thus happens that even with this nitrous oxide-ether sequence cases occasionally present themselves in which alarming or possibly fatal symptoms arise.

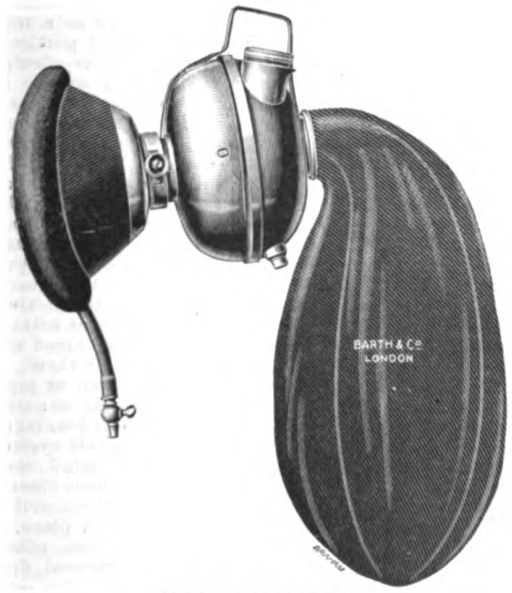
Clover's system of inducing anæsthesia by means of nitrous oxide and ether may be applied in a variety of ways which may be appropriately spoken of as methods, but time will not allow of my describing these methods to you in detail. I have given them one and all a thorough trial, and although I cannot on the present occasion pause to give you my reasons I may tell you that in one respect or another each of the recognised methods of administering nitrous oxide and ether in succession has failed to satisfy me. In some of them there is a sudden transition from the one anæsthetic to the other, with the result that, in certain subjects, asphyxial difficulties arise and very quickly and seriously complicate the administration. In others, although the anæsthetics are gradually mixed, the channels of the inhaler through which the patient breathes are so circuitous and narrow that an unpleasant and undesirable stress is thrown upon respiration. In others, again, delay is caused by measuring out doses of ether, the patient is distressed by the rushing noise of the nitrous oxide, whilst the too familiar odour of the other anæsthetic is not wholly prevented. Or, finally, the apparatus employed cannot be thoroughly cleansed after each administration.

I have accordingly been endeavouring during the past few years to devise a method of administering "gas and ether" which would be free from the objections to which I have alluded. But before I describe this in detail I must ask your attention to a few interesting considerations in regard to the asphyxial factor in the administration of ether by means of so-called close inhalers. Perhaps the most important of the lessons taught us by Clover was that by permitting a certain degree of re-breathing during etherisation it is possible to produce a very powerful effect—an effect, indeed, which serves to render ether almost as potent and as manageable as chloroform. Re-breathing a limited supply of air has, as you are aware, a double result: it leads to a diminished ingress of oxygen—i.e., to anoxæmia—and to a retardation in the elimination of carbonic acid. Now, this result contributes very considerably to the anæsthesia. There are, in fact, by

Clover's system of etherisation, two factors brought into play which may for purposes of description be termed the ether factor and the asphyxial factor. Each is complementary to the other. The more the ether factor is used the less need will there be for the asphyxial; the more the asphyxial element is employed the less need will there be for the ether element. Now, Clover, as you may be aware, utilised the asphyxial factor very largely, as is obvious from the directions which he gave for the use of his inhalers. He paid but little attention to the patient's colour; he kept up a semi-asphyxial state; he used comparatively little ether. His inhalers, moreover, were constructed with remarkably narrow channels, but whether such a plan of construction was by accident or design I cannot say. It is highly probable that Clover, who was conspicuous for his ingenuity, was aware of the influence which these narrow bores themselves exerted upon the respiratory system of the patient and upon the phenomena of anæsthesia. So far as I am aware, however, there is no record of his views on these points. We only know that his "gas and ether" inhaler and his ether inhaler are remarkably powerful in their effects, and that, as I shall now indicate to you, these effects are to no small extent dependent upon the narrow channels through which the patient breathes.

In order to satisfy myself as to the precise influences exerted by the calibre or bore of an ether inhaler I had constructed for me by Messrs. Barth and Co. (to whom I am greatly indebted) several inhalers of different bores.[1] The inhaler I now show you (Fig. 1) has, as you see, a very wide

FIG. 1.



Large-bore ether inhaler.

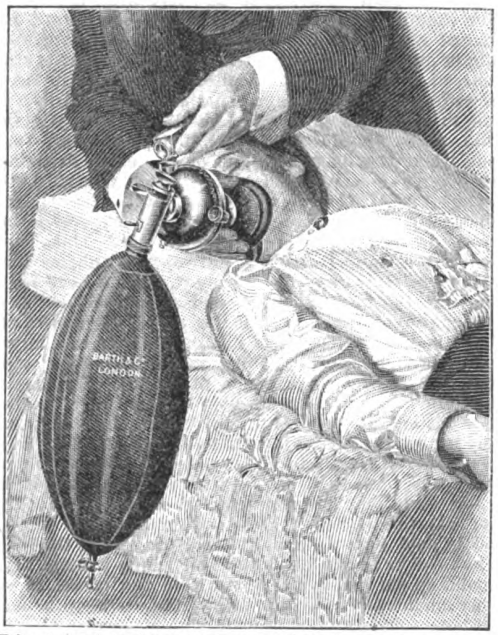
bore, but it is in its other main features similar to Clover's regulating ether inhaler. Its face-piece is, however, differently fixed; it is screwed into the ether reservoir so that it cannot become unexpectedly detached; and the air-current is admitted to the ether reservoir not by rotating the latter but by moving a regulating handle. The face-piece can be fixed to the ether reservoir at any desired angle (by means of a little screw) so that the filling tube of the reservoir remains with its mouth uppermost for re-filling. Now, when this inhaler is used for administering nitrous oxide and ether in succession—for which succession it is specially intended—there is, by reason of its wide bore, a distinct alteration in the usual phenomena of a "gas and ether" administration. The principal difference is that stertor and cyanosis are lessened and that the patient passes smoothly, with little or no respiratory derangement, from the anæsthesia of nitrous oxide to that of ether. The interesting question naturally arises, How is it that this enlargement of bore eliminates to such an extent the usual stertor and cyanosis of the succession of anæsthetics now under consideration? One can understand constricted channels causing distress at the very outset of an administration and a state of hyperpnœa throughout the administration. But why the stertor and cyanosis? If we can explain the former we can, of course, readily understand the latter, for any tendency towards occlusion of the air-tract, such as that which stertor always indicates, would necessarily limit the ingress of oxygen and so cause duskiness of the features. Now, there appear to me to be two possible explanations of the stertor caused by narrow-bore inhalers, but both are, I fear, somewhat hypothetical. Little is definitely known as to the physiology of stertor, but, so far as it arises under anæsthetics, it seems to me that it may become established in one of three distinct ways. It may either be (1) vascular, (2) spasmodic, or (3) paralytic in its nature. In vascular stertor certain parts of the air-passages become swollen by reason of vascular turgescence and so narrow the air-way—as, for example, when the tongue becomes engorged in the course of asphyxia. In spasmodic stertor certain muscles within or about the upper air-tract are thrown into a state of spasm, so that the normal calibre of the tract becomes narrowed—as, for example, when the tongue is drawn backwards to meet the pharyngéal wall. In paralytic stertor certain parts of the air-way fall together—as, for example, when the flaccid tongue of a deeply anæsthetised patient lying in the dorsal posture gravitates towards the pharyngeal wall. Now, it is quite conceivable that the stertor produced by narrow-bore ether inhalers may be either of the vascular or of the spasmodic variety. Thus, when a patient is breathing through a narrow-bore inhaler there is during each *inspiration* a tendency towards a negative pressure within the upper air-tract, and as a result of this more or less continuous tendency, an increased vascularity of the soft parts—the tongue, soft palate, pharynx, and laryngeal folds—is brought about, leading to a swelling and approximation of these parts and hence to stertor. You may often observe the tongue greatly swollen during "close" etherisation or during any administration, indeed, in which the air-supply is accidentally or intentionally restricted at the nasal or oral orifices. But I also have notes of cases in which the stertor has seemed to be of the spasmodic rather than of the vascular variety. The sequence of events has apparently been: (1) diminished ingress of oxygen and egress of carbonic acid by reason of the narrow bore of the inhaler; (2) an asphyxial state of the blood; (3) general or local muscular spasm (asphyxial spasm); in the course of which (4) spasmodic stertor arises. Now, the stertor produced by small-bore inhalers may become very inconvenient, if not dangerous, in persons of certain types. For example, it would be wrong practice to anæsthetise by means of a Clover's inhaler a patient suffering from angina Ludovici. In actual practice you will find that spasmodic stertor may in certain subjects become associated with, or replaced by, vascular stertor, and *vice versâ*. One of the most anxious cases I ever had to anæsthetise taught me this fact. The patient's naturally narrow air-passages favoured the occurrence of spasmodic stertor, and after the latter had existed for a few moments all parts of the throat became so engorged by venous blood that it was impossible to pass even the tip of one's finger beyond the enormously swelled fauces. Fortunately laryngotomy and forced inflation of the lungs saved the patient. Now, these facts, although they have only an indirect bearing upon the point immediately under discussion—the narrow bores of inhalers—will show you how important it is to avoid all asphyxial methods in certain subjects and to look with suspicion upon deep and obstructive stertor whenever it may arise.

In addition to the large-bore inhaler which I now have the pleasure of introducing to your notice preventing respiratory embarrassment during the induction of gas and ether anæsthesia, it obviates the other main objection which seems to me to be attached to the plan of adapting a gas-bag to a Clover's ether inhaler—viz., the possibility of there being a slight odour of ether at the commencement of the administration. By the usual plan of procedure a measured quantity of ether is first poured into the ether reservoir, and although it is possible for an experienced anæsthetist to completely, or almost completely, prevent his patient detecting any odour of ether, any shaking or rough usage of the charged inhaler may lead to an escape of vapour when the face-piece is applied. Now, by having a fixed ether reservoir it is possible to *introduce the ether when*

[1] Messrs. Barth and Co., of 54, Poland-street, Oxford-street, W., are the sole makers of this apparatus.

the patient is partly anæsthetised by nitrous oxide. (See Fig. 2.) The administration of nitrous oxide and ether in succession is thus conducted:—1. A face-piece of appropriate size having been fixed to the ether reservoir, the latter is, in cold weather, partly immersed in hot water for a few moments; the indicating handle is placed at "O" and the plug of the filling-tube is removed. 2. A two-gallon gas-bag partly full of nitrous oxide (the amount varying with the type of subject) is fitted to the reservoir. 3. The patient is instructed to breathe freely backwards and forwards through the mouth, and air will enter and leave the lungs through the valves in the gas-bag stop-cock. 4. Nitrous oxide is now turned on, and after two or three expirations have escaped at the expiratory valve the valve action is stopped and the remaining quantity of nitrous oxide is breathed backwards and forwards.

FIG. 2.



Ether being introduced during the inhalation of nitrous oxide.

5. Immediately this has been done about from one and a half to two ounces of ether are rapidly introduced through the wide and open filling-tube and the plug is replaced (Fig. 2). It is important that the face-piece should accurately fit the face during these procedures. 6. The regulating handle is now progressively moved from "O" to "¼," "½," "¾," or "Full," these markings indicating the proportions of the current thrown over ether. 7. At the end of about one minute, or possibly earlier in some cases, a breath of air is admitted at the stop-cock of the gas-bag. 8. At the end of about one and a half minutes the gas-bag is replaced by a smaller bag (Fig. 1) and the administration is thenceforward conducted as with Clover's inhaler, the regulating handle being kept at that point which seems suitable to the particular case. You will observe that whatever posture the patient be placed in (except the dorsal with the face looking upwards, a posture which is not to be recommended for inducing anæsthesia) the ether reservoir may be so adjusted to the face-piece that the opening through which the ether is poured in can be used without removing the apparatus from the patient. A glass "window" in the plug of the filling-tube is of service as indicating the quantity of ether in the inhaler. I have used this apparatus for upwards of a year in private practice and this fact warrants me in bringing it before your notice. It is only right, however, that I should tell you that I have had practically no experience with it for administering ether *per se*, for I never employ this plan except in hospital practice, and when I have been engaged in my demonstrations here I have felt myself bound to employ the inhalers commonly in use.

I would now draw your attention to what may be termed the gas-ether-chloroform sequence, by which I mean the successive administration of these three anæsthetics to the same patient. You are all aware that when ether is "taken badly," as the expression goes, it is more or less customary to substitute chloroform, but it is not with cases of this kind that I am now concerned. I would rather direct your attention to what may be called the routine use of the gas-ether-chloroform sequence. By this system of anæsthetisation anæsthesia is induced by "gas and ether" and maintained by chloroform. Loosely speaking, we may say—"gas" for the patient, ether for the anæsthetist, and chloroform for the surgeon. Nitrous oxide is advantageous to the patient for reasons which I have already given you; ether is advantageous to the anæsthetist because of its great safety and stimulant action upon the patient's respiration and circulation; and chloroform is advantageous to the surgeon because of the comparative quietude of the patient and the comparative freedom from venous engorgement and hæmorrhage during the administration. There are, however, numerous other advantages in this system. I have often pointed out to you that the principal risk of chloroform is the risk which is incurred during the second stage of anæsthetisation—a stage which in certain subjects is characterised by excitement, rigidity, and struggling. Now by the sequence under consideration this risk is wholly eliminated, for the struggling stage is passed over whilst the patient is under nitrous oxide and ether, with which anæsthetics there is, practically speaking, no such risk. It is therefore clear that by the nitrous oxide-ether-chloroform sequence we are able to obtain the advantages of chloroform without at the same time experiencing one of its chief disadvantages. But there is something more. One of the chief objections to ether as a routine anæsthetic is that after its administration, and particularly after its prolonged administration, certain after-effects are not uncommon. I refer more particularly to the taste and smell of ether experienced by the patient, to nausea and vomiting, and to bronchial and pulmonary sequelæ. Now, by the nitrous oxide-ether-chloroform sequence these disadvantages of ether are largely or wholly eliminated; for the quantity of ether vapour inhaled, although sufficient to impart to the administration characters such as it could never otherwise acquire, is insufficient to prejudicially affect the recovery-period. The return to normal consciousness, indeed, is altogether more satisfactory than after ether alone. Possibly the absence of that wear and tear of nervous machinery which must attend the protracted inhalation of ether may help to account to some extent for these happy results; or the greater economy of blood which marks the use of chloroform may help to explain them. But of this I am convinced, that there is no plan at present known of inducing and maintaining surgical anæsthesia which has so many advantages and so few disadvantages as the one which I now describe. In applying this system of anæsthetisation you must, however, bear in mind certain points; for if the sequence be attempted without observing certain cardinal principles you may easily find yourself face to face with alarming symptoms. In the first place, you should, for reasons just given, never change from ether to chloroform whilst a patient is struggling. Several deaths have thus occurred. In the next place, you must be careful never to effect the change unless there is at the moment of such change some evidence that the patient is not profoundly anæsthetised by ether. Thus it is a good plan in employing the sequence to administer ether till the corneal reflex has just disappeared, to remove the ether inhaler for a few breaths of air, to allow a slight cough to occur in order to free the larynx of any mucus that may have entered it, to watch for the first indication of returning corneal reflex, and then to begin the chloroform inhalation. It is particularly important in the case of abdominal operations that a cough should be allowed before the chloroform is begun, for if the chloroformisation be started whilst the larynx contains mucus considerable respiratory difficulty may arise. It is in this way that high-pitched laryngeal stridor, cyanosis, exaggerated diaphragmatic action, and abdominal rigidity may often come about. It is also important in abdominal cases to effect the change from ether to chloroform before the operation is begun, for as this change should only be made during a comparatively light anæsthesia, and as this anæsthesia may be associated with rigidity or movement, much inconvenience to the surgeon may be caused by changing when the operation is in progress. In the

next place, as regards the depth of chloroform anæsthesia which should be maintained, I find that when once patients have been placed well under ether and have then been allowed to clear the larynx, it is not necessary to subsequently maintain a very profound chloroform narcosis—in other words, by educating the tactile sensibility of one's finger it is generally possible to allow a very slight trace of lid reflex save perhaps in abdominal cases. If, however, the change from ether to chloroform be effected without the larynx having cleared itself the mucus present in this organ may persistently tend to excite local and even distant spasmodic states, with the result that, in his endeavours to suppress the inconvenient phenomena the anæsthetist may readily administer a dangerously large dose of chloroform. The presence of viscid mucus within the larynx rarely if ever leads to occlusion of the air-tract during the administration of ether, probably because the force of the respiratory current under this anæsthetic is sufficiently great to keep the fluid in a state of active movement. But I have notes of two cases which occurred some time ago, before I had become aware of the importance of proceeding as I have described, in which during a deep chloroform anæsthesia, whilst the breathing was somewhat shallow, the presence of ether-mucus within the larynx apparently acted as the "last straw" and arrested breathing. Simple chest compression quickly dislodged the mucus and restored respiration.

The nitrous oxide-ether-chloroform sequence is particularly appropriate in the surgery of the mouth, throat, and nose.

FIG. 3.

Modified Junker's inhaler.

As a general rule it is advisable for these operations to place the patient well under ether, to insert the gag and any necessary appliance for maintaining anæsthesia, and then to allow the slight recovery to which I have alluded. From this moment onwards anæsthesia is kept up by means of a Junker's inhaler. Messrs. Krohne and Sesemann have recently constructed for me the modification which I now show you (Fig. 3). In addition to its being so made that no mistake can occur in adjusting the wrong indiarubber tubes upon the mounts of the bottle, you will observe that the apparatus is provided with a metal stop-cock which when turned converts the chloroform receptacle into a stopper-tight bottle which can be packed away in a bag without removing the chloroform. There are also other little improvements which hardly deserve special notice.

The last development in anæsthetisation to which I shall refer is a plan of maintaining chloroform anæsthesia during certain nasal and oral operations. It is customary, whenever the surgeon desires to keep the mouth of the patient more or less widely open, to insert a Mason's gag between the teeth or to employ some similar plan. Now this gag, as well as most others of its type, has the effect of stretching the lips and distorting the anterior nasal orifice of that side on which the gag is inserted. The inconvenience to the surgeon thus occasioned is particularly felt in antral and nasal operations, and it is for such operations that I have devised the little appliance which I now show you. It is made by Messrs. Krohne and Sesemann and may be termed a "chloroform-prop" (Fig. 4). It consists of a solid wedge-shaped metal

FIG. 4.

The chloroform-prop.

prop which can be inserted in wedge fashion between the molar teeth. It has side flanges to prevent lateral displacement, and the parts of the prop which come against the teeth are made of lead to allow of the prop being gripped when in position. A bent metal tube for the transmission of chloroform vapour from a Junker's inhaler is fixed to the prop, in the inner and back portion of which may be seen the orifice through which the chloroform vapour is pumped into the fauces. Two or three sizes of the chloroform-prop are needed. When in position it will be found that the lips remain flaccid although the teeth are separated. The little appliance is of great use in maintaining anæsthesia during throat and nose operations upon patients in the sitting posture. Provided that anæsthesia be induced by ether, that all respiratory embarrassment be avoided, and that too profound a narcosis be not maintained, chloroform may, I believe, be safely administered to patients thus placed.

CASES OF INJURY TO THE EPIPHYSEAL LINE.

BY RUPERT BUCKNALL, M.D., M.S. LOND., F.R.C.S ENG.

THE following cases of injury to the epiphyseal line have lately been seen at University College Hospital. The case operated upon was under the care of Mr. Horsley.

CASE 1. *Separation of the lower epiphysis of the humerus without displacement.*—A boy, aged three years, fell from a bed, injuring the left elbow. When seen several hours later the elbow was held flexed at a right angle and all attempts to move it caused pain. There was a considerable amount of puffy swelling about the lower end of the humerus and a slight groove could be made out above the capitellum posteriorly on careful examination of the bony surfaces. Measurement and comparison of the bony points with those about the opposite elbow showed no dissimilarity; but on attempting lateral movement of the forearm the lower extremity of the left humerus could be felt to "give" slightly on the shaft, and on internal movement the groove felt above the capitellum grew wider. A skiagram showed that there was no displacement of the epiphysis, and it could not be said that the epiphyseal line was broader than

normal. The limb was put up flexed on a moulded gutta-percha splint for three weeks, passive movement being begun on the tenth day and continued daily. At the end of a month no deformity could be detected and the movements were perfect.

CASE 2 *Separation of the epicondylo-capitellar epiphysis of the humerus.*—A boy, aged seven and a half years, fell from a tree on to the outstretched right hand six months before admission. The elbow was thought to be dislocated at the time and liniments were applied for some time, but the deformity persisted and limitation of movement increased. The arm was not "set" after the accident nor were splints applied. On admission the condition was as follows. The contour of the outer border of the arm was altered by a projection opposite the external condyle, as though the radius were dislocated outwards and upwards. The carrying angle was unaltered. The forearm could be flexed to an angle of 83 degrees with the humerus and extended through 50 degrees to an angle of 135 degrees. Pronation and supination were as extensive as similar movements of the sound arm. Attempts to flex or extend beyond the above limits caused pain. On examining the bones the inner portion of the humerus and the ulna were found to be normal and bearing their normal relations. The head of the radius rotated in the lesser sigmoid cavity freely and felt normal; above it articulated with an irregular mass of bone made up of the external condyle and capitellum with surrounding callus. The mass was displaced directly outwards, as is well shown in the skiagram (Fig. 1), not forwards or backwards. On running the finger down the external supra-condylar line the mass formed a distinct shelf projecting half an inch. The mass could not be moved on the humerus. Calipers showed the measurement from condyle to condyle on the right side to be 5·1 centimetres, as compared with 4·2 centimetres on the sound side. On exposing the mass through a curved incision it was found to be loose; it was therefore removed and the head of the radius being normal a groove was cut for it in the lower end of the humerus to allow of free movement. A splint was applied for two days, and the stitches being removed on the

FIG. 1.

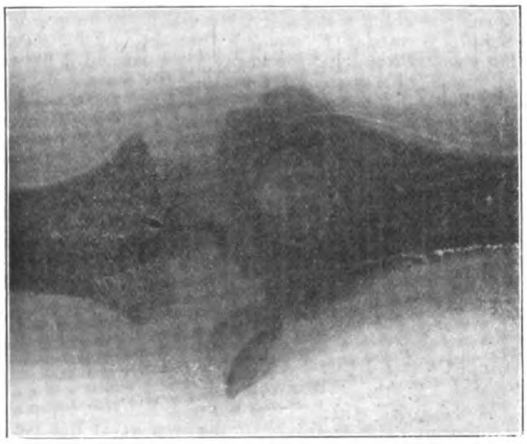
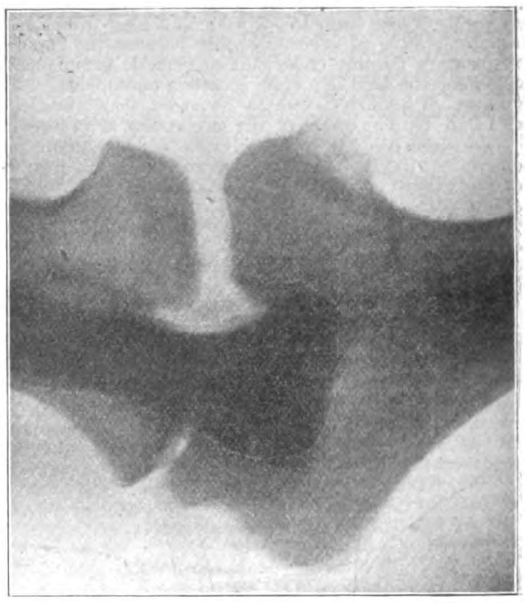


Illustration showing condylo-capitellar epiphysis in Case 2.

eighth day passive movements were begun and the patient was encouraged to move the arm. Three weeks later full flexion and extension were performed under gas, as there was limitation of these movements. Six weeks later the forearm could be extended to 160 degrees and flexed to an angle of 70 degrees with the humerus. Beyond this there was resistance but no longer pain. Pronation and supination were perfect and the carrying angle was slightly greater than normal. Three months after the operation the arm could be extended to 170 degrees and flexed to 70 degrees, all movements being freely performed and causing no pain. Pronation and supination were perfect and the patient used the arm in preference to the left one for all ordinary movements.

CASE 3. *Ununited separation of the epicondylo-capitellar epiphysis.*—A man, aged 56 years, gave the history that he fell on his left hand when 10 years old, injuring the elbow; this was "set" in splints, and it remained very stiff for some time afterwards. Both bones of the forearm were displaced a little outwards and the "carrying angle" was 20 degrees larger than normal, as measured in the opposite arm. The head of the radius could be easily felt, and above it, over the situation of the external condyle and capitellum, there was an irregular mass of bone which could be felt to move on full flexion or extension of the elbow. Both these movements were slightly restricted, but pronation and supination could be fully carried out. Behind the internal condyle there was a small mass of callus, fixed to the

FIG. 2.



Old epicondylo-capitellar separation (Case 3).

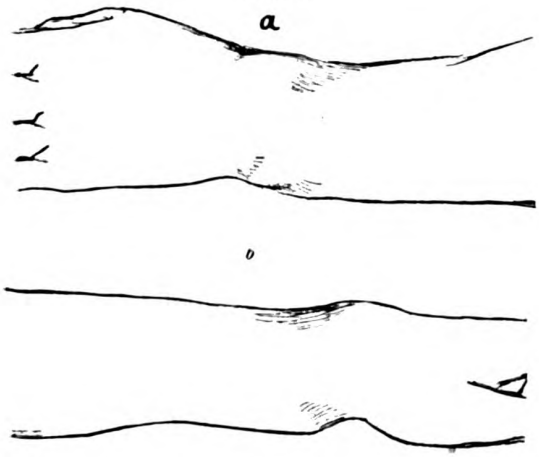
process, and evidently involving the ulnar nerve. The patient began to notice wasting of the hand and anæsthesia 20 years after the original injury, and now there was typical paralysis and wasting of the thenar and hypothenar muscles and the flexor and extensor carpi ulnaris, with anæsthesia in the area of distribution of the ulnar nerve in the fingers and hand as high up as the level of the pisiform bone. The nails of the fourth and fifth digits were longitudinally fluted. Operative treatment was refused, but the skiagram showed the relation of the bones and the position of the ununited fragment (Fig 2).

CASE 4. *Partial dislocation outwards of both forearm bones at the elbow; separation of the epiphysis of the internal condyle during reduction.*—A youth, aged 15 years, fell from a bicycle, striking the elbow against the kerbstone. When seen an hour later the elbow was swollen and flexed at an angle of 110 degrees, with the forearm pronated. The internal condyle was very prominent, and it was evident on inspection that the ulna was displaced outwards, but the dislocated radius gave rise to no marked deformity. The length of the line from the acromion to the olecranon was the same on either side. On examining the bones the deformity was at once evident, the sigmoid cavity of the ulna articulating with the capitellum, and the radius lying outside the external condyle, displaced also a great deal forwards. On the inner side the finger could easily explore all the trochlear surface of the humerus, and the trochlear notch could be readily defined. On the outer side the head of the radius lay to the anterior and outer side of the external condyle; it could be entirely explored and was felt to rotate on supinating the forearm. The elbow permitted of extension to 130 degrees and flexion to 100 degrees, and the forearm, which lay pronated, could be placed in the midway position between pronation and supination. Chloroform was given, and the dislocation was reduced easily by making extension

with leverage across the knee; but after the bones were replaced it was found that the epiphysis of the internal condyle of the humerus had been torn off. The separated fragment lay with its inner end or tip pointing downwards, just over the line of the joint, below and external to its normal position. On supination and extension it was drawn still further downwards and on pronation and flexion of the elbow, wrist, and fingers it could be replaced over its normal situation, but it always lay rotated with the tip pointing downwards. The whole limb was therefore put up on a splint in this flexed position and was kept at rest for ten days, at the end of which period the splint was removed and passive movement was begun and continued daily, the arm being kept in a sling for ten days more. There was a great deal of swelling and œdema, with blistering on the day after the accident. This slowly subsided and on the fourteenth day the elbow could be flexed to an angle of 70 degrees and extended to 170 degrees and pronation was perfect. Supination was slightly limited and the internal condylar epiphysis could not be distinctly made out owing to the callus forming round it. Two months later the movements of the elbow were quite perfect as to freedom and extent. The separated epicondyle could be felt as a mass firmly fixed to the humerus a quarter of an inch below its normal situation. The ulnar nerve was not tender and sensation in its area of distribution was normal.

CASE 5. *Separation of the lower epiphysis of the radius.*—A boy, aged 11 years, fell from a height of six feet on to his outstretched right hand, the thenar eminence striking on a step. There was obvious deformity at the wrist when seen two hours after the accident. The hand and the lower end of the radius were displaced backwards and outwards, forming a prominence on the dorsum of the wrist with a definite upper border to it extending across the posterior and outer surfaces of the forearm just above the wrist. The lower end of the upper fragment projected as a rather sharp ridge on the anterior surface, especially well felt about the position of the radial pulse, the artery arching over it (Fig. 3, *a* and *b*). There was no obvious rotation of the lower

FIG. 3.



Showing appearance of wrist in Case 5. *a*, From above. *b*, From outer side.

fragment either backwards or outwards. During reduction, which was easily accomplished, typical soft crepitus was felt. There was no tendency to re-displacement and a gutta-percha gauntlet was moulded on. Daily passive movement was begun at the end of the first week and kept up for 3½ weeks, at the end of which time the splint was discarded as the epiphysis had firmly united and the movements of the wrist and fingers were perfect. Two months after the accident no deformity could be made out beyond slight thickening about the epiphyseal line and the movements of the wrist were perfect. Fig. 4 shows the condition of the bones after reduction.

CASE 6. *Separation of epicondylo-capitellar portion of epiphysis of the humerus.*—A boy, aged six years, fell whilst spinning round at play and struck the left forearm and elbow against the pavement. When he was seen six hours later there was some swelling about the left elbow-joint which was carried at a right angle with the forearm semi-prone. On tracing down the external supracondylar line of the humerus an abrupt prominence could be felt about half an inch above the joint line and it was found that the external condyle and capitellum were displaced backwards and outwards about a quarter of an inch and also a little upwards; the fragment so separated had a sharp upper border posteriorly easily felt on running the finger down the smooth posterior surface of the humerus above the condyle. The measurement from the internal to the external condyle with calipers was nearly a quarter of an inch more on the affected side. The internal condyle and supracondylar line presented no deformity and the olecranon bore its normal relation to the condyle. The head of the radius could be easily felt lying below

FIG. 4.

Skiagram showing condition of bones after reduction in Case 5.

the displaced capitellum, the groove between them being broader than normal. Movements of the elbow caused pain, but under an anæsthetic they were free, though full flexion was limited before reduction. The fragment evidently consisted of the outer half of the lower end of the humerus, displaced backwards, outwards, and upwards. By direct pressure with the thumb it could be restored to its proper position, a soft "click" being felt during reduction. An attempt was made to put up the arm on a straight anterior splint in the extended position with a view to preserving the "carrying" angle at the elbow, but there was a tendency for the deformity to recur in this position. The elbow was therefore flexed as recommended by Hutchinson, and the fragment lay securely in an excellent position when the hand was placed over the opposite clavicle. Two strips of strapping were therefore applied exactly as in Sayer's method for treating fracture of the clavicle, a pad of wool being placed over the elbow beneath the strapping. The limb was found to be quite comfortable on the next day and needed no further attention till the tenth day, when the outer strip of strapping was removed and gentle passive movement of the elbow was practised in all directions. This was repeated daily for 12 days, the fragment being held in place by the fingers during manipulation and the strapping being reapplied. Full range of movement was soon reached without causing pain and after the first day the patient did not cry. At the end of three weeks from the date of injury the arm was placed in a sling and the mother of the boy was enjoined to move it twice daily to the full. Union appeared to be quite firm in three weeks from the date of injury and first treatment. Eight months later the limb was examined. There was full and free range of movement in every direction. There was some prominence about the line of fracture due to callus, but no gross deformity. The groove between the upper end of the radius and capitellum was broader than normal, as though there were some want of growth of the outer half of the lower end of the humerus, but the "carrying" angle of the elbow was exactly similar to that on the opposite side.

The first case described, in which there was no displacement of the epiphysis, is a good example of the rather equivocal signs which separation of an epiphysis may present. It is important, however, to recognise the

condition and to fix the fragments for a time, as otherwise undue mobility may lead to permanent want of union. Such a result is very rare without displacement, and a more common sequel is the formation of an excessive amount of callus from the same cause, leading either to destruction of the epiphyseal line or to interference with its blood-supply. Both these pathological processes may lead to a want of growth on the part of the bone affected, and if such want of growth occurs in one of two parallel bones, or in one half of a broad epiphysis, angular distorsion of the joint may result, as is shown in Case 3.

The difficulty in recognising the exact form of injury present in epiphyseal separations depends on the small size of the parts in children and the way in which the bony processes are obscured by the subcutaneous fat. In order to come to a correct conclusion and to effect efficient reduction of any deformity present an anæsthetic is always necessary and careful measurement must be made of the bony points, comparing them with those on the sound side. It is often difficult to fix accurately the fragments after reduction for the same reasons, and moulded splints of poroplastic or gutta-percha will be found far more serviceable than those of wood or metal and very easy to apply.

The proximity of the injury to a joint always leads to a rapid effusion into the synovial cavity, often consisting of blood. An important point in treatment, therefore is the early passive movement, which should be carried out in order to prevent the formation of adhesions with permanent limitation of movement in consequence. This must be begun before the fracture is sufficiently firmly united for splints to be discarded, and about the seventh or tenth day the limb should be taken down off the splint, and the fractured region being kept fixed by grasping the fragments with the hands an assistant should proceed to move the joint. Very slight range of movement is all that is necessary at first, but all the normal movements of the joint must be commenced; thus at the elbow or wrist pronation and supination must be practised as well as flexion and extension. A similar passive movement must be carried out each day, and each day the range of movement may be increased, and even at the end of three weeks or a month, when the splint is discarded, it is as well to continue such treatment for another period of three weeks, especially if any pain or stiffness persist.

Case 2 shows deformity and pain resulting from improper treatment of a fairly common injury about the elbow in children. One of two lines of treatment may be adopted in such a condition. If seen sufficiently early the separated fragment may be wired or pegged in its proper position, a proceeding which may lead, not only to union, but to restoration of growth about the epiphyseal line; but if seen late, as here recorded, no such new growth could be expected and the obstruction to movement and the pain caused by the callus are best overcome by removal of the fragment. The portion of bone removed in this case was much distorted by the addition of callus, and no trace of the epiphyseal line remained, so that no new growth could have subsequently taken place

The fourth case is an example of a fairly common complex injury, though the epiphysis of the internal condyle is more often torn off at the time of dislocation than, as here reported, during reduction. This injury has on several occasions been overlooked, and failure to recognise it has led to ulnar paralysis from want of immobilisation and excessive formation of callus, the latter pressing on the nerve. Treatment by immediate wiring or fixation of the fragment in position by strapping has been recommended. The latter was impossible in the present case, as no hold could be gained on the fragment, nor would the subsequent swelling that ensued lead to an unqualified recommendation of this method.

Immediate wiring is certainly the ideal treatment if asepsis can be assured, but infection, however slight the risk may be, leads to such serious results in these cases that any line of treatment evading the possibility of such an accident is certainly worthy of consideration.

Case 5 shows a simple separation with displacement of the lower epiphysis of the radius and the usual accompanying deformity which differs slightly from that seen in Colles's fracture. Considerable force is as a rule needed to tear off this epiphysis, and in consequence many of the cases recorded have been compound separations, the lower end of the diaphysis tearing through the skin and often injuring the radial artery.

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NOTE ON THE TREATMENT OF COLLAPSE OF THE ALA NASI.

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COLLAPSE of the ala nasi is a condition well known to those interested in nasal surgery. It consists in the falling of the external part of the lower lateral cartilage inwards during inspiration, so that it comes in contact with the septum and prevents the patient from drawing air through the nasal chambers on the affected side. Normally the lower lateral cartilage is doubled on itself, U-like, the inner part being in contact with the lower end of the septum, whilst the external forms a part of the outer wall of the vestibule. There is an amount of stiffness in the cartilage which keeps the anterior nares patent and the resiliency of the cartilage where the bend occurs is sufficient, after the two portions of the cartilage have been pressed together, to restore the patency of the anterior nares. In not a few individuals this resiliency is lost, and during inspiration the outer wall of the vestibule comes into contact with the septum. In some of these cases there co-exists a dislocation of the anterior end of the septum from the columella, and this, when present, increases the obstruction to free inspiration.

Although this collapse of the ala may be called a trifling affection it is astonishing how much annoyance it gives to the subject of it. It may easily be overlooked by the surgeon unless he is cognisant that such a condition may occur. For when the speculum is introduced and the blades are separated the collapsed ala at the same time is of course carried away from the septum by the external blade of the speculum and nothing whatever may be discovered on looking into the nasal cavities to account for the patient's trouble. The surgeon should suspect this condition, however, if when nothing abnormal is seen in the nasal chambers the patient remarks that he breathes quite comfortably with the speculum *in situ*. If now the speculum is removed and the vestibule is examined by tilting up the tip of the nose with the finger it will be seen that the outer wall comes in contact with the inner when the patient inspires.

The condition is an exceedingly troublesome one to treat. I think I have seen some good done by face massage—that is, massage of the dilator muscles of the ala—but not much. When there is dislocation of the anterior end of the septum shaving off the projecting portion will also help matters, though it will not completely rid the patient of his trouble. I have used the various rings, semi-circles, celluloid expanders, short pieces of drainage-tube, &c., that have been from time to time recommended for the condition, and although they may keep the passage expanded whilst *in situ* and for the time give relief they soon become irksome and irritable and are abandoned. In one case under my care I had made a number of similar contrivances of various material carefully moulded and shaped to fit the part accurately. But this patient, like the rest, finally threw them aside and resorted again to his own plan of obtaining relief—namely, rolling up a piece of moist cotton-wool into a ball of the size of a small pea which he poked up the vestibule into the little pit just within the limen at the angle of bending of the lower lateral cartilage. This tiny ball of cotton-wool was just sufficient to prevent the ala from collapsing and it gave me the clue to the method of curing the condition. It struck me that if in place of the cotton-wool ball I could transplant there a ball of the patient's own tissue I should obtain the same end, and this I succeeded in doing in the following way. A strip of mucous membrane as thick as possible and about three-sixteenths of an inch in width was dissected up from the inner wall of the vestibule, leaving the base attached above. The surface of the little pit at the angle of bending of the lower lateral cartilage was next made raw by removing the epithelial layer. The epithelial lining was also removed from the little strip of tissue; the tissue itself was rolled up bandage-wise and then secured to the rawed surface of the pit by a stitch of the finest fishing-gut passed by a needle through the septum into the opposite nostril and back again. When thus fixed the little roll of tissue pressed out the external portion of the lateral cartilage just enough to prevent the ala during inspiration from falling into contact with the septum. It cannot be seen and produces no

deformity, and so far as my experience has gone it is a permanent cure for this troublesome condition. The surface left by rolling up the strip of mucous membrane readily granulates over and causes no inconvenience. Tension in the strip of tissue must of course be avoided and care must be taken that the surfaces of the roll are properly and completely bared and their vascular supply not interfered with by drawing the stitch too tight. The operation is best done under general anæsthesia, as unless the tissues are manipulated delicately the blood-supply of the little strip will be injured and necrosis will take place.

Harley-street, W.

THE TREATMENT OF SCIATICA, ARTHRITIS DEFORMANS, AND SCLERODERMA BY SUPERHEATED DRY AIR (THE TALLERMAN SYSTEM).

A REPORT FROM THE LANDESBAD AT BADEN-BADEN.

BY DR. FR. NEUMANN.

IT is seldom that a specific method of treatment withstands the test of years and continues to fulfil its original promise so well as the Tallerman system for the application of superheated dry air. The apparatus itself has been so frequently described that I may confine myself to a brief indication of its essential features, though there are, on the other hand, thousands of physicians who have not yet seen it. Two different forms are used: (1) for the pelvis; and (2) for the extremities. The apparatus can be heated by electricity or by gas or even by oil, and the temperature in the interior is brought up to 300° F. That such temperatures are actually reached in the upper part of the cylinder is proved by the reading of the thermometer affixed to the top; but whether temperatures so high as the thermometer indicates are maintained inside in an equal degree—whether a limb lying in the apparatus is surrounded by a uniformly heated atmosphere so that we can speak of the *continuous* action of superheated air when once the maximum is reached—that question has hitherto been a matter of assumption. I have endeavoured to solve it in a simple manner. When any portion of the body is inserted in the cylinder the floor on which it rests is protected by a cushion of asbestos resembling a thick layer of felt. Above this and around the limb a covering of woven asbestos, which is like lint in appearance, is disposed. The patient must be completely undressed and comfortably wrapped up in loose cotton wraps and blankets on account of the profuse perspiration which usually occurs during and after the sitting and also to ease the respiration and the action of the heart. Obviously the limb is not exposed to the direct action of the hot air, and for this reason—that if it were left uncovered the *radiant* heat from the metal falling on to the skin must have either a scorching or at least a very irritating and painful effect. The loosely clothed portion of the body inside the apparatus experiences in general no disagreeable sensations from the heat. Where the covering comes into direct contact with the skin the feeling is only one of moderate warmth, but where between the folds hot air has free access to the cuticular nerves one has the sensation of a very intense but comforting heat. The dry air enveloping the limb must obviously draw from it a large amount of moisture through the difference of temperature and saturation; and it follows from elementary physical laws that as large quantities of moisture are withdrawn more and more blood is forced to flow from the deep-seated tissues, where it is cooler, to the heated surface and into the dilated vessels of the skin. For a closer examination of these processes, however, further investigation is needed.

It is a fact that the coverings in which a limb rests when under treatment become moist and that occasionally in a fold of asbestos shut off from evaporation a small quantity of water—unquestionably the product of condensation—may collect; and yet such moisture never becomes superheated, for otherwise scalding would occur, and this we have never observed at the Landesbad in upwards of 2000 applications. Nor is a single case of scalding noted in the whole of the English literature which I have perused. It is a matter for regret that in dealing with such an exceedingly beneficent method of treatment as this all the internal processes should not yet be fully known. Certain it is, however, that the withdrawal of moisture from the limbs must be accompanied by considerable changes in temperature, and further that it is impossible to speak of a constant dry heat in view of the fluctuations in temperature and moisture. In order to obtain at least some authoritative data for commencing the investigation of these points I had a maximum thermometer constructed which can be placed between the asbestos coverings during the sitting and read afterwards. The following table gives the temperatures noted:—

In the apparatus. Degrees Fahrenheit.	Maximum thermometer. Degrees Fahrenheit.	Difference. Degrees Celsius.
225	179·6	25·0
230	195·8	19·0
220	194·0	10·5
260	230·0	10·8
238	212·0	14·0
220	190·0	16·0
250	230·0	11·2

This table shows that inside the cylinder in the course of an hour's use considerable variations in temperature occur, which certainly cannot be without influence on the contents of the superficial blood-vessels and on the amount of evaporation. Immediately after leaving the apparatus the limb is injected and of a uniform red, but has not the slightest appearance of cyanosis or stasis. During treatment the whole body falls into a pleasant perspiration; the pulse is accelerated by some 10 to 20 beats in the minute, but is not noticeably full or dicrotic, still less small and irregular. Cardiac or cerebral sensations of a disagreeable character only occur in highly nervous patients, in whom the mere apparatus—or the "oven" as people often call it—of itself excites alarm. With increasing experience and observation I have been able, as others have done, to apply the treatment without anxiety to patients suffering from arterio-sclerosis, myocarditis, and moderate valvular disease.

Here, as elsewhere, observations of the temperature taken in the mouth or axilla have shown that there is never an important increase in the body-heat, the rise scarcely reaching ½° Celsius as a rule. This conclusion is confirmed by the fact that treatment never induces albuminuria, but rather that it diminishes existing albuminuria from organic kidney disease.

English writers represent the curative action of the treatment in a light which we cannot altogether endorse. My own belief is that super-heated dry air will come much more into general use as a therapeutic agent and will obtain permanent recognition if attention is directed strictly to the results derived from a wide field of observation. Among the English contributions to the subject we find the statement repeatedly made that the local action in a limb or joint on one side of the body benefits the corresponding part on the other side in a striking manner. I willingly admit that the general stimulation of the circulation and of perspiratory excretion may produce general relaxation of the tissues and relief from pain, but our observations afford no evidence that a curative effect is actually transferred from one side to the other by a sort of sympathetic action—whatever that may mean. Equally doubtful, in my opinion, is the assertion that in arthritis deformans, for instance, or in neuralgia such as sciatica, a striking and immediate remission of pain sets in. Nor is the reduction of swollen joints effected so rapidly as is stated in many reports. On the other hand, it is unquestionable that in many cases the curative action continues after treatment. The improved circulation and marked stimulation of the lymphatic system lead in many cases to vigorous nutrition of the parts affected; and so it happens that patients are discharged, going somewhat dejectedly away on crutches and sticks apparently unimproved and uncured, of whom we subsequently hear that improvement, cure, and ability to return to work have been gradually established. It is also much truer to nature that the healing process should follow this course than that of suggestive and miraculous change. Further, the gradual improvement in the condition of atrophied muscular tissues, the increase

in power and bulk of wasted limbs, can only proceed by degrees and by means of improved nutrition. We notice this strengthening of the muscular system after the application of the Tallerman treatment even in cases in which, for the sake of experiment and observation, we have given up the simultaneous use of the Zander exercises. Whether we shall succeed, as some enthusiasts believe, in completely suppressing arthritis deformans, for instance, or in abolishing it altogether out of existence will appear highly doubtful and unlikely to every physician familiar with this terrible disease.

Observation has shown that this treatment, energetic as it seems to be, produces no ill effects either on the local seat of mischief or on the whole system. In particular we have never been able to discover that it causes any wasting or has a lowering effect on the general strength, although it is so powerful and compressed into so short a space of time. On the contrary, in precisely the most successful and at the same time the severest cases the general health and appearance have notably improved, through the relief from pain, as we must suppose, and the powerful stimulation of the circulation.

In this general survey my object has been to show how the hot air acts, and I believe that I have correctly defined the scope of its action. Just because the Tallerman treatment is a blessing to so many invalids I have impartially depicted light and shade to the best of my knowledge. With regard to the application of the treatment to the cure of particular classes of disease much has been written already in England, America, France, and Germany. In Germany the Baden Government, at the instance of the Minister of Medicine, arranged with Mr. Tallerman in the year 1898 for the installation of his apparatus for the public use at the Landesbad, the great State institution for gout, rheumatism, neuritis, and heart disease, and also at the Friederichsbad, the well-known thermo-hydropathic establishment for private patients. As senior physician to the Landesbad I have myself had abundant opportunities of employing the treatment. In order to appreciate the results properly it should be noted that the majority of the patients at the Landesbad are recruited from the necessitous classes—that is to say, we have agricultural labourers, factory work-people, public servants much exposed to the weather and to great physical exertion, such as railway and custom-house employés, together with the women belonging to the same class of life. It is no wonder, therefore, that abundant material for the hot-air treatment should be forthcoming. We have a large number of the severest cases of so-called sciatica (190 cases in 1900), in which the form of illness and its incapacitating effects vary according to the seat of the disease and the acuteness of the attack. True gout is comparatively rare among our patients. On the other hand, affections resulting from acute arthritic rheumatism and—whether allied to them or independent—the various forms of chronic articular rheumatism and the so-called arthritis deformans, into the pathology of which I will not enter here, are all very common (about 300 cases).

It is precisely in dealing with the foregoing maladies that the hot-air treatment is most valuable. The position of physician to an establishment like the Landesbad no doubt gives one the opportunity of gaining vast experience in a particular direction; but, on the other hand, it is one's duty to keep testing again and again the value of the old-established means—hot springs, hot air, and vapour baths—and to apply the combination of these with fango and exercise on parallel lines to the same morbid conditions. To enter fully into the details of this procedure would carry me too far afield, but this much I can say—that both at the Landesbad and in private practice the patients submitted to the Tallerman treatment have been the bad and very bad cases only.

Speaking generally, my indications for the treatment correspond with those set forth more particularly in the English literature. There the morbid conditions dealt with are chiefly rheumatic neuritis, chorea, gout, chronic rheumatism, rheumatic arthritis, stiff and swollen joints, sprains and ruptures of joints, fractures, inflamed flat-foot, &c. In England, on the other hand, they have also treated eczema, of which I have had no experience, whilst for my part I have had the opportunity of treating subacute nephritis, three cases of scleroderma, and one of myxœdema. In the course of the year we have applied the treatment to cases of sciatica and lumbago (70 cases), arthritis deformans (35 cases), chronic arthritic rheumatism, badly-mended fractures with interruption of the circulation, severe sprains of the pelvis and spine, painful cicatrices and contractions after gunshot wounds, three cases of scleroderma, one of myxœdema, and also cases of inflamed flat-foot. No result whatever was obtained in three cases of sciatica, in one of sciatica and lumbago with special involvement of the ileo-inguinal nerve, and in one of ankylosis of the knee-joint following operative removal of rice-seed bodies. Unequal results were obtained in two cases of arthritis deformans, the hands being improved as regards swelling and mobility while the knees remained unaffected and very painful. Unimproved also were two cases of apparently old fracture of the neck of the femur with severe concussion of the pelvis, and hardly any success was obtained in one case of inflamed flat-foot and one of scleroderma, in which only the hands were relieved. All the remaining cases were either substantially improved or completely cured. In many cases the improvement is of such a character as to make a truly wonderful impression upon the patients and their friends, and it may be said of them that they would otherwise remain absolutely incurable. I append a few such cases.[1]

SCIATICA.

CASE 5.—The patient was a man who had to travel a great deal. The cause of his illness was repeated chills; otherwise he was quite healthy. There were bilateral sciatica, extreme pain, and insomnia; the slightest movement—walking, sitting, or standing—was impossible; the gluteal nerves were particularly affected. He was unable to leave his bed for five months. All previous treatment was useless. Pelvic Tallerman treatment, alternating with natural baths, were given. Complete cure resulted in two months. The patient, who would otherwise have had to give up his livelihood, now carries on the whole of his exacting business as before. The cure is now of seven months' standing.

CASE 222.—The patient was a woman who had overstrained herself while sick-nursing and was supposed to be suffering from inflammation of the right hip. She had been under treatment in the hospital for three months without any improvement worth mentioning. On examination she was found to have gluteal sciatica. The hip was freely moveable; there was total inability to walk. She had great pain even in bed. Pelvic Tallerman treatment was given; there was complete cure in four weeks. There has been no return.

CASE 92.—The patient was a man who had severe sciatica following fracture of the neck of the femur. He had violent pain, atrophy of the muscles of the thigh, and was unable to walk for months. Pelvic Tallerman baths were given; he walks freely and without pain.

CASE 107.—The patient was a woman suffering from bilateral sciatica; she was sent to me after being bedridden for six months for osteo-malacia. She was deprived of almost all power of movement in the pelvis and legs; she tried to walk with a supporting frame, such as little children use. Double sciatica was diagnosed. Pelvic Tallerman treatment was given; in six weeks the patient left the institution walking easily with a stick, but had a return after getting a chill in the kitchen.

CASE 116.—This patient had a stiff knee; the thigh was flexed, there was pain in the left sacro-iliac joint and wasting of the left thigh; the patient had to be carried and could only walk with a stick by the greatest effort. Complete cure resulted and she now walks easily.

CASE 129.—The patient had bilateral sciatica; there were pain in the sacrum and sacro-iliac joint and shooting pains in the ileo-inguinal regions; the patient walked bent double and there was wasting of the left thigh. Result: the patient is completely free from pain and walks upright.

CASE 292.—The patient had ankylosis of the spine, lumbago, and sciatica, under the guise of coxitis; there was inflammation of the shoulder-joint and the arm could scarcely be raised to the horizontal position. Result: there is free movement of the hips, the spine can be flexed and turned, the arms can be raised high without pain, and the patient walks well.

CASE 474.—The patient had left sciatica; there were wasting of the gluteal muscles and pain in the gluteal nerves; the sacrum and sacro-iliac joint were painful; the right shoulder moved with difficulty. Complete cure resulted.

[1] Some case-notes from private practice are included; the rest are from the Landesbad.

CASE 643.—The patient had inflammation of the left hip-joint. On examination a diagnosis was made of gluteal sciatica only; the patient had been treated with weight and pulley for six months and was sent to us by an eminent surgeon as probably suffering from sciatica; a few steps only could be taken on two crutches and with great pain. Pelvic Tallerman treatment was given and the patient walks easily with one or two sticks.

CASE 710.—This patient arrived quite bent double and was scarcely able to walk. There was left sciatica, the gluteal nerves were particularly affected, and there was atrophy of the left gluteal muscles. The disease was of six years' standing. Pelvic Tallerman baths were given; great improvement resulted, and the patient can go to work and bends and turns the lumbar spine without pain.

ARTHRITIS DEFORMANS.

CASE 3 and 720.—This patient since 1899 had suffered from gradually increasing stiffness of both shoulders and could not raise the arms; the left wrist was stiff, the knees and the ankles were swollen and painful, and the fingers were stiff. The patient had to be carried into the Landesbad. Walking or writing could not be done and the patient was perfectly helpless. After a course in the spring and again in the autumn the patient got completely well, is free from pains, and walks, writes, and raises the arms above the head.

CASE 253.—The patient had arthritis deformans of the hands and all the finger joints; it had been gradually coming on for four years. The patient was unable to work. After treatment the right wrist was somewhat stiff, but the fingers were no longer swollen or painful and were freely moveable. The fingers can now be flexed, writing and knitting can be done, and the patient is fit for work again.

CASE 375.—The patient had arthritis deformans following influenza of two years' standing; the ankles and knees were attacked and the hands were severely affected. The patient could not work. After treatment walking was easy and the hands were free from swelling and pain. The patient can now return to work.

CASE 43.—The patient had typical arthritis deformans in both knees and in 1899 could not walk, had to be carried, and left the institute walking with sticks. In 1900 there were further improvement and perfectly free movement. The patient is completely cured.

CASE 44.—The patient had arthritis deformans of both knees, which were stiff and fixed at an angle. After treatment the swelling disappeared, there was free painless movement, and the patient walked upright.

CASE 78 and 870.—The patient had arthritis deformans of both knees and ankles. There were atrophy of both thighs and calves and pain in the sacrum. On arrival in the spring the patient could not walk, had to be carried, and could not rise from the sitting posture without help. The right shoulder was stiff. Result: swelling of the knees has subsided, walks easily, and the right shoulder is better. The patient can return to work.

CASE 90.—The patient had severe arthritis deformans of both hands. She could not close the hands and could not follow her calling as teacher. After treatment the hands were still somewhat swollen but were freely moveable. There was progressive improvement after discharge, so that the patient is now completely free from disease and fit for work.

CASE 135.—The patient had rheumatic ankylosis of the lumbar and middle vertebræ; the spine was slightly scoliotic but absolutely immoveable, like a fixed splint; bending and turning were impossible; the knees were swollen and painful. After treatment the spine could bend and turn, though movement was limited, the knees were free, and the patient is fit for work within limits.

CASE 654.—The patient came in 1899 with arthritis deformans in the knees and ankles and flexure of the hip. He had to be always carried and he left apparently without any improvement. Some months later the swelling of the affected joints subsided. The patient was free from pain and walked well, but as the same trouble still remained in the right ankle he underwent another course in 1900, and left the hospital a capital walker and a thoroughly healthy man.

I add here some other diseases which have undergone the Tallerman treatment. Highly interesting, and the first successful one of its kind, is a case of scleroderma, which I shall describe somewhat more in detail, as this disease has not previously been treated by the Tallerman method.

SCLERODERMA.

CASE 236.—The patient was a woman, 46 years of age, in whom the disease had begun six years before. The cause was unknown. The skin was affected on the abdomen and chest, almost the whole of the back, the feet, and the lower part of the legs, knees, fore-arms, and hands. As for the last, the disease was so far advanced, particularly in all the fingers, the left wrist, and the back of both hands, that the skin could not be moved in the slightest degree. With fingers crooked like talons and standing out from each other, the hands presented a rigid whole as if chiselled out of stone, and the illusion was such that in examining them one was almost afraid of snapping a finger right off. The woman could scarcely walk, as the legs and feet were similarly affected, and, moreover, the sclerosed skin at every attempt to move and even spontaneously, particularly at night, caused her maddening pain. The sensibility of the skin was preserved, but, on the other hand, not the slightest sign of perspiration could ever be produced even when the affected parts were exposed to the hottest sun. The mail-like skin on the back and chest prevented proper respiration. The heart, urine, and lungs were free from abnormal signs. The patient presented an appearance of frightful misery and wretchedness. Her features were also distorted by pain, for the disease had begun to attack the face. In the year 1879 I published a case of scleroderma in Virchow's *Archiv* in which I had attempted to ascertain the condition of the sweat glands by pilocarpine injection, but without any success in inducing perspiration. I had also removed a piece of diseased skin and made some microscopical sections. Of the sweat glands some thin threads could still be distinguished embedded in dense fibrous tissue. With this experience in my mind I had recourse in the present case to the Tallerman treatment with very faint hopes. After a few sittings, however, perspiration was induced not only in the unaffected parts, but also in the hands and feet under treatment in the apparatus. The pains subsided, the skin began to be moveable again, the fingers lost their claw-like appearance and could be brought closer together. The patient began to walk better. After a stay of four weeks she left the institution. On Oct. 11th she returned and informed us that the improvement had steadily progressed. Her appearance was materially better; her previously depressed frame of mind had given place to a lively expectation of becoming once more able to work. She walked with ease, and could sit down and get up without any of the difficulty and pain she had previously felt, and the skin was looser. Even in the hands, which were still in need of further improvement, though the fingers could almost be closed, she had the feeling that they "were alive again." At the beginning of 1901 she could write, knit, walk, was free from pain, and much stronger.

MYXŒDEMA.

CASE 652.—The patient was an unmarried woman, 34 years of age, previously healthy. In 1898, after being severely poisoned by gas, she began to suffer from myxœdema, which chiefly attacked the lower part of the back, the buttocks, and the thighs. She was for some time in the hospital for nervous diseases at Strasburg, and was sent to me from there. She was very anæmic and very depressed; she wept readily and was somewhat weak mentally. She could scarcely walk and had to be half carried into the Bad. The skin was greatly thickened, pale, doughy, infiltrated, and scarcely moveable on the underlying tissues. She was first treated with inhalations of oxygen and hip baths. As soon as she became somewhat more composed the Tallerman treatment was applied. The skin became distinctly thinner and more moveable; she improved greatly in appearance and strength, and eventually could walk by herself not only into the town but to the old castle, a distance of three miles with a rise of 600 feet.

The improvement in this case cannot, of course, be attributed to the hot-air treatment alone, but it had, at any rate, a favourable effect on the condition of the skin. In sciatica and chronic articular rheumatism I have seen good results obtained in a great many cases by combining other methods of treatment—for instance, by alternating ordinary warm baths with hot air or hot air with fango, and that in very severe and old cases. But in the end one picks out the most hopeless and intractable cases for the Tallerman

treatment, and I am bound to say that there has hitherto been no method of treatment so capable as this of improving arthritis deformans as to effect the abolition of pain, the restoration to work, and a new lease of life. Such cases could only be compared in their hopelessness with far advanced pulmonary tuberculosis. All that we could previously give these unfortunates was pity and some mitigation of suffering. The Tallerman treatment has accomplished a most gratifying revolution in this field of medicine and is worth more than all previous remedies put together. The improvement obtained in ankylosis of the spine, which is closely connected with arthritis deformans, justifies us in entertaining hopes for many departments of orthopædic surgery, and the success in scleroderma described above places this disease, which has hitherto been regarded as incurable in its severer forms, in a more favourable light from the therapeutic point of view.

NOTES ON A CASE OF TEMPORO-SPHENOIDAL ABSCESS FOLLOWING MIDDLE-EAR SUPPURATION; OPERATION; RECOVERY.

BY PERCY JAKINS, M.D. DURH.,
SURGEON TO THE CENTRAL LONDON THROAT AND EAR HOSPITAL.

A MAN, aged 24 years, was admitted into the Central London Throat and Ear Hospital on August 21st, 1899, complaining of great nausea and giddiness and an excruciating headache over the frontal and occipital regions and on the right side of the vertex. There was a clear history of phthisis, four of his relatives having died from this disease. The patient had had whooping-cough at the age of four years, and measles when he was a year older; when he was 10 years old he had scarlet fever, and three years previous to the time of his admission to hospital he suffered from influenza; the ears had not been affected in any of his illnesses. For two years he had had a discharge from the right ear, the cause of which was unknown. Five months before admission he attended a special hospital for this discharge; a polypus was removed, and he was told to syringe his ear with a lotion and to have a white powder blown into it, but neither the removal of the polypus nor the treatment prescribed caused any diminution of the discharge which became offensive. 17 days before admission (August 4th) the patient was said to have complained for the first time of pain about the right ear (especially over the mastoid) which extended to the head and was accompanied by vomiting on that day. The pain increased in severity during the next seven days and Dr. John Cross of Gloucester-road, N.W., who was called in, found the patient suffering great agony; the patient's sufferings were somewhat relieved by the free use of sedatives. On August 14th he appeared so much better that he went out for a walk for a couple of hours, and on the evening of the same day was able to play the piano; next day, however, he relapsed into his former state and became worse, and a second attack of vomiting occurred. The patient's appetite appears to have kept very good, but his relatives had noticed that for some four months before this attack he constantly complained of being cold, and was accustomed to crouch beside the fire, although it was warm weather; there was no history of a distinct rigor. The temperature was noted from the 16th until the date of his admission; the highest recorded was 101·4° F. on the evening of the 20th; the lowest was 98·4° on the morning of the 19th. The bowels had been very constipated, necessitating the free use of aperients.

On admission the temperature was 99·4° and the pulse was 64. The patient had severe pain all over the right side of the head, the right mastoid was very tender on pressure, and there were marked giddiness and nausea; the complexion was very pale, there were sordes on the lips and tongue, and the breath was decidedly offensive. The patient was heavy and drowsy, his speech was slow, and his body was much wasted. On examination the meatal canal was found to be full of offensive pus, and when this had been removed there was seen to be a distinct bulging of the superior and posterior meatal wall. On the following day (August 22nd) the patient, whose temperature was 98·4° at 10 A.M., was placed under chloroform, the part having been previously shaved and rendered aseptic, and a semilunar incision was made over the right mastoid from the lower border of the temporal muscle to the apex of the mastoid, the periosteum was reflected, and the cartilaginous part of the meatus was separated from the osseous. The ear having been drawn forward the antrum was explored and was found to contain granulation tissue and cholesteatoma; this was curetted. The attic was found to be in a similar condition and was treated in the same way, and a communication was found leading to the middle fossa, the dura mater being exposed. The skin incision was carried upwards, the temporal muscle was divided, the periosteum was reflected, and a piece of bone was removed by the trephine. As the dura mater looked healthy and there was no bulging I decided not to explore the cerebrum, feeling sure that if an abscess was there it would make its way towards the point of least resistance. The wound was packed with iodoform gauze and the patient was put back to bed. On the next day the patient felt decidedly better, the headache was less, and he had slept fairly well; the highest temperature for the day was 99·4°. On the following day he expressed himself as feeling quite well; the highest temperature for the day was 99°. On the 25th the patient suddenly became exceedingly restless and complained about noon of severe headache, especially over the occipital region. He soon became drowsy and then comatose, and the nurse noticed that he did not move his left arm or left leg. I was sent for, and I found that the patient had complete left hemiplegia. Chloroform having been given, on removal of the packing the dura mater was seen to be bulging through the trephine opening. The dura mater was incised, a medium-sized trocar and cannula was then driven into the brain-substance for a distance of one and a half inches, and on withdrawing the trocar a very offensive pus escaped. A Horsley's pus seeker was next used and the abscess cavity was emptied of its contents, about two ounces. A large drainage-tube having been passed into the cavity the wound was packed with gauze. The temperature was 97·4° at 6 A.M. The evening temperature (taken at 5 30) was 103·0°. The patient was very restless, continually moving his right leg; in a short time he began to move his left leg. Next day (August 26th) he was better and could move his left arm and leg; the highest temperature for the day was 102·8° at 2 P.M. On the 27th the highest temperature for the day was 101·2°. On the 28th, as the patient was very restless and almost maniacal, shouting and trying to get out of bed, the night nurse was obliged to send for my colleague, Dr. Peter H. Abercrombie, who prescribed 40 grains of bromide of potassium, followed in half an hour by a subcutaneous injection of one-third of a grain of morphia; after this the patient slept well. The highest temperature for the day was 101° at 10 A.M. On the next day the drainage-tube was removed, cleaned and shortened, and re-inserted; the highest temperature for the day was 100·4 at 2 A.M., and it was thenceforth normal. The patient made an uninterrupted recovery. The tube was removed on Sept. 20th and he left the hospital two days afterwards, having been resident for 33 days. I examined him on Dec 9th and found him quite convalescent. To use his own words, "he felt better than he ever did," and he had gained weight and strength.

This case, I think, bears out the opinion which I hold that the presence of a polypus or granulation tissue in the external meatus indicates trouble in the antrum or attic or both, and that simple removal of the growth through the external meatus in no way touches the disease which is causing the trouble. It also illustrates another point—namely, that in cases of suppuration from the middle ear which do not yield rapidly to treatment the advisability of the radical operation should be seriously considered, not only with the view of arresting the discharge from which the patient suffers but to prevent deeper mischief, such as cerebral abscess. Within the last two years I have operated upon four cases of cerebral abscess caused by extension of mischief from the middle ear.

For the full notes of the foregoing interesting case and for the necessary after-attention upon the patient I am indebted to my colleague, Dr. Abercrombie.

Harley-street, W.

"SELENIUM COMPOUNDS AS FACTORS IN THE RECENT BEER-POISONING EPIDEMIC."

BY F. W. TUNNICLIFFE, M.D., M.R.C.P. LOND.,
AND
OTTO ROSENHEIM, PH. D., F.C.S.

WE have quite recently [1] drawn attention under the above title to the fact that selenium was present in a sulphuric acid obtained from the maker implicated in the recent epidemic and in two samples of beer obtained from a Salford brewery. Since then we have also found it in an invert sugar obtained from Bostocks.[2] Our quantitative estimations of selenium in beer and brewing sugar have confirmed our original conclusion "that selenium compounds have played a definite rôle in the recent beer-poisoning epidemic, their part being, however, subsidiary to that of arsenic." Although we intend to publish later our results and methods in detail, together with further observations, it is important so far as concerns the subject matter of this note to state that in the samples of beer examined by us selenium dioxide was present in quantities amounting to from one-fourth to one-third of the arsenic.

In an interesting paper by Dr. W. H. Willcox in THE LANCET of March 16th, p. 778, attention is drawn to the influence of selenium upon the formation of the arsenical mirrors obtained by Marsh's test. These observations, however, refer to the presence of selenium in large excess (from double to 20 times the amount of arsenic). Dr. Willcox is evidently unaware of the work of L. Dawydow.[3] This observer drew attention to the retarding and even completely inhibitory influence of relatively large quantities of selenium upon the formation of arsenical mirrors, and gave methods for its elimination. We were some time ago able to convince ourselves of the correctness of Dawydow's observations. At the same time we obtained conclusive proof that when the selenium present amounts to from one-fourth to one-third of the arsenic it practically does not interfere with the formation of the arsenical mirror, this latter not being distinguishable from a pure arsenical one. With regard to Dr. Willcox's apparent confirmation of our early statement that selenium in the absence of arsenic is not shown by Marsh's test, we would point out that according to our observations this is only the case when a lead acetate wash-bottle is used, whereby the small quantities of hydrogen selenide evading the precipitation on the zinc are retained as lead selenide. We were in the habit of constantly employing this wash-bottle as a precautionary measure[4] and hence the statement.[5] If, however, the lead acetate wash-bottle is not used it is possible to show even one-tenth of a milligramme of selenium by Marsh's test when using a capillary tube (small red ring with yellowish margin).

With regard to the identification of small quantities of selenium in organic fluids in the presence of larger quantities of arsenic by means of Reinsch's test we do not think that anyone not specially directing his attention to it could detect the selenium by microscopical examination of the sublimate, the crystals being for the most part badly defined. We have made many such experiments ourselves, but have relied upon the micro-chemical reactions of the dissolved sublimate for identification of selenium.

Our results have proved that selenium was present in two of the Manchester beers in poisonous quantities, but in neither case did the amount of it reach that of the arsenic. We therefore quite agree with the conclusions of Dr. Willcox that in the beers examined by him selenium was not present in amounts 20 or 10 times as great as the arsenic.

King's College, London, March 19th, 1901.

[1] THE LANCET, Feb. 2nd (p. 318), and 9th (p. 434), 1901.
[2] For this sugar we are indebted to Mr. Gordon Salamon.
[3] Farmazeft, 1895, iii., 1, Abstracted in the Chemiker Zeitung, Rep., 1895, page 70. Analyst, &c.
[4] Compare Polenske, Arbeiten aus dem Kaiserlichen Gesundheitsamt, 1889, and Kühn und Saeger, Berichte der Deutschen Chemischen Gesellschaft, xxiii., 1798.
[5] Although not distinctly stated, we presume that Dr. Willcox used an acetate of lead wash-bottle when confirming our statement.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF MALFORMATION.

BY W. R. H. STEWART, F.R.C.S. EDIN.,
SURGEON TO THE EAR AND THROAT DEPARTMENT OF THE GREAT NORTHERN CENTRAL HOSPITAL; CONSULTING SURGEON TO THE LONDON THROAT HOSPITAL.

THE little patient, who might justly be termed a pathological curiosity, was brought to the out-patient department of the Great Northern Central Hospital. The child had a double hare-lip, a double cleft palate (wide and extending the whole length), and a deep central ulcer on each cornea. There were half-a-dozen supernumerary auricles scattered about the face, the largest situated just below the left extremity of the lower lip and the remainder scattered about the left side of the face and neck. On the right side the ear was represented by a much enlarged lobule and a portion of the tragus. I could find no sign of meatus. There was

no opening through the soft tissues and no ridge or opening in the firmer structures could be felt. Having removed a portion of the pre-maxillary bone both sides of the lip were closed, the whole being done on three separate occasions. The space on the right side was very great, but it united very well. The child died on the day following the last operation, and unfortunately the body was allowed to be taken away without a post-mortem examination being made, so that the real state of the ear could not be obtained. The left ear was normal.

Devonshire-street, W.

A CASE OF LANDRY'S PARALYSIS.

BY ANDREW ROSE, M.B., C.M. ABERD.

ON Jan. 15th, 1901, my colleague, Dr. H. Osborne was called to see a youth, aged 18 years, who was taken suddenly ill while at work. He found him suffering from paralysis of the lower extremities. There was no history of any injury and his fellow workmen said that previously to his being taken ill he was quite well and was working as a fitter at his bench as usual. The first symptoms were that he felt cold and complained of acute pain in his back and right side and immediately afterwards he said that the "use went out of

his legs" and that they were like "pieces of wood." I saw him three hours afterwards at his home in much the same condition. He was unable to move either leg and complained of their icy coldness even after continued counter-irritation and warmth. I made a careful examination of the paralysed area which extended from an imaginary line on a level with the umbilicus downwards; the superficial and deep reflexes were abolished and no amount of pinching or pricking would elicit any symptoms of pain. Faradaic and galvanic currents were also applied and both gave negative results. A strong Faradaic current was passed through the muscles of each arm but they reacted sluggishly as also did those of the trunk. The mind was quite clear and the patient remarked that he was quite well if his legs were right. On my second visit 12 hours afterwards I found that the general condition was much worse and that he had had a restless night, but had partaken of a good deal of liquid nourishment. The heart showed signs of failing and the respirations were frequent and laboured. The interrupted current gave little or no response when applied over the muscles of the upper extremity, which showed that the paralysis was ascending. The patient was drowsy and listless but when roused he was quite sensible. Both pupils reacted sluggishly. There was nothing abnormal in the temperature. During the night he passed urine and fæces involuntarily. He died within 24 hours of the onset and was conscious to the end. At the necropsy none of the organs were found to present any pathological changes except the liver and spleen which seemed to be enlarged and mottled. The brain and spinal cord were apparently quite healthy.

This case of acute ascending paralysis is deserving of note owing to the sudden onset with no premonitory symptoms whatever and the very rapid course of the illness, also the absence of sensation over the paralysed parts. Bristowe, Taylor, and Westphal state that paralysis generally takes place in two or three days after the premonitory symptoms of weakness in the legs, that the course of fatal cases is from eight to 10 days and that the sensory nerves are scarcely if at all involved. I find that exposure to cold is put down as one of the causes of the disease. The morning of Jan. 15th was very cold indeed in Horwich and my patient was standing in a draughty part of the workshop, so it is probable that the low temperature was the initial cause in his case by bringing on a spasm of the spinal arterioles; or would the extreme cold act as a stimulant to some latent hereditary something and produce the paralysis? A sister of the deceased, who is now 30 years of age, has had paraplegia since infancy following acute anterior poliomyelitis. There might be some hereditary connexion. The rapid course of the disease would suggest the thought that there must be some infective toxic influence at work. Altogether the case has been a very singular one and it shows that much care should be observed in giving a prognosis in all cases of paraplegia. There were no symptoms whatever on the day preceding death that the case would have a fatal termination so soon.

Horwich, Lancs.

"A CASE OF PEMPHIGUS NEONATORUM IN AN INFANT THREE DAYS OLD."

By VICTOR J. HODGSON, L.R.C.P. LOND., M.R.C.S. ENG.

I WAS interested to read Dr. C. J. Glasson's communication in THE LANCET of March 9th, p. 697, having myself had a similar case last January. The patient was a full-time female child. On the morning of the third day I noticed that both eyelids had on them bullæ of the size of pigeon-peas, one on the right eye and two on the left. They contained a transparent fluid and were surrounded by a rose-coloured ring. There was very little exudation into the subcutaneous tissue of the eyelids, as shown by the absence of swelling. On the following day there was a fresh bulla of the size of a crown-piece on the abdomen near the umbilicus, and during the following week several more appeared, choosing for sites the fold of the groin, the outer parts of the thigh, and the nape and sides of the neck. The child seemed none the worse for this severe skin affection until from a week to 10 days from its onset, when either the contents of the bullæ had become pustular or the cutis had broken leaving a raw surface; then the child became restless, cried a good deal, and passed very offensive motions. On one occasion she had a fit. Eventually the trouble cleared off and the child was entirely free from blemish three weeks from the date of the first onset. There was no general desquamation. I feel sure that the condition was not due to syphilis because (1) I know the antecedents of both father and mother, the latter of whom has had no miscarriage, stillbirth, sore-throat, or loss of hair; (2) there is one elder child, aged three years, who is equally free from suspicion; and (3) the eruption did not appear on the soles of the feet, the palms of the hands, or the nates. The umbilical cord came away normally; there was nothing to suggest the possibility of infection by this channel. During the birth of the child I noticed that the eyes received a gush of amniotic fluid, and there was some delay in cleansing them. It is interesting in this connexion that the first appearance of the bullæ was on the eyelids. I am informed by a fellow practitioner that the child's cousin on the father's side suffered from a bullous eruption at an equally tender age.

Westcliff-on-Sea.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum propriis collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

BIRMINGHAM GENERAL HOSPITAL.

A SUCCESSFUL CASE OF EXCISION OF THE CÆCUM, VERMIFORM APPENDIX, AND PORTION OF THE ILEUM FOR CARCINOMA.

(Under the care of Mr. GEORGE HEATON.)

THE advance in recent years in the treatment of malignant disease of the large intestine has been very great. It is now only a few years since the palliative treatment of colotomy of one form or another was the only aid that surgery had to offer to the sufferers from this serious malady. The discomfort and annoyance resulting from colotomy were in many cases considered to be sufficient argument against its performance. Excision first replaced colotomy in malignant disease of the lower three inches of the rectum. At the present time complete removal of the growth is undoubtedly indicated in all cases where a diagnosis has been made sufficiently early, for the results are extremely good. A case in many respects resembling the one recorded below was published by Dr. Lowson of Hull in 1893.[1] The value of Murphy's button for intestinal anastomosis is still not acknowledged by everyone, but it may certainly be said that those who have used it much speak very well of it, while those who condemn it have in most cases not employed it on more than one or two occasions.

A delicate-looking anæmic woman, aged 53 years, was admitted into the Birmingham General Hospital on July 31st, 1899, suffering from abdominal pain and extreme weakness. The patient had never been very strong. Since her childhood she had always had some trouble with her bowels and had been habitually constipated. Three years before admission she began to have attacks of abdominal pain and the constipation and general irregularity of the bowels became worse. She had never passed blood in any quantity from the bowels but had been troubled latterly with hæmorrhoids. Eight months before admission she had a severe abdominal illness and was laid up in bed for several weeks with sickness and abdominal pain. Since that time she had rapidly deteriorated in general health and had lost weight. When first seen she weighed only 4 st. 8 lb. Her mother died from an internal cancer at the age of 72 years.

On admission the patient was extremely pale and sallow. She was very weak and feeble, especially on the least exertion. The conjunctivæ and mucous membranes were very pale. Her appetite was poor and capricious. The walls of the abdomen were lax. A large hard mass of about the size

[1] THE LANCET, March 25th, 1893, p. 648.

of a cricket-ball could be felt and seen in the right iliac fossa. It was irregular in outline and was situated about two inches from the right anterior superior iliac spine in a line between it and the umbilicus. The tumour seemed fixed to the abdominal wall but was somewhat moveable in the iliac fossa. It was tender on pressure and dull on percussion, and pain radiated from it across the abdomen. The bowels were opened irregularly, sometimes several times a day. The motions were loose and mixed with small scybala and covered occasionally with mucus. The temperature was raised slightly at night and she slept badly owing to pain. The heart and lungs were apparently normal. The urine was pale-coloured and small in quantity and contained neither sugar nor albumin. A diagnosis of malignant disease of the cæcum was made and it was decided to excise it if possible.

An operation was performed on August 11th. Chloroform was administered and the abdomen was opened by a vertical incision in the right linea semilunaris. The tumour, which was an enlarged cæcum, was adherent to the abdominal wall and a portion of this was cut away to free it. The cæcum, appendix cæci, and termination of the ileum were then dissected up from the iliac fossa. Two or three large branches of the ileo-colic artery were exposed by this dissection on the inner side of the cæcum and were ligatured. It was then possible to bring the cæcum with its appendix, the lower end of the ileum, and part of the ascending colon outside the abdomen through the operation wound. This was done and the peritoneum was carefully packed with sponges. The small intestine was then divided about three inches from its junction with the cæcum after previously clamping it with a Makins clamp. The ascending colon was then treated in the same manner about three inches up. The portions of ascending colon, cæcum, and small intestine between the clamps were then carefully dissected away from their remaining attachments, and after the ligature of a few remaining small blood-vessels were removed.

The ileum was then united to the ascending colon in the following manner. The cut end of the colon was closed by a continuous suture of its cut mucous membrane and a double row of interrupted Lembert sutures was passed through its serous and muscular coats. These sutures served the double purpose of closing the intestine and of arresting all bleeding from the cut blood-vessels. A short lateral incision was finally made on the inner side of the colon about an inch above its closed end and an anastomosis was made with the small intestine by means of a medium size Murphy's button. The intestine was then returned into the abdominal cavity, the sponges were removed, and the abdominal wound was completely closed by a number of silkworm-gut sutures passing through all the layers of the abdominal wall. The operation lasted in all an hour and 20 minutes. There was no shock and the patient's condition at its termination was very good.

The after-history was uneventful. The patient was fed per rectum for the first 48 hours, and was then given fluid nourishment by the mouth in gradually increasing doses. The bowels were opened naturally on the evening of the second day, and never afterwards gave any trouble. The wound was dressed for the first time on the seventh day, and was found to be soundly healed. The button was found in the rectum on August 24th, 13 days after the operation, and was removed. On the 27th the patient sat up for the first time, and was discharged convalescent on Sept. 15th wearing an abdominal belt. She has shown herself from time to time since, and is now in better health than she has been for some years. She has gained more than two stones in weight and is strong enough to manage a shop as she did before her illness. Her bowels act daily and medicine is rarely, if ever, required.

The cæcum with the growth is shown in the accompanying illustration, which is reproduced from a photograph. The tumour in the fresh state almost filled the lumen of the intestine and was greyish white on section with small blood extravasations in places. Microscopically it proved to be a typical cylindrical-celled carcinoma.

Remarks by Mr. HEATON.—The radical treatment of malignant growths of the large bowel by excision has lately had attention drawn to it by reports of successful cases by various surgeons. Barker, Paul, and McAdam Eccles have all lately published such cases. The case which has been related in the above abstract is a good instance of such an excision and shows the ease with which the operation may be done in a case not complicated by extensive adhesions and in which a diagnosis has been made before symptoms due to acute obstruction have supervened. Unfortunately at present it is only in a small percentage of cases of malignant disease of the large intestine that such

The cæcum laid open to show the growth.

extirpation can be undertaken or advised with much hope of success. The diagnosis is frequently arrived at only in a late stage of the disease when obstruction has already supervened or when the growth is already so advanced, or has involved neighbouring structures so extensively as to render its removal impossible. The surgeon can then only hope to palliate the patient's sufferings by establishing an artificial anus above the growth.

In cases where complete removal is possible it is at present a debated point whether it should be done in one or two stages. By the latter method the affected portion of bowel is first of all brought outside the abdomen and fixed there, the portion of it which contains the growth being subsequently excised. The patient is thus left with an artificial anus or is subjected to an operation for its cure. Theoretically, primary excision and end-to-end anastomosis constitute the better procedure, if the operation be performed before the onset of intestinal obstruction. But unfortunately the condition of the patient will frequently preclude the performance of so severe an operation and then we must be content to do the excision in two stages. For intra-peritoneal intestinal anastomosis in these cases there is no method, in my opinion, to compare with the use of a Murphy's button. The shock and severity of the operation by its use are much lessened because the anastomosis can be so rapidly performed.

CARDIFF INFIRMARY.—Three years ago it was decided to provide a gynæcological ward in the Cardiff Infirmary, and Dr. John D. Williams was appointed gynæcological surgeon. During the past two years the management committee have been compelled to lessen their expenditure and the women's ward was made to suffer until now Dr. Williams has only eight beds at his disposal, with an unoccupied ward of 20 beds which are empty from lack of funds for their support. Lady Windsor, Lady Aberdare, Mrs. Mackintosh of Mackintosh, and Miss Talbot have each undertaken to defray the cost of one bed and are appealing to the ladies of Glamorganshire for annual subscriptions of about £800 to enable the ward to be occupied completely and permanently.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

The Clinical and Pathological Features of Pernicious Anæmia, its Antiseptic and Serum Treatment.

A MEETING of this society was held on March 26th, Dr. F. W. PAVY, the President, being in the chair.

Dr. WILLIAM HUNTER made a communication on a case of Pernicious Anæmia with Observations on the Clinical Features, the Infective Nature, and the Antiseptic and Serum Treatment of the Disease. The patient (who was exhibited before the society) was a man, aged 37 years, whose symptoms—breathlessness, palpitation, and progressively increasing weakness—had come on very gradually two years before. The case had previously to coming under observation been regarded as a case of gastric catarrh on account of the discomfort in the stomach. The most prominent symptoms were a constant pain in the stomach and mouth, which was liable to exacerbations, coming on about every three weeks and lasting two or three days, after which the mouth and tongue became each time very sore and the tongue sore. The gastric symptoms consisted of pain in the stomach, nausea, and retching, which were worse when the organ was empty. A curious tingling and numbness of the fingers were complained of occasionally. The history was a very typical one as regards the oral sepsis, extending over eight or 10 years, followed eventually by gastric pains. The gradual onset of the anæmia with weakness and with recurrent attacks of gastric disorder and glossitis were also very characteristic. On admission there were four groups of symptoms—(1) weakness and extreme anæmia and their usual effects; the red corpuscles were only 27 per cent. of the normal and hæmoglobin only 35 per cent.; there was also poikylocytosis; (2) hæmolytic symptoms—viz., urobilinuria and a lemon colour of the skin; (3) oral and gastro-intestinal symptoms—viz., sore tongue, dental necrosis, suppuration of the gums at one part (which had existed for 10 years), and gastric pains; and (4) toxic symptoms—viz., tingling and numbness of the fingers and irregular pyrexia. The treatment consisted of oral and gastric antisepsis, the teeth were scraped, some were extracted, and a mouth-wash was used. Mercuric chloride was administered constantly. On July 9th, 13th, and 23rd three injections of anti-streptococcic serum were administered. After the first the red corpuscles rose to 36 per cent., after the second to 52 per cent., and in the course of three weeks the red corpuscles rose to 65 per cent., the hæmoglobin to 72 per cent., the hæmolysis (as evidenced by the colour of the urine) was arrested, and the patient's health slightly improved. The injections were followed by febrile reaction, that after the first was very marked. The temperature during the first week after admission had been variable, between 99° and 97·5° F., but after the injections it became steadier and about normal. The patient was so much better that he went for a time into the country. On Sept. 26th liquor arsenicalis was added to the other treatment. The improvement continued, the patient gained over one stone in weight, and on Dec. 20th the red corpuscles had risen to 94 per cent. and the hæmoglobin to 100 per cent. The only symptom remaining was occasional numbness in the fingers. The case, Dr. Hunter remarked, must be regarded as a typical one of pernicious anæmia in its mode of onset and clinical history and the four groups of symptoms present. The case was the first he had been able to treat on the lines he had recently recommended—viz., complete and long-continued oral and gastric antisepsis. These aimed at the removal of the infective cause of the disease and of the septic conditions of the mouth and stomach which favoured its operation. Nevertheless, the infection still remained on the tongue and showed periodic tendency to break out afresh. On several occasions the soreness of the tongue had returned, accompanied each time by feelings of illness and increased signs of hæmolysis in the urine, but each time they were checked by strong antiseptic measures. The results clearly showed the beneficial effects of serum treatment, at the same time confirming the infective nature of the disease. The first two doses were 10 cubic centimetres, afterwards 5 cubic centimetres were given. In view of the reaction it would be advisable in future to begin with only 5 cubic-centimetre doses and to see that the temperature was not variable and erratic at the time of the injection. Dr. Hunter illustrated his paper with lantern slides showing the clinical and pathological data of the disease and a schematic representation of the course and results of his investigations during the past 15 years.

Dr. CHARLES REISSMANN asked what changes in the blood enabled them to identify pernicious anæmia with certainty. He had seen two cases lately which showed all the clinical features of pernicious anæmia and which were so diagnosed during life, but at the necropsies colloid cancer of the stomach was revealed which had never been suspected. Poikylocytosis occurred also in other diseases—in leukæmia, for instance—though here the myelocytes and leucocytes enabled them to identify the disease.

Mr. T. J. BOKENHAM asked whether Dr. Hunter had really made out the nature of the specific infection. The only way to do this was by cultivation and he would like to know if this had been done. He had recently suggested that serum-therapy might be employed to stimulate the endothelial cells of the liver and the case brought forward seemed to be an instance of this. He also asked what anti-streptococcic serum had been used? But, he asked, how could anti-streptococcic serum mitigate the toxin of a staphylococcus? In making experiments some time ago he had observed that the toxin of certain specimens of staphylococci produced marked hæmolysis.

Dr. SIDNEY COUPLAND congratulated Dr. Hunter on the value of his researches which had thrown so much light on the disease and which would enable them to change its name. Pernicious anæmia was a hæmolytic process due to a specific poison which operated through the portal circulation. It still remained to isolate the special bacterium.

Dr. T. D. SAVILL, referring to the clinical aspect of pernicious anæmia, thought that slighter instances of the disease or of an allied disorder might prove to be more common than was generally believed. The original conception of pernicious anæmia implied an intense form of anæmia, occurring for the most part in elderly men, and almost necessarily leading to a fatal issue. Among the out-patients at the hospital were a large number who applied for neurasthenic and angio-neurotic symptoms, but who also presented marked gastric symptoms and very bad teeth. The cure of such cases rested largely with the dentist. He (Dr. Savill) had not made precise observations, but their skin was always pale, often "earthy" in colour; and it might be a question whether these were not instances of a toxæmia allied to pernicious anæmia.

Mr. ARTHUR BARKER remarked that these cases had considerable interest from a surgical point of view, and he thought that the blood of certain cases of alveolar abscess might profitably be investigated. The case described by Dr. Hunter he had seen and the intestinal symptoms obscured those referable to the mouth. He did not think that they sufficiently realised how much the state of the mouth could contribute to the production of disease of the intestine and stomach.

Dr. HUNTER, in reply, said that in the case he had referred to of alveolar abscess there was not the faintest suspicion of that lesion during life. He had since seen 10 cases exactly like the typical case of pernicious anæmia he had described. He wished to acknowledge the valuable work which had been done by previous observers in this field, such, for instance, as Addison, Pye-Smith, Sidney Coupland, Byrom Bramwell, and Sir William Broadbent. He (Dr. Hunter) wished to correct the impression, if such existed, that this disease was a gastro-intestinal dyspepsia. The alimentary tract was only the locality where the diseased process took place and it stood to pernicious anæmia just in the same relation as those of intestinal lesions stood to typhoid fever or those of the throat to diphtheria. As to the diagnosis of the disease, it was not to be based upon the blood changes alone but upon the association of these with four definite groups of symptoms—viz., anæmia, hæmolytic changes in the urine, oral and gastro-intestinal symptoms, and fever with other toxæmic symptoms. As to the separation and identification of the organism, the streptococcus was only an associated bacterium and it was not hæmolytic. He had not yet isolated the true specific organism.

MEDICAL SOCIETY OF LONDON.

Cases of Abdominal Injury with Rupture of the Viscera.—Lateral Sinus Pyæmia and Cerebellar Abscess with Cheyne-Stokes Respiration; Recovery.

A MEETING of this society was held on March 25th, Mr. JOHN H. MORGAN, the President, being in the chair.

Mr. THOMAS H. KELLOCK made a communication on three cases of Abdominal Injury with Rupture of the Viscera. In the first case the patient was a man, aged 40 years, who had been run over by an empty hansom cab the wheel of which passed obliquely across the abdomen from right to left. On admission to the hospital half an hour after the accident he was evidently suffering from severe internal hæmorrhage. The abdomen showed no mark of injury though it was tender all over and moved very little with respiration. The area of splenic dulness was thought to be increased downwards and there were a fracture of the ninth and tenth ribs on the right side and synovitis of the left knee. The abdomen was opened in the left linea semilunaris, blood was found in the peritoneal cavity, and the spleen was found to be extensively lacerated. (The specimen was shown.) On attempting to bring it forward free hæmorrhage took place which was controlled by seizing the pedicle and ligaturing it; a small piece of the spleen had been completely torn away and was removed separately. The patient rallied well after the operation, but on the second day symptoms of intestinal obstruction appeared. These did not yield to treatment and death occurred on the fifth day. At the post-mortem examination the ligature on the splenic vessels was found to be firm. There were superficial bruising of many of the viscera and complete obstruction of the small intestine a few inches above the cæcum owing to the bruising of this structure. The second case was one of ruptured kidney. The patient, a man, aged 32 years, had fallen from a height of about 15 feet, striking his left loin against the edge of a plank; on admission to the hospital he showed all the signs of internal hæmorrhage; he said that since the accident he had passed a quantity of blood by the urethra and the urine he passed soon after admission contained a large percentage of bright blood. He complained of pain in the back and abdomen and of a constant desire to defecate; the left side of the abdomen was very rigid and less resonant than normal, there were no external mark of injury and no good evidence of free fluid in the peritoneal cavity. When an anæsthetic had been given a large tumour could be felt in the region of the left kidney. The abdomen was opened in front as it was thought there might be injury to the intestines in addition to rupture of the kidney, but the other organs were found to be uninjured. The right kidney having been examined the abdominal wound was closed and the left kidney exposed from the loin. The lower third of the kidney had been completely torn from the upper two thirds, the rent opening the pelvis. The pedicle was ligatured and both pieces of the organ were removed, the wound being closed round a drainage-tube passed to the bottom of the cavity. The patient made an uneventful recovery. The blood in the urine ceased at once; he passed 47½ ounces of urine in the 24 hours following the operation, an average of 39½ ounces for the next nine days, and 64 ounces per diem for the next 13 days; then it became about normal in quantity. The third case was a woman, 55 years of age, who was knocked down by a hansom cab, one wheel passing across the abdomen just below the ribs. On admission to the hospital she showed very much the same signs of ruptured spleen as were noted in the first case. On opening the abdomen a quantity of blood escaped; the spleen was found to be much lacerated and torn away from its vessels; ligature of these and removal of the organ did not stop the hæmorrhage, and on further examination a rent of the liver, almost severing the left lobe from the right, was found. As the patient's condition was very bad this was rapidly plugged with gauze which seemed to stop the bleeding, but she did not long survive the operation. Attention was called to the fact that both the patients who sustained laceration of the spleen were injured by the wheels of vehicles proceeding at a fairly slow pace and to the fact that all the cases bore out the teaching that injuries to the front of the abdomen were likely to rupture organs loose in the peritoneal cavity, whilst those inflicted from the back injured organs more firmly attached to the parietes. The diagnosis of rupture of the spleen was considered briefly and the question of associated injuries when the diagnosis of rupture of one viscus had been made. In the first case the injury to the intestines was the cause of death. The treatment of injuries of this kind was considered. The only satisfactory way of dealing with hæmorrhage from a ruptured spleen was by removal of the organ and ligature of its vessels. Reasons were given for removing the kidney from the back. It was thought better to remove the whole organ rather than attempt to save the upper part, as the rent had opened the pelvis.—The PRESIDENT remarked that all such cases were most instructive. The methods of dealing with hæmorrhage into the peritoneum were comparatively modern. The reasons advanced by Mr. Kellock in this case for making first one incision in front and then removing the organ from the back carried conviction to his mind, but it was a question of opinion whether that procedure was correct.—Mr. F. C. WALLIS referred to three cases of rupture of the spleen which were not operated on until some time after the injury. They all got well. As regards the case of ruptured kidney he would like to ask why Mr. Kellock elected to operate; it would be instructive to learn what were the guides in such cases when there was no external wound. Again, what were the indications for immediate operation as compared with operation later? The usual course of such cases if left was that the kidney became septic from its propinquity to the colon, and finally the other kidney became infected through the urinary bladder and up the opposite ureter.—Mr. CUTHBERT S. WALLACE remarked that increasing dulness under the left hypochondrium was a valuable sign of ruptured spleen. One of the cases referred to by Mr. Wallis was not operated on for four days. As to the indications for operation it was well to bear in mind the general symptoms and particularly the state of the pulse, which was very important; for instance, if at the end of six hours the pulse was still very rapid. Reference was made to a series of cases collected by Mr. G. H. Makins in the "Annals of Surgery," 1899. These were practically all the cases of ruptured viscera at St. Thomas's Hospital, 1889–98—viz., 292 cases of abdominal injury, which included 88 cases of ruptured viscera. In only 21 (23 per cent.) there was ruptured intestine and in 35 rupture of the kidney.—Mr. KELLOCK, in reply, said that there were two indications for operation in his case of ruptured kidney. First, the amount of blood the patient was losing in the urine; and secondly, the constant desire of the patient to defecate and pain in the abdomen, which made him (Mr. Kellock) suspect injury to the intestine, a condition of even still greater gravity.

Mr. H. F WATERHOUSE made a communication on a case of Lateral Sinus Pyæmia and Cerebellar Abscess with Development of Cheyne-Stokes Breathing with Cessation of Respiration under Anæsthesia; recovery after two operations. The patient was a dental surgeon admitted into Charing-cross Hospital on April 17th, 1899, with lateral sinus pyæmia. He had been for many years a sufferer from chronic tuberculous abscesses in the region of the right hip and had had a purulent discharge from both ears for the greater part of his life. In 1895 Mr. Waterhouse had operated upon him for a large supra-mastoid abscess on the right side and shortly prior to admission Dr. Green of Wimbledon had opened two abscesses of the right hip. On April 11th the patient felt ill; the temperature was 100° F. and the pulse was 100. On April 12th he had a rigor in a train. On April 13th he had a rigor of half-an-hour's duration and a temperature of 103°. On April 15th Mr. A. M. Sheild saw the patient with Dr. Green and diagnosed lateral sinus septic thrombosis but was unable to decide upon which side the condition was. On admission to Charing Cross Hospital the patient's temperature was 104·2°, the pulse was 100, and the heart and lungs were normal. There were no pupillary changes and no optic neuritis. From this time to April 28th the patient had repeated rigors, the highest temperature was 105·2°, and a systolic heart murmur developed after continuous pain over the base of the heart whilst he was in hospital. Cough was noticed a few days later and the sputa was of prune-juice colour. His condition became profoundly toxæmic and apparently hopeless. Much valuable time was of necessity lost in waiting in the hope of determining upon which side the sinus was affected. At last, on April 28th, when it became clear that the time for operative interference with any hope of success was rapidly passing away, Mr. Waterhouse operated upon the left lateral sinus and internal jugular vein, dividing the latter between two ligatures and incising and clearing out the septic thrombus in the former. Recovery took place; nevertheless, on May 1st Dr. J. W. H. Eyre, bacteriologist to the hospital,

found streptococci in the blood. Everything went well until June 7th when the patient was allowed to get out of bed. On June 8th complaint was made of headache, vomiting occurred, and the pulse fell to 56. Drowsiness increased until on the evening of June 10th the patient was comatose and there were double optic neuritis, Cheyne-Stokes respiration, and a pulse of only 50. It was then decided to explore the temporo-sphenoidal lobe and the cerebellar fossa on the left side. Unfortunately, the former was first attempted with negative result. Respiration ceased entirely under even partial anæsthesia. Owing to the patient's condition vigorous artificial respiration had to be resorted to and the movement thus caused some laceration of the cerebral substance by the exploring needle. Soon the pulse ceased to be perceptible, and as the patient was obviously very near death the exploring syringe was made to perforate the tentorium cerebelli from above. Immediately an ounce of fœtid pus was obtained, the respiration and pulse recovering at the same instant. The left cerebellar fossa was now rapidly trephined and several drachms of pus were evacuated. Progress was henceforth most satisfactory, although there was for many days much word-deafness owing to injury to the temporo-sphenoidal convolutions. The patient was at the present time in better health than before his illness and was in full practice as a dental surgeon. Speech was nearly perfect; he could now manage a gas and ether extraction, comprising from 16 to 20 teeth and stumps, and could walk 10 miles in spite of his lameness. Mr. Waterhouse alluded to the extreme difficulty that had existed with regard to the decision as to which lateral sinus was affected and the hesitation he felt in risking operating upon the wrong side. He considered that the endocarditis having developed whilst the patient was under observation, and the presence of streptococci in the blood, proved it to be of pyogenic origin. He regretted that he had not at once, in the second operation, trephined for cerebellar abscess, but gave cogent reasons for acting as he had done. Remarks were also made as to the difficulty in locating intracranial abscesses and another case was related in which Mr. Waterhouse had first explored the cerebellum for an abscess which was situated in the temporo-sphenoidal lobe. This case fortunately also recovered.—The PRESIDENT remarked on the unusual and interesting features of this case which he had had the opportunity of seeing.—Mr. P. L. DANIEL remarked that this case pointed to the advantage of following a bold course even when the localising signs were very insignificant. Slight weakness of the left hand was the only indication in this case. As to whether the abscess was situated in the right cerebral or the left cerebellar lobe there was no real indication. The indications usually present in the jugular vein (pain and tenderness) were absent here. The case was a unique one. Recovery after such intense general toxæmia was very remarkable. The case threw some light on the functions of the cerebellum. It would seem that the hemispheres were quite subsidiary in importance to the vermis. In this patient the latter was the only part remaining.—Dr. G. L. EASTES wished to remark on the bacteriological aspect of the case. There was certainly a double if not a triple infection. In the first place streptococci were found in the blood; secondly, the pus was described as green, which probably indicated the presence of the bacillus pyocyaneus; and, thirdly, the pus was said to be "stinking," which probably indicated the presence of one of the anaerobic organisms.—Mr. WATERHOUSE, in reply, remarked that he quite agreed with Mr. Daniel. The chief difficulties in these cases were undoubtedly the slight localising signs present. He believed that they allowed cases to be lost because they waited for localising signs. He referred to two cases which he had recently seen in illustration. The first case died just before operation. In both cases an abscess on the temporo-sphenoidal lobes was discovered. The case under discussion undoubtedly had no left cerebellar lobe and the temporo-sphenoidal lobe was considerably injured; nevertheless, he was now managing a busy practice and he had no signs whatever of the damage to his cerebrum or cerebellum.

CLINICAL SOCIETY OF LONDON.

The Recent Epidemic of Typhoid Fever among the Troops in South Africa.

A MEETING of this society was held on March 22nd, Sir R. DOUGLAS POWELL, Bart., the President, being in the chair.

Sir WILLIAM BROADBENT, Bart., resumed the adjourned debate on the Recent Epidemic of Typhoid Fever among the Troops in South Africa. He remarked that the number of cases dealt with by Dr. H. H. Tooth was not sufficient to serve for an estimation of the incidence or of the severity of the epidemic, or for the establishment of points in the causation of the disease. This would only be possible when the statistics of the whole campaign could be made up. Statistics, however, required explanation and interpretation for which Dr. Tooth's work would be very valuable; he was a competent observer on the spot and his suggestions would serve for the guidance of others. Dr. Tooth thought that the infection was contracted at the Modder river, which apparently ran at one time in torrents and at another was a collection of stagnant pools, and which at the beginning of the epidemic was a sluggishly flowing stream. The interest of the epidemic, however, centred at Bloemfontein, where many efficient causes were probably in operation—namely, impurity of the local water, the sand, and the flies, together with contamination from person to person—which would not be possible in the well-regulated wards of a civil hospital. The prevalence of typhoid fever in India had also been explained as the result of dust and of flies. The latter should be collected wholesale and sent home for examination as to whether they were the carriers of contagion. In this country enteric fever was always considered to be water-borne, directly or indirectly (e.g., by watercress or oysters). Possibly they might have to revise their ideas as to the means by which the fever might be conveyed here also. With the troops there were antecedent predisposing conditions, such as (1) debility, overwork, and underfeeding; and (2) gastro-intestinal catarrh and derangements of digestion, both very common. With both of these sets of conditions they were familiar in this country and both might render persons susceptible who otherwise were not susceptible to the fever. The conclusion that diarrhœa and dysentery might favour the origin of typhoid fever was, he believed, proved; just as in this country influenza, in his opinion, opened the door to enteric fever in people who would not otherwise have it. Further, not only was the virulence of the enteric bacillus intensified by other toxins, but also through the exudation excreted by the enteric bacilli the mucous surface of the intestine became a nidus for other bacteria, the toxins of which aggravated the symptoms. There was in effect mixed infection, and occasionally the secondary infection was more serious than that of the original bacilli. Other important questions were, Did Europeans originally take the enteric fever to Africa, or did they find it there? Did it arise from local conditions without importation? and What was its incidence on the native races? He knew of no evidence on these points. As regards the type of the disease, Was South African fever exactly the same as ours? Professor Clifford Allbutt had said that there was no such thing as enteric fever; but there were individuals suffering from the invasion of special bacilli; that was so. In this epidemic in Bloemfontein there were individuals living under special conditions of overwork, but happily they had little or no access to alcohol which probably made the epidemic much less serious than it otherwise would have been. Again, there were no sewers or sewer gases in South Africa. The excreta of all kinds were exposed to air and sun, which had a destructive influence on bacilli of all kinds. The outcome of these two conditions should develop some peculiarities in the cases recorded. Had such peculiarities existed? Possibly such might be shown to exist when the cases were examined at the end of the war. In various epidemics in this country there were differences in the virulence of the poison. There were possibly varieties of the bacilli to which differences of immunity after previous attacks or after inoculation might be due. For example, a nurse who had worked through the Maidstone epidemic with impunity had afterwards enteric fever in this country, and subsequently went scathless through the epidemic at Bloemfontein; but later at Pretoria she developed an attack that nearly cost her her life. The immunity after her first illness apparently lasted only a little while. If he were proposing to be inoculated he would prefer to have the toxin prepared from the cases at the place of the epidemic to which he was going. He should consider it more efficient as a safeguard. He would refer only to two points in the symptoms and treatment. First, as to perforation. The indications that perforation had occurred were often not pain or local tenderness, but frequency of respiration and

of pulse. He had been called to cases in which the rapidity of the respiration was supposed to indicate the onset of pulmonary mischief, whereas it was a result of perforation. The respiration, too, was thoracic, not abdominal; in fact, he had never seen true diaphragmatic respiration in a case of perforation except when the patient was under the general influence of opium. In all cases of perforation large doses of opium might mask the abdominal symptoms. Secondly, as to the treatment of hæmorrhage he noticed that the successful issue was sometimes attributed to turpentine and hamamelis; but a morphine suppository was also used, and he believed that the quieting of the peristalsis of the bowel thereby produced was the cause of the success. When blood was poured into the bowel it promoted peristalsis, which again kept up the bleeding. In his judgment the most important point was to quiet the peristalsis by opium used in a suppository or given by the mouth. He had a great sense of the value of Dr. Tooth's paper, which would serve to draw the attention of future observers to many very important points in the disease.

Sir WILLIAM CHURCH, Bart., remarked that the Commission on which he served had been appointed to consider and report on the care and treatment of the sick in South Africa. It was no part of their duty to consider the causes of the epidemic of typhoid fever, and therefore he might not be able to add much that was of interest to the discussion. It had been alleged that the Commission had somewhat hurried the inquiry, but this was not so, though they had lost no time, because the country was anxiously awaiting their verdict. They had certainly worked very hard. Their first meeting took place at 3.30 P.M. on the very day of arrival at the Cape, and for 35 days, not excepting Sundays, they had carried on their investigations. He had asked many people their opinion about the value of inoculation, but the replies were so contradictory that it was impossible to form conclusions. He was personally inclined to think that it gave a certain amount of protection and had a certain modifying power. In a great many of the cases which he met with the inoculation had been only imperfectly performed. Dr. Tooth had stated that the Bloemfontein epidemic arose upon the Modder river. No mention had been made of Paardeberg, but his belief was that the chief source of infection was at Paardeberg. There the British troops had encamped below the Boer camp, and the river was full of dead carcasses. Laboratory experiments had shown that typhoid bacilli would live but a very short time in dry sterile sand; but they would live and retain their virulence in soil for at least 240 days. It was not decided whether the typhoid microbe was a sporulating bacillus or not. If it were the spores might remain potent for evil for an indefinite time. He believed it safe to assume that the bacilli were capable of living some time in dry dust. This enabled them to explain many features of the epidemic which could not be otherwise explained. For instance, it was a common thing to have cases at farms which had had no communication with towns or other possible sources for weeks at a time. He thought that the sand-storms might play an important part in conveying the disease. In the march from Paardeberg to Bloemfontein the clouds of dust must have been immense. He had not the slightest doubt that flies formed one of the readiest means by which typhoid fever was spread. Flies certainly congregated specially round typhoid stools; and on entering a hospital tent it was possible to identify which were typhoid patients by the way the flies congregated round the mouths and beds of those patients. Measures should certainly be adopted to prevent flies from spreading the disease. As regarded the clinical characters of the disease there were different causes which might render the disease more virulent. The type met with among the British troops was more virulent than that generally met with in South Africa. Many of the soldiers kept on duty while suffering from the disease and this helped to contaminate a larger area. The thirst produced by exertion in the hot sun was almost intolerable, and no wonder the soldiers were injudicious. It was often very difficult to obtain fuel for the boiling of water. Turning to the question of preventive measures these must, of course, depend on sanitation. Typhoid fever had always been prevalent in armies since its distinction from typhus fever. The difficulties in South Africa were considerable, especially in obtaining good water. The Modder could often be crossed without wetting the shoes, and with regard to many other rivers it was the same; and the water at this time had a pea-soup character which clogged any and every filter. He did not know why more attempts had not been made to establish Abyssinian wells. Formerly a sanitary officer had been attached to the headquarter staff of each division. This official had been done away with. There was a universal opinion that there ought to be a sanitary officer. Lord Roberts had appointed someone in that capacity at Bloemfontein, Johannesburg, and Pretoria, but this was not quite the same thing. It was extremely desirable that there should always be a medical officer of health at any large standing camp who should work in harmony with the military surgeons and should be also responsible for the space intervening between that and the neighbouring camp.

Brigade-Surgeon-Lieutenant-Colonel ALEXANDER CROMBIE, I.M.S. (retired), gave the statistics of 150 consecutive cases of convalescence from enteric fever which he had seen between September, 1900, and January, 1901, in the persons of British officers, who had contracted the disease in South Africa. Of these officers nine, or 6 per cent., had had a previous attack of enteric fever. In one instance the first attack occurred in May, 1900, in Bloemfontein. The patient came to England to recruit his strength, returned to South Africa in September, and had a second attack in November. After each attack his blood responded strongly to Widal's test. In another instance the patient had enteric fever in India in November, 1899, and a second attack in South Africa in August, 1900. The longest interval between the first and second attacks was three years. Of the 150 officers 13, or 8·7 per cent., had relapses; 38, or 25·3 per cent., suffered from thrombosis of the veins of one or both legs, to a greater or less extent; and 48, or 32 per cent., from bowel irritation during convalescence, sometimes very persistent, and constituting, after thrombosis, the most frequent obstacle to an early return to duty. One officer was still under treatment in a nursing home, 11 months after the attack of enteric fever. In this case Dr. Crombie had satisfied himself that the bowel irritation was due to muco-colitis. In another instance the patient continued to be troubled with similar symptoms 10 months after the attack. The other more frequent sequelæ were cardiac debility, peripheral neuritis, and periostitis. Of these 150 officers, 77, or 51 per cent., had been inoculated once, 6, or 4 per cent., twice, and 58, or 38 6 per cent., had not been inoculated. Except as regards relapses inoculation did not seem to have influenced either the frequency or severity of any of the sequelæ. Of those not inoculated 12 per cent. had relapses, while only 6·5 per cent. of the protected suffered from them. There was no reasonable ground for anticipating that the sequelæ would be modified by inoculation. Dr. Crombie then called attention to the remarkable features which distinguished the recent South African epidemic from all previously recorded ones—namely, the frequency of second attacks, the unprecedented number of cases of thrombosis, and the prevalence of subsequent muco-colitis during convalescence. Besides these features another was the extraordinary profuseness of the rash; in many cases it appeared to have been thickly distributed not only all over the trunk but also over the extremities. These South African cases offered in these respects a marked departure from ordinary epidemics and especially from what he had elsewhere described as "bastard typhoid," a form frequent in India, running a mild course of three weeks' duration without rash, diarrhœa, complications, or sequelæ. The South African cases would seem to indicate either special virulence of the bacillus typhosus, a supposition negatived by the low mortality, or that they arose from a mixed infection. In support of the latter view he quoted the recent experiments of Remy who had shown that when Eberth's bacillus was cultivated in vitro along with the bacillus coli communis their respective characters were intensely modified, the latter losing its power of forming indol and fermenting glucose, while Eberth's bacillus acquired the power of resisting its own antitoxin. This was consonant with the observations of Sanarelli, who had found the virulence of the bacillus typhosus greatly enhanced by the simultaneous injection of the bacillus coli communis into the same animal. Major R. H. Firth's observations were also of interest in this connexion. He found that several cases of "typhoid" fever in India were due to infection by the bacillus enteritidis of Gaertner, while the serum of others reacted to other members of the coli group more closely allied to the bacillus coli communis. The South African epidemic seemed to indicate the necessity for a reconsideration of the whole question, and if it should come to be admitted that the varying clinical picture raised by the word "enteric" was due to a mixed

infection it would be ranged along side of that other clinical picture which was called "phthisis pulmonalis," which was also the result of a mixed infection.

Captain W. A. WARD, R.A.M.C., expressed the conviction that flies played a prominent part in spreading the disease. The 19th Hussars, a regiment to which he was attached, was a seasoned regiment, yet it was the first to develop enteric fever in Ladysmith and suffered very extensively. The men had not been inoculated. The water-supply could not be suspected. In the neighbouring camp was the Liverpool Regiment which was next attacked; and next to this was the Naval Brigade, which was attacked third. On investigation he found that some years ago an enteric fever camp had existed on that spot. The ground was always black with a mass of flies which invaded the food. The clinical type of the disease differed from that met with in England. The advent was very sudden in nearly all the cases, the pain in the head was very acute, and the rash was peculiar. It appeared from the sixth to the eighth day, and was very profuse indeed, though it had no relation to the severity of the attack. A case was quoted in which the temperature suddenly fell when the rash came out. The temperature was often of an intermittent character. As regards preventive measures it could not be realised at home what great difficulties there were to contend with. The disposal of the dead needed reformation, and in his opinion cremation should be adopted. All the places where typhoid fever patients had been superficially buried would form future foci. The subject of inoculation must be approached with great caution. There would be great difficulty in compiling statistics. They would not go far enough or show sufficient particulars, and natural and acquired immunity also had to be considered. Personally he was inclined to believe that cases after inoculation had milder attacks and that the mortality was less.

Dr. A. P HILLIER wished to refer to the question of the multiplicity of infection. It must be remembered that in these tropical countries there was a definitely milder type of the disease, and that there were a number of unclassified fevers in the tropics. Cases of simple continued fever might last from three or four days to three or four weeks. He would like to ask what were the points of distinction between typhoid fever and simple continued fever. In his belief typhoid fever was more usually conveyed by dust than by water. In Kimberley, where he practised for seven years, typhoid fever recurred each year about the same time, in the summer and autumn. The water-supply was above suspicion. The pail system of closets was in vogue. This night service was generally done carelessly, and thus the disease was spread by dust. Filters and boiling of water did not render water innocuous. He could fully support the idea of a sanitary officer attached to each great standing camp. He deplored the death of Captain M. L. Hughes, R.A.M.C. But why was only one bacteriologist appointed? Why not half-a-dozen? Was it not also expedient to consider whether the Army Medical Department might not be supplemented, not only from the rank and file of the profession, but also from among physicians. He thought that it would have been a most desirable thing to have sent out several leading physicians.

Dr. P. HORTON-SMITH remarked that it was abundantly clear from what had been said that the common soldier would not allow his water to be boiled or filtered before drinking. It was important, therefore, to exercise more care in the disinfection of the excreta. This was done during the war with extreme care and most admirably as regards the fæces, but less care was exercised as regards the urine, which from the myriads of bacilli often present in it was the more important. The observations made by himself as to this point had been lately fully confirmed in Professor Koch's laboratory in Berlin and also by Professor Petruchsky of Danzig. This important fact might be fully accepted. How, then, should they guard against the danger involved in the urine? They might add antiseptics to it after it was passed, but this, considering the large quantities to be dealt with, was almost impossible. Far better if they could sterilise it in the bladder before it was passed. Fortunately this could be done by the use of urotropin (hexamethylen tetramin) in doses of 10 grains three times daily. As had been shown by Richardson of Boston and himself and recently confirmed in Professor Koch's laboratory, no person came to harm from such treatment beyond occasionally a little pain on micturition, a condition which could be obviated by omitting the drug for a day or two or by diminishing the doses. He had taken the drug for six weeks in 10-grain doses three times a day with no ill-effects beyond occasional slight dysuria. The urine never became albuminous. There was much danger in the urine in cases of typhoid fever.

Dr. ARTHUR LONGHURST remarked that there were many different types of typhoid fever. The disease in hot climates was more severe and fulminating than in cold and dry climates, which tended to destroy the disease. The typhoid bacillus could apparently remain dormant for a considerable time in the system and then suddenly break out, much in the same way as the malarial microbe did. The disease was more successfully treated in a tent than in a hospital.

Dr. H. H. TOOTH, in reply, thought that it was to be regretted that the post of sanitary officer had been abolished; he believed that there was room for such an official and even for a sanitary corps, and that officer should be vested with considerable authority. As regards inoculation, Professor Wright had said that the dose should be adjusted to the individual. He would like to know how that could be done? He (Dr. Tooth) confirmed the statement that the typhoid fever patients in a ward could be identified by the flies which hovered over and settled upon them. He thought that when once a man contracted typhoid fever he should not be allowed to rejoin the forces during that campaign. As to the nature of simple continued fever—many of these cases were fever of exhauston—some of them were mild cases of a fever *sui generis*, but the larger number of cases were undoubtedly typhoid fever, and gave the Widal reaction. One observer had found that 75 per cent. of cases of simple continued fever gave the Widal reaction. As a disinfectant urotropin did not meet the case of those who were walking about the camp; the patient had to be in bed while under the treatment.

OPHTHALMOLOGICAL SOCIETY.

The Evolution of the Colour-sense.—Peritomy in Episcleritis, Iritis, Herpes Ophthalmicus, and Purulent Ophthalmia.—Membranous Conjunctivitis.—Hypertrophy and Ossification of the Tarsus.—Note on the Surface of the Normal Cornea.

AN ordinary meeting of this society was held on March 14th, Mr. G. ANDERSON CRITCHETT, the President, being in the chair.

Dr. F. W. EDRIDGE-GREEN read a paper on the Evolution of the Colour-sense. He said the facts of colour-blindness threw a good deal of light on the evolution of the colour-sense. Cases of colour-blindness might be divided into two classes, quite separate and distinct from each other, though both might be present in the same person. In the first class there was light as well as colour loss. In the second class the perception of light was the same as in the normal sighted. Many colour-blind persons belonging to this class had a light perception much more acute than was found with most persons having a normal colour perception. Colour-blind individuals belonging to this class could be arranged in a series. At one end of this series were the normal sighted and at the other end the totally colour-blind. Dr. Edridge-Green had classified them in accordance with the number of colours which they saw in the spectrum as pentachromic, tetrachromic, trichromic, dichromic, and monochromic. All the facts which could be gained from the study of museums and literature pointed to the view that the sense of light was developed first and then the sense of colour, those waves which differed from each other most physically being first perceived as different—namely, red and violet. It was obvious that if a certain portion of the visual centre were set apart for the perception of colour, when it was very small and ill-developed it would only be able to perceive differences of considerable magnitude; but as more cells were added to the centre greater and greater power of perceiving differences arose. Each cerebral cell might at first have been connected with many optic nerve-fibres, and the number gradually diminished as evolution proceeded. It need only be assumed that the nerve impulses differed in quality—for instance, in wave length—just as the waves of light differed physically in wave length, and that when a nerve impulse of a certain character acted on a cerebral cell it gave rise to a corresponding sensation of colour within the range of perceiving differences possessed by that cell. It was obvious that if the nerve impulses did not differ in quality one could never have a sensation of colour. The spectrum was therefore first seen as grey, then

with a tinge of red at one end and violet at the other. As the colour sense developed it was not necessary that the rays should be so far apart before a difference was seen, and so the grey band gradually diminished until it entirely disappeared and the two colours met in the centre of the spectrum. A third colour, green, then appeared at the central point. Then yellow appeared, making four colours; then blue, making five; and finally orange, making the normal six. In some persons evolution had proceeded further and seven colours were seen, there being two colours between the green and the violet instead of one. It was found that paintings were first monochromatic, then red and violet were used as colours, then green, then yellow, and then blue. Homer's colour vision was of the degree just preceding total colour blindness. The description by different authors of the rainbow as having one, two, three, four, five, six, or seven colours was very characteristic. These facts showed that colour blindness was only an example of an earlier state in the development of the colour-perceiving centre.—The paper was discussed briefly by the PRESIDENT, Mr. JOHNSON TAYLOR, Dr. E. H. CARTWRIGHT, and Dr. J. H. PARSONS.

Mr. T. PRIDGIN TEALE (Leeds) read a paper on Peritomy in Episcleritis, Iritis, Herpes Ophthalmicus, and Purulent Ophthalmia. Under the name of syndectomy or *tonsure conjunctivale* this operation was introduced by Furnari of Paris for the treatment of panniform and chronic lesions of the cornea and for vascular ulcerations and interlamellar opacities.[1] The first notice in English literature was an article on Syndectomy by Mr. Bader in the Ophthalmic Hospital Reports, vol. iv., p. 109, for 1863, in which the author gave copious extracts from the original papers. Syndectomy was, as its name implies, an excision of a strip of conjunctiva and sub-conjunctival tissue denuding and exposing a ring of sclera round the cornea one-third of an inch in width. It was discovered that this sacrifice of conjunctiva was unnecessary and might at times be an actual disadvantage, so that peritomy came in as a substitute. By peritomy was meant the laying bare of about one quarter of an inch of the sclera immediately around the sclera by scissors and the division of all the vessels in that area which entered or emerged from the sclera without any cutting away of tissue. This separated conjunctiva in some cases reunited so rapidly with the denuded surface and corneal margin that in severe cases it was well to make two, three, or four radial cuts into the free edge of the conjunctiva so as to retard union and secure a more distinct cicatrix as a means of cutting off and constricting the vessels. The late Mr. Hewetson called their attention in Leeds to the remarkable effect of syndectomy or peritomy on the diffuse keratitis of inherited syphilis—an effect Mr. Teale fully endorsed from practical experience, and he wished now to produce evidence of its value in episcleritis, iritis, herpes ophthalmicus, and purulent ophthalmia, and to raise the question of its possible use in rare cases for the relief of tension. In episcleritis, a most painful and intractable affection, the immediate effect of peritomy in the relief of pain and suffering were marked, and in the three cases so treated considerable advance towards recovery in the local condition had taken place in the succeeding two to five months. In iritis of an obstinate character, whether syphilitic or otherwise, similar effects were noted; and in the three cases recorded immediate relief of pain was followed by steady improvement in the local appearance and vision in the course of a fortnight. There were probably few affections of the eye which were more unmanageable and more to be dreaded than the ulceration of the cornea and congestion of the conjunctiva which were associated with herpes. In two cases treated by peritomy the pain rapidly subsided, and in the course of a week or 10 days the healing of the ulcerated cornea and clearing of the inflamed iris were well advanced. In a case of sub-acute purulent ophthalmia originating in congenital infection of several days' duration and presenting marginal ulceration of the cornea and opacity completely obscuring the pupil peritomy was performed, and with such benefit to the eye that the degenerating process was at once arrested and in a week the child was sufficiently recovered to return home. When seen six months later it was difficult to detect which had been the affected eye. As an example of the utility of peritomy in the relief of tension the following case was cited. A woman had lost the right eye from irido-cyclitis accompanied by increased tension which an iridectomy by a skilled ophthalmic surgeon had failed to arrest. Subsequently the eye was excised. She had an insuperable dread of an iridectomy in the other eye which was beginning to suffer in like manner, with the tension + 2, vision reduced to Jaeger 14, and a partially inactive pupil. Peritomy was performed on Sept. 26th, 1900. On Oct. 5th there had been steady improvement: vision Jaeger 8, Tension + ½. On Nov. 26th vision had fallen off. Tension was normal. Later still vision was reduced to perception of large objects. In this case peritomy checked for a time the disorganising process and reduced tension but did not permanently arrest the mischief.—The PRESIDENT referred to a paper and cases by the late Mr. George Critchett who usually removed a strip of conjunctiva about one-sixth of an inch wide down to the sclerotic in cases of pannus and vascular ulcer, without any bad results. He (the President) would now add episcleritis to the list.—Mr. MARCUS GUNN recommended that the conjunctiva should be divided as near the margin of the cornea as possible and then separated from the sclerotic by a few snips of the scissors.—Dr. CARTWRIGHT thought the explanation offered could not apply to episcleritis, scleritis, or high tension. In such cases the treatment was more of the nature of counter-irritation.—Mr. H. SECKER WALKER (Leeds) spoke of the good results obtained in interstitial keratitis. There was no great change produced in iritis and the method was probably of least value in episcleritis. No cicatrix was visible after peritomy.—Dr. JOHN HERN (Darlington) preferred curetting the conjunctival incision down to the sclera; he had obtained excellent results in interstitial keratitis and much benefit in episcleritis. The operation was undeservedly neglected.—Mr. JOHNSON TAYLOR and Mr. J. H. CROPPER also spoke.

Dr. J. F. BULLAR described a case of Membranous Conjunctivitis. The patient was a child who was born on Oct. 28th, 1900, and who was quite well when seen on Nov. 5th. On Nov. 7th the right eye was noticed to be affected and was treated by the nurse until Nov. 11th, when it became much worse, and a medical man was called in. When Dr. Bullar first saw it the lids were very much swollen, a yellowish membrane was present, which stripped off very easily with scarcely any bleeding. Nitrate of silver, two grains to the ounce, was used. The eye got better and the chemosis subsided, leaving a small central ulcer of the cornea. There was difficulty in sucking. Membrane was also noticed on the right side of the nose and fauces which extended. The child died in convulsions on Nov. 20th. There was no diphtheria in the neighbourhood and the membrane was not examined.—Mr. SYDNEY STEPHENSON made it a rule to use antitoxin on first seeing a case without waiting to verify the diagnosis bacteriologically.—The PRESIDENT said that Mr. Tweedy, who had had great experience in these cases, looked upon quinine as being a specific in diphtherial conjunctivitis, and he had himself seen great benefit from its use.—Mr. W. LANG thought that Mr. Tweedy's observations had been made long before antitoxin was known, and he thought it should not go forth as the opinion of the society that this view was still held.—Mr. C. DEVEREUX MARSHALL said he should not think of waiting to conduct a bacteriological examination (though this would not take long), but in a case of supposed diphtherial conjunctivitis he should at once inject antitoxin, which in no case could do harm, and in a true case the sooner it was given the better. With regard to the local application of quinine he strongly approved of it, though he had not seen its use followed by such excellent results as those obtained by Mr. Tweedy.

Two papers by Major H. HERBERT, I.M S., were taken as read. The first was on Hypertrophy and Ossification of the Tarsus. A male Hindu, aged 33 years, had considerable enlargement of both upper tarsi, especially towards the outer ends, without much thickening. On the left side it was fibrous, but on the right there was considerable bone formation, which was fairly dense. A piece of necrosed bone exposed on the conjunctival surface of the lid kept up irritation, for which the patient sought relief.—The other paper was a note on the Surface of the Normal Cornea. Over 30 normal corneæ were examined in Bombay, all of which showed more or less epithelial defect when the surface was partially dried by exposure, the upper lid being elevated from the eyeball, focal illumination and the corneal bi-convex lens being used. In some cases there were only one or two pits seen, in others many closely-set pits, in others grooves added, and in others one or more large depressed patches.

[1] Gazette Medicale, 1862, Nos. 4, 6, 8, 10, 12, and 14.

The depressions were all sharply defined and their floors stippled owing to the irregular surface presented by the deeper epithelial cells. They usually began to appear within half or one minute, sometimes within a few seconds, but were generally not fully shown for two or three minutes. Repeated exposures and the instillation of cocaine sometimes caused an extensive irregular superficial exfoliation of the epithelium, which partly obscured and altered the original picture. The patients examined were all native, mostly adults. Slight conjunctivitis and localised keratitis tended to exaggerate these physiological defects. In superficial punctate keratitis some of the points stained with fluorescine appeared depressed on drying and had to be distinguished from the physiological pits above described, possibly to be seen on the same cornea.

The following cases and card specimens were shown:—

Mr. G. HARTRIDGE: (1) A Capsulotomy Knife; and (2) a case of Central Choroiditis simulating a Neoplasm which had been watched for 14 years.

Mr. H. SECKER WALKER: A Diagrammatic Model to assist in the Teaching of Refraction.

Mr. J. H. TOMLINSON: A New Colour Perimeter.

Dr. J. H. PARSONS: Coloboma of the Optic Nerve.

Dr. G. W. ROLL: Immobility of the Pupils with Fundus Changes.

Dr. P. FLEMMING: Section showing Dilated Nerve Fibres in the Retina.

Mr. R. W. DOYNE: A Simple Form of Ophthalmoscope.

Mr. WORK DODD: A case of High Hypermetropia.

CHELSEA CLINICAL SOCIETY.

Discussion on the Clinical and Pathological Relations of the Chronic Rheumatic and Rheumatoid Affections to Acute Rheumatism.

THE adjourned meeting of this society for their annual Clinical Debate was held on March 19th, at the Jenner Institute of Preventive Medicine, the President, Dr. WILLIAM EWART, being in the chair.

A paper entitled "Some Remarks on the Relationship between Acute Infective Rheumatism and Rheumatoid Arthritis," by Dr. G. A. BANNATYNE of Bath, was read. The communication began by contrasting the ordinary symptoms of a case of acute infective rheumatism with those in a case of rheumatoid arthritis. Once seen the acute forms of these diseases could, he said, never be confused. What was to be said about those rare cases which commenced apparently as moderately acute attacks of infective rheumatism, but which refused to respond to treatment and which as time passed gradually became more and more distinctive of rheumatoid arthritis? How were those cases to be classed which after several attacks of acute infective rheumatism developed rheumatoid disease? Were they mixed infections or did the rheumatoid infection become ingrafted upon the infected rheumatism? Dr. Bannatyne's theory was that those cases were instances of rheumatoid arthritis ingrafted on an attack of acute infective rheumatism. Statistics showed that rheumatoid arthritis frequently followed other diseases, but did not show that it followed acute infective rheumatism with much greater frequency than it did any other joint trouble. The chronic variety of rheumatoid arthritis followed altogether a different course to the acute forms and might well be secondary degenerations following on any acute joint trouble. Dr. A. S. Wohlman and he had found a micro-organism in one form of rheumatoid arthritis, but the micro-organism found by Dr. F. J. Poynton and Dr. A. Paine differed from that one in character and in life-history. Dr. Bannatyne concluded that the two diseases in the acute stages were quite separate and distinct. The hereditary tendency to joint troubles was marked in rheumatoid diseases, but it might be that it was gout and not rheumatism that was inherited.

Dr. R. T. HEWLETT said that in the only case of acute infective rheumatism in which he had examined the fluid he had isolated a bacillus which resembled the Achalme bacillus. He thought that the organism which Dr. F. R. Blaxall had isolated was quite distinct from that found by Dr. Poynton and Dr. Paine. It had to be remembered that identity of clinical symptoms and nearly identical pathological lesions did not necessarily prove identity in etiology. The toxæmias had a great predilection for the joints and arthritis was seen in scarlet fever, influenza, dysentery, yaws, verruga permana, and Malta fever. He agreed with Dr. Bannatyne that the rheumatoid condition was grafted on to the rheumatic one.

Mr. W. ARBUTHNOT LANE said that he found that the term "chronic rheumatic affection" of a joint was used to comprise the conditions of joints in which there was pain of a rheumatic character unaccompanied by any marked change in the anatomy of the joints except, perhaps, some effusion into them. The most marked feature of chronic rheumatic affections of the joints was pain, often variable in amount and influenced greatly by the weather. If this were the case there were innumerable traumatic or mechanical conditions which exhibited precisely those symptoms which he saw usually diagnosed and recognised as chronic rheumatism or, if there were distinct joint changes, as rheumatoid arthritis. The student was taught, and perhaps was still taught, that rheumatoid arthritis or osteo-arthritis denoted a disease of a joint which commenced in the articular cartilage evidenced first by a change in it and later by its removal. But he (Mr. Lane) believed that these cases comprised a large number of conditions or variations in the anatomy of the skeleton produced by traumatism. These conditions had no relation whatever to acute rheumatism, nor were they, as far as he knew, related to any chronic rheumatic affection, while, on the other hand, their causation was most clear and precise, being simply mechanical. He regarded the terms "chronic rheumatic" and "rheumatoid" affections, apart from true rheumatoid arthritis, as unmeaning terms and used too often as useful cloaks for ignorance.

Mr. WILLIAM ARMSTRONG (Buxton) read a paper which dealt more especially with the Etiology of Chronic Rheumatic and Rheumatoid Affections. He could not accept the conclusions of Dr. Poynton and Dr. Paine that micro-organisms were the sole factors in the causation. The man who whenever he got his feet or clothes damp felt stiffness behind the angle of the jaw, followed, if that was not arrested, by tonsillitis and rheumatism, could not be looked upon, in the opinion of Mr. Armstrong, as suffering from the effects of a specific germ. The fact that there was a specific form of acute rheumatism did not justify them in putting all acute rheumatic cases down to the credit of that factor. Dr. Poynton and Dr. Paine did not say whether the cases were acute or chronic in which they had found the diplococcus. He had rarely been able to connect chronic manifestations of rheumatism with the acute form of the disease. It had been suggested by Dr. W. M. Ord that in addition to the toxic factor there was a neural one caused by irritation conveyed to the spinal centres through the agency of the nerves of the prostatic urethra in cases of gonorrhœal rheumatism. He was convinced that one form of rheumatoid arthritis did sometimes follow acute rheumatism, but he had never seen it come on unless the patient had been much debilitated or worried. Although he had gone into the matter most closely he could not confirm Dr. Hawthorne's observation that there was in any considerable number of rheumatoid patients a family history of rheumatism. He did not think that in Mr. N. C. Macnamara's cases the result was due to direct infection of the joints by means of absorption of morbid material. Certain tracts in the spinal cord were greatly influenced by utero-ovarian irritation, and many cases were on record where arthritis lingered on until this source of irritation was eliminated. Mr. Armstrong quoted cases to show that other toxins were capable of causing arthritis. It seemed to him probable that while the more serious joint lesions, such as Charcot's, were really due to organic lesions in the cord the slighter changes causing arthritis were probably only functional. The bacillus discovered by Dr. Bannatyne, Dr. Wohlman, and Dr. Blaxall in rheumatoid joints had not as yet reproduced arthritis on injection, although a somewhat similar micro-organism was alleged to have done so in the hands of German investigators. In conclusion he submitted that it was certainly improbable that all rheumatoid arthritis was due to a bacterial factor; that it seemed likely that the disease was a dystrophy dependent either upon central nerve disturbance or upon reflex irritation transmitted to the joint centres from some other organ; that the irritation was very apt to be directed towards any joint already affected by rheumatism or gout; and that acute rheumatism was occasionally

followed by a form of rheumatoid arthritis, but as far as present knowledge went there was no common origin of acute infective rheumatism and of the more chronic joint conditions which they were discussing.

Dr. ALEXANDER PAINE said that if the symptoms spoken of by Mr. Armstrong were rheumatic in the sense of acute rheumatism it was quite consistent that such symptoms might be due not necessarily to the prevalence of the organism but of its toxins. He could not speak definitely on the toxins because very little was known of the organism; it was not until the toxins had been isolated that it would be possible to give any definite opinion and to say what symptoms were actually due irritatively to the presence of the organism and what was due to the action of the toxins. He reiterated that it was possible that many of the symptoms that came on even before the sore-throat might be ascribed to the absorption of toxins.

Dr. BLANC (Aix-les-Bains) said that some people were of opinion that rheumatoid arthritis arose from special toxins or from particular foods, but it seemed to him that it came from other troubles which they did not know of. At any rate, it was a disease of long standing, and it was difficult to reconcile that with a toxic condition. There was a special kind of chronic rheumatism which had nothing to do with rheumatoid arthritis; it certainly very often might be a consequence of true rheumatic fever, but just as often rheumatic fever was a different disease.

Dr. ARCHIBALD GARROD, in summing up the discussion, briefly passed in review the remarks which had been made by the different speakers in the debate. In his opinion the diplococcus of Dr. Poynton and Dr. Paine actually brought them to the pathological cause of acute rheumatism and it served as a criterion to differentiate acute rheumatism from other affections. Dr. C. O. Hawthorne had taken up a judicial standpoint and had urged that we must not dismiss as worthless the opinion that rheumatoid arthritis was a continuation of rheumatic fever because it did not happen to be the prevalent opinion at the present moment. Though Mr. Arbuthnot Lane had spoken on the question of traumatism he understood that Mr. Lane himself differentiated quite distinctly the more acute forms of multiple rheumatoid arthritis. They were only beginning to learn something about the conditions grouped together under the term "rheumatoid arthritis."

Sir DYCE DUCKWORTH then delivered the closing address of the debate. He said that he must be a bold man who in the first year of the Twentieth Century attempted to find a new niche in nosology for the condition recognised as rheumatoid arthritis. The difficulty of the subject was recognised by all and no less the confusion that still existed respecting the varieties of arthritis which led to deformity. Increasing knowledge and exactness compelled them to recognise that by far the greater number of "pains" met with were not truly rheumatic but owned a different pathogeny. For an accurate conception of the conditions recognised as true rheumatoid or osteo-arthritis it was necessary to state concisely what was known respecting true rheumatism and its influence on the joints, and also what was known of the effects of gouty influences on these structures. The doctrines of the diatheses were commonly believed to be buried in old books and regarded as the mediæval lucubrations of pedantic physicians who groped in the dark days before microscopes and more precise clinical methods were introduced. Such was not his view. He had learnt to satisfy himself of the truth and importance of some of those doctrines and was therefore in accord with the teaching of the French school in respect of a specific diathetic habit of body which was specially vulnerable to such peccant matters as generate rheumatism, gout, and some other ailments, and prone to react specifically in respect of the component structures of the joints. Exostoses were specially significant in gouty arthritis and many truly gouty deformities of joints were by themselves indistinguishable from those induced by rheumatoid arthritis. Occasionally an exact diagnosis was impossible, but in rheumatoid arthritis the occurrence of true ankylosis was not found. His own experience of subcutaneous nodules in rheumatoid arthritis did not enable him to agree with Dr. Hawthorne as to the frequency of their occurrence, but the fact had to be accepted, and it was a connecting link with the so-called true rheumatism. He was strongly disposed to regard the occurrence of nodules even without a history of rheumatic or gouty antecedents as indicative of the so-called arthritic habit of body. In those instances of sequelæ in the joints arising out of cases of acute infective rheumatism the primary disorder failed to pass away and a lingering arthritis remained. In those cases the disorder had alighted on a strumous soil and the blended diathesis was responsible for the result. Many of those cases were regarded as examples of rheumatoid arthritis and the exact diagnosis was not always easy because infective rheumatism might and did sometimes open the way for later developments of rheumatoid arthritis, and, as they had just seen, the same deforming arthritis might eventuate after attacks of true articular gout with no specific rheumatic antecedents. It was difficult to deny the possibility of a blended condition of true infective rheumatism and true gout. The study of rheumatoid arthritis in its clinical features and its morbid anatomy indicated a marked variety of conditions. The specificity or unity of rheumatoid arthritis was held by some observers to be open to grave doubt. Dr. Derwent Parker had declared that all examples of the disease were solely the outcome either of true rheumatism or of true gout. He entertained no doubt that gouty arthritis was capable of inducing most of the changes that were to be witnessed in a well-marked example of rheumatoid arthritis, but the two conditions were not identical: the process leading up to the one was very different from that inducing the other. It was not a common event for true rheumatism to lead to the specific disorder recognised as rheumatoid arthritis, and thus his experience refuted the dogmatic feeling of Dr. Derwent Parker on those points. Some evidence had been afforded by Dr. Bannatyne in support of the contention of the dependence of rheumatoid arthritis proper on a toxæmic invasion and had already led to measures of treatment conceived to be appropriate. He did not think that up to the present time a case had been made out for a constant and specific toxic element, bacillary or otherwise, in the pathogeny of all cases of rheumatoid arthritis, and such specific element, if such there were, was therefore yet to be sought. They had to take note of neuro-arthritic conditions in relation to the pathogeny of rheumatoid arthritis and the occasional association therewith of cardiac disorders. In respect of the term "rheumatoid arthritis" it was unjustifiable to state definitely that there was any unity of pathogeny or to cite any uniform or definite cause when considering all examples of the disease.

EDINBURGH OBSTETRICAL SOCIETY.

Deciduoma Malignum.—Varix.

A MEETING of this society was held on March 13th, Dr. R. MILNE MURRAY, the President, being in the chair.

Dr. ALEXANDER BRUCE and Dr. ELSIE INGLIS communicated a paper on a case of Hydatid Mole with death six months afterwards from Cerebral Hæmorrhage due to Deciduoma Malignum. The patient was at first under the care of Dr. Elsie Inglis, who in January, 1899, removed a hydatid mole; the patient made a good recovery. The menses returned and were normal and the patient appeared to be in good health. Six months afterwards, in June, she showed symptoms of cerebral hæmorrhage and was removed to Dr. Bruce's ward in the infirmary. She died three days after admission. At the post-mortem examination a hæmorrhage was found in the left occipital lobe, small hæmorrhagic nodules were scattered throughout the lungs, and in the uterus two similar nodules were embedded in the muscular tissue. Microscopical sections of all these structures were made and all showed the structure of so-called deciduoma malignum—viz., masses of protoplasm with numerous nuclei and groups of small epithelial-looking cells containing a single nucleus, which in the uterine sections were in connexion with the villi. This was the fourth reported case in which metastasis had occurred in the brain, and it was also interesting because there were no local uterine symptoms, the patient appearing to be in good health until the cerebral hæmorrhage occurred. The paper was illustrated by micro-photographs of sections thrown on the screen by a projection apparatus.

Dr. R. C. BUIST (Dundee) gave notes of a similar case. The patient had suffered from an almost continuous metrorrhagia following a miscarriage at the third month. The uterus was curetted and the anterior wall was found to be thickened; the cavity was quite smooth. The bleeding returned in three weeks and a tumour rapidly formed in

the right iliac region. Three months afterwards the tumour was of the size of a child's head, and was removed by abdominal section together with the uterus which was found to have increased considerably in size. Three weeks after this operation, lung symptoms supervened, with rapid breathing and pain, and friction could be heard on deep inspiration. The patient died from exhaustion about five months after the first operation. At the necropsy many organs were found to be affected, including the lungs, heart, liver, pancreas, and the supra-renal body. The specimens all showed hæmorrhagic nodules. Dr. Buist showed these and also microscopical specimens on the screen; their special feature was an entire absence of multinucleated protoplasmic masses. He considered that these cases of deciduoma malignum were not all of one type.—Dr. F. W. N. HAULTAIN said that Dr. Bruce's case very fully coincided with one which he had himself examined and treated successfully two and a half years ago by vaginal hysterectomy. Lantern slides were shown of the microscopical characters of Dr. Haultain's case, which demonstrated the two varieties of cellular elements (namely, individual cells with a clear cell-substance), the nuclei of which showed reticulation of the chromatin and large multi-nucleated protoplasmic masses, the protoplasm of which was granular in character with the nuclei deeply stained. Commenting on the pathology and histogenesis of these growths he stated that there were three theories: (1) that it was a sarcoma independent of pregnancy but modified by that condition, this being the view almost unanimously upheld in a recent discussion on the subject at the Obstetrical Society of London; (2) that it was a malignant change occurring in the decidual cells and was thus a maternal sarcoma entirely due to pregnancy, this being the original theory propounded by Sänger from which the term "deciduoma malignum" emanated; and (3) that it was the result of active proliferation of the epithelial covering of the chorionic villi, and hence was of the nature of an epithelioma—to this theory the great majority of recent German observers adhered, and Dr. Haultain strongly supported it. The disease was a rare one, occurring only once in about 2000 pregnancies, and yet fully 50 per cent. of all cases of deciduoma followed the expulsion of a hydatid mole. The upholders of the simple sarcoma theory based their views chiefly on the following points: that in some cases no distinct history of previous pregnancy was present, also that the cells tended to travel by the blood-vessels, and that similar structures had been noticed in sarcoma of the testicle. These arguments might be met by the fact that no case had yet been described outside the child-bearing period of life, and though pregnancy could not be proved, yet neither could the reverse be proved. Everything tended to point to an epithelial character, and the term "deciduoma" might be replaced by "chorio-epithelioma," the term "synclytioma" being too exclusive. The evidence of metastases in the lung which were evidently inactive had already been demonstrated by von Franque and others. Metastases had also been noticed in other structures, where after the removal of the original uterine growth a complete cure had resulted.—Dr. D. BERRY HART also made some remarks.—Dr. BRUCE in his reply stated that it was perfectly clear that these tumours were not sarcomatous; they were derived from an epithelial layer, and the term "chorio-epithelioma" was the more accurate designation.

Dr. S. MACVIE gave short notes of a case of Spontaneous Rupture of a Varicose Vein of the Lower Extremity at the seventh month of pregnancy, with expulsion of a dead fœtus 28 days afterwards.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

Doses of Arsenical Preparations.

A MEETING of this section was held on March 8th, Dr. WALTER SMITH being in the chair.

Dr. NINIAN FALKINER read a paper on the Doses of the Arsenium Compounds of the British Pharmacopœia. He said that Dr. R. W. MacKenna, clinical assistant to the Liverpool Skin Hospital, had suggested to him the investigation of the ratio of the doses of the official compounds of arsenium to the percentage amount of arsenium in each compound. The following table summarises his results.

—	Col. 1.	Col. 2.	Col. 3.	Col. 4.	Col. 5.
—	—	—	—	—	1·6 minims Fowler's solution.
As_4O_6... ...	75·77	4·5	0·016	0·016	1·6 ,, De Valangin's ,,
Na_2HAsO_4..	40·03	2·4	0·025	0·030	3·0 ,, Pearson's ,,
$Fe_3(AsO_4)_2 4H_2O$	28·96	1·6	0·062	0·045	—
AsI_3	16·5	1·0	0·052	0·072	7·2 ,, Donovan's ,,

Col. 1.—The percentage of arsenium in each compound.
Col. 2.—The approximate strength in arsenium of equal weights of (*a*) As_4O_6, (*b*) $Na_2H\ AsO_4$, (*c*) $Fe_3(AsO_4)_2 4H_2O$, (*d*) AsI_3.
Col. 3.—The minimum dose of each compound as given in British Pharmacopœia expressed in decimal parts of a grain.
Col. 4.—The minimum dose that should be given of each compound, calculated from the minimum dose of As_4O_6 (as laid down in the British Pharmacopœia of 1898), on the basis of the percentage of As that the compound contains.
Col. 5.—The number of minims of the official liquors that contain each a minimum dose of the compound as calculated in Col. 4.

Two points arose, however, in the consideration of the dosology of the arsenium compounds: (1) the question of solubility and (2) the relation between the chemical constitution of a compound and its pharmacological activity. The first point might arise with reference to the dose of $Fe_3(AsO_4)_2 4H_2O$, but the second point did not appear to have influenced the calculation of the dose of $Na_2H\ AsO_4$, as its dose was less than it ought to be if calculated on its percentage of arsenium; while, according to the view that unsaturated compounds were more physiologically active than saturated, the arsenious compounds should be more active than the arsenic. The table brought out the fact strikingly that weight for weight As_4O_6 was about four and a half times as strong as AsI_3 in the quantity of arsenium that it contained, which might account for the tolerance which had been observed by Mr. MacKenna and other practitioners in the use of Donovan's solution.

Dr. WALTER SMITH observed that there was a great gap in the case of arsenic between its reputed medicinal uses and its known physiological action, as was also the case with respect to mercury. Amongst skin diseases remarkably influenced by arsenic (and he admitted that its use was empirical) he would put at the head of the list pemphigus; then that most distressing complaint, lichen planus; and in the third and last place he would put psoriasis. He directed attention to the curious contrast that there was in their knowledge of the physiological action of inorganic bodies as a group as compared with organic. With regard to chronic arsenical poisoning, he had often given one-thirtieth of a grain of white arsenic per diem, which came to two grains per month, or from 20 to 30 grains in a year, yet he had never produced chronic poisoning after using it for months. Dr. Falkiner had under-estimated the amount when he mentioned one quarter of a grain per gallon as found in beer in England, for up to one grain per gallon had been found.

Sir GEORGE DUFFEY said that Dr. Falkiner's calculation was based solely on the element arsenium, but it was recognised, he thought, by most pharmacologists that arsenious acid and its salts were much more poisonous than arsenic acid and its salts. The element, arsenium, was not to be taken so much into account as the nature of the salt employed.

Dr. CRAIG referred to a case of pernicious anæmia, which he reported some years ago, which was treated by 15-minim doses of Fowler's solution thrice daily. The patient presented himself a couple of months ago suffering from bronchitis, and he had taken large quantities of arsenic during all that time, having got the prescription made up regularly by a druggist.

EPIDEMIOLOGICAL SOCIETY.—A meeting of this society was held on March 15th, Dr. Patrick Manson, the President, being in the chair.—The secretary read a paper on Enteric Fever Mortality in Copenhagen contributed by Dr. Schierbeck, Professor in the Danish University. The writer stated that the records of mortality were available for the purpose so far back as the year 1829, and he gave the

number of deaths presumably from enteric fever for each year down to 1899 numerically and graphically, which showed a steady and progressive decline, beginning about the year 1840. If the oscillations were "smoothed" by the usual process the progressive character of the decline became very evident, proving that some factor had been at work since 1841, but how long previously it was impossible to say, the records for the 10 years preceding being less trustworthy. What this factor, or probably these factors, might be could not be determined. For the last 40 years the enteric fever mortality in Copenhagen had compared favourably with those of most European cities. The first public water-supply was opened in 1860 and the sewerage works were commenced at the same time, when the ordinary method of comparing the mean death-rate of the 20 years preceding—viz., 94 per 100,000—with that of the 20 years following—viz., 41 per 100,000—would appear to show a great reduction; but it must be noted that these events occurred at a time when the mortality was already falling. He would not say that the water-supply and sewerage had no influence, but that it was not so evident as appeared at first sight.—Dr. Christopher Childs then read a paper by Dr. J. T. R. Davison on Soil and Typhoid Fever in which he aimed at showing that the conversion of Buenos Ayres from one of the most unhealthy cities in the world in 1872 to one of the healthiest at the present time was owing not directly to the introduction of a pure water-supply and an excellent system of sewerage, but to the effects produced by these improvements on the condition of the soil. At the former date the soil was riddled with cesspits, the population drank water from shallow wells, rainwater stored in underground tanks, or water taken from the river, and the place was subject to frequent inundations. Now seven-tenths of the population were provided with pure water and their houses were connected with the sewers, though the growth of the city was so rapid that it could not be overtaken by these works, and of the 788,211 inhabitants, 559,830 were within and 228,381 were without the area covered by these sanitary improvements. During the few years between 1872, when registration first became trustworthy, and the commencement of the works the enteric fever mortality had been 0·6 per 1000 and it was latterly but 0·3, yet a comparison year by year of the successive extensions of the water-supply and connexions with the sewers with the varying mortality from typhoid fever did not show any direct relation. He believed that the typhoid bacillus, being aerobic, throve in polluted pervious soils, but could not live in impervious clays, such as those on which the city was built, or in the concentrated sewage in cesspits, and that though it was often water-borne it oftener rose with the movements of the air from the surface soil during variations of atmospheric pressure and the warmth of houses at night. He considered that the chief cause of the reduced mortality was the energetic action of the authorities in the cleaning, ventilation, and general improvement of the huge lodging-houses or tenements known as "conventillos," the prevention of overcrowding, and above all the paving and cleansing of the "patios" or courts around which they were built and which formerly presented an almost incredible surface pollution, together with the abolition of cesspits.—Dr. H. F. Parsons criticised both papers, commenting on the ambiguity of the term "typhus" as used by continental writers.—Mr. Shirley Murphy did not consider Dr. Schierbeck's argument as to the water conclusive, as he had not stated when and to what extent the new supply came into operation. As to Buenos Ayres the effect of the sanitary improvements was not to be expected at once, for the purification of a soil saturated with filth would necessarily be a work of time, and the great improvement in the health of the city after the lapse of 10 years was rightly ascribed to the measures which Dr. Davison considered inoperative.—Dr. Willoughby said that prior to 1860 the population of Copenhagen drew their water from shallow city wells, but in that year a public supply was opened, partly from wells and partly from the Damhus Lake. Since 1890 the supply had been derived wholly from deep chalk wells, occasionally supplemented to some extent from the Sönder Lake. He could not say more on the sewerage than that the sewers begun in 1860 received waste waters and rain only, for as late as 1891 there were very few water-closets. He thought that the apparent reduction in the mortality subsequently to 1845 was probably explicable by the diagnosis of enteric from other fevers, but that the reductions after 1860 and again after 1887 were the results of the substitution first of a fair, and next of an excellent, water-supply for the polluted wells. As to Buenos Ayres, he entirely agreed with the views expressed by Mr. Shirley Murphy.—Dr. Childs indicated a number of points on which further information and explanation were necessary before Dr. Davison's arguments could be even seriously considered and he was quite unable to accept his assumptions with regard to the life-history of pathogenic microbes.—Dr. Newsholme and Major Macpherson, R.A.M.C., also took part in the discussion.

CLINICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on March 19th, Mr. F. A. Southam, the President, being in the chair.—Mr. E. Stanmore Bishop introduced a discussion on Post-partum Hæmorrhage and its Treatment. He drew attention to the present teaching as laid down in the leading text-books on this subject and sketched shortly a case of the kind treated according to accepted ideas and its probable result. Mr. Bishop discussed the theory of causation and showed that all causes were divisible into two categories. He strongly advocated external abdominal aortic compression and gave reasons for the choice of this method.—Dr. E. Vipont Brown said that the description of post-partum hæmorrhage given by Mr. Stanmore Bishop was not imaginative, as Dr. Fothergill had suggested, but a terribly realistic picture of an experience with which many general practitioners were only too familiar. The reason why Dr. Lea and Dr. Fothergill thought these cases so extremely rare was doubtless that there was never time to send for the consultant. Long before the services of a consultant could be obtained the crisis was over for better or for worse. It was known that when physically tired and worn out a strong psychical stimulant would sometimes enable a person to do a great deal more work without apparent fatigue, showing that the exhaustion was nervous rather than muscular. And so he thought the "whipping" (as Mr. Bishop called it) to which the womb was subjected in what had hitherto been the ordinary treatment in cases of post-partum hæmorrhage might act as a strong nerve stimulant and was not always so useless as Mr. Bishop's paper might lead them to suppose. Indeed, it was known from experience that it did sometimes prove effective. His own practice had hitherto always been in severe cases to insert one hand into the womb and to knead with the other hand on the abdominal wall. Imitation, however, was the sincerest form of flattery, and the next time he had to deal with a severe case of this kind he would undoubtedly place the foot of the bed upon the dressing-table and compress the abdominal aorta.—Dr. Leslie Jones said that he had never seen a fatal case of post-partum hæmorrhage. In the fatal case described by Mr. Bishop he thought almost everything that was wrong had been done, and what was right had been done at the wrong time. The uterus was not accustomed to, and did not understand, rough treatment by pounding and squeezing from outside; what it did understand, and would readily respond to, was a stimulus applied to its inside similar to that recently supplied by the fœtus in the expulsion of which its efforts had just been engaged—efforts which it was quite able and willing to resume if suitably reminded and encouraged. He strongly advocated the method which he had for nearly 30 years adopted. The method was this: a full dose of opium having been given—nowadays morphia: subcutaneously—the left hand was introduced into the uterus and the fist closed; then the right hand from without seized the closed fist in the womb, and in doing so must necessarily take in its grasp the uterine wall in its full extent behind as well as above and in front, and this no matter how relaxed and eluding the uterus might be; then the right hand pressed the closed fist and with it the uterus downwards into the pelvis, when hæmorrhage, if there still was any, immediately ceased. The uterus would soon begin to contract and would endeavour to expel the fist which, far from being withdrawn, was slightly pressed upwards against the force applied by the right hand and was only removed when it had been compulsorily expelled. Then was the time for ergot and such external stimulating agencies as ice—cold applied to the cervix or fundus—but the chief thing was to keep the uterus, now firmly contracted, grasped in both hands, and pressed into the pelvic cavity. At the same time that this was being done someone near should raise the pelvis on three or four pillows, and in cases where the hæmorrhage had been extreme and exhaustion alarming a large quantity of salted water should be injected into the bowel. Then,

too, strychnine was most valuable. Compression of the aorta as a means of controlling hæmorrhage was very old and had been deservedly abandoned. Under the circumstances in which it might be considered desirable it was useless and entailed loss of precious time when every moment was of importance. The danger, too, of compressing the vena cava should not be so lightly set aside. If the aorta were effectually compressed under the conditions which must necessarily obtain it would be next to impossible to avoid compressing the cava at the same time. It was superfluous to dwell on the danger of doing so. He had no experience of, and never had necessity to resort to, any of the numerous methods described by Mr. Bishop and which had been adopted in the case that had been depicted, and he referred to a well-nigh fatal case of post-partum hæmorrhage where, had he dallied with attempts to compress an empty aorta, the uterus would never have awakened from the refreshing sleep Mr. Bishop so strongly pleaded for it, nor would the patient. While admiring the ingenuity of Mr. Bishop's theorems and acknowledging the soundness of some of his propositions he had heard nothing that would induce him to abandon a method which through a long series of years had never failed him.—The following gentlemen also took part in the discussion: Dr. A. W. W. Lea, Dr. W E. Fothergill, Mr. R. D. Cran, Mr. S. Bagley, Dr. G. A. Junk, and Mr. J. E. Harburn.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.—A meeting of this society was held on March 14th, Mr. Rutherford Morison, the President, being in the chair.—Dr. H. P. Bennett exhibited in the dark room a case of Concussion Injury of the Eye (a hole in the macula) and expressed the opinion that the hole had been produced by contre-coup.—Dr. J Limont brought forward a case of Generalised Lichen Planus. The patient was a woman, aged 52 years, showing lichen patches upon the forearms and legs and discrete papules over the back and body surface generally, especially over pressure sites, such as waistbands and garters. The duration of the condition had been two months.—Dr. Limont also showed a case of Erythema, the patient being a woman, aged 38 years, who had suffered from various degrees of erythema for 18 months. Her condition began with sore throat, febrile disturbance, and gastro-intestinal symptoms. She now exhibited red patches, papules (the tuberculate form), urticarial weals, in places serous effusion producing vesicles, and in places purpuric patches. He thought the case was due to intestinal disorder and absorption.—Dr. Oliver and the President described a case of Panhysterectomy at the eighth month of pregnancy for Cancer of the Cervix. The patient was 39 years of age and was the mother of nine children. She had suffered from uterine hæmorrhage since the birth of her last child two years previously. For 18 months the hæmorrhage had been increasing in severity. She presented herself pregnant at the eighth month when carcinoma of the cervix was recognised, and the child being viable delivery by the abdomen and total hysterectomy were advocated in preference to the risk of natural labour at full term. Mother and child had both done well and were now shown.—Dr. A. M. Martin brought forward two children the subjects of Unilateral Congenital Dislocation of the Hip. Both labours were normal. The condition had only been recognised when the children commenced to walk. In one patient, aged six years, an open operation by Lorenz's method had been performed. Previous attempts at bloodless reduction had been futile. At the operation the head of the femur was found on the dorsum ilii, the capsule was long, there was no ligamentum teres, there was a good acetabulum, the head of the bone was normal and was easily replaced on strongly abducting and inverting the hip, the wound was sutured, and the limb was kept in the above position with plaster-of-Paris.—Dr. G. R. Murray showed a case of Musical Mitral Systolic Murmur. The patient was a boy who had a strong rheumatic history and exhibited outward displacement of the apex external to which was heard a systolic murmur having a decided musical character. Although heard over the whole præcordium, the point of maximum intensity was as above described and the murmur was therefore considered to be of mitral origin. Dr. Murray remarked upon the rarity of this murmur and stated that musical murmurs were usually aortic in origin and diastolic in time.—Dr. Oliver concurred in this view.—Dr. Beattie, from observation on a long series of musical heart murmurs, expressed his belief that they more frequently resulted from dilatation than from endocarditis, requiring for their production thin membranous cusps but slightly separated, and still capable of trilling upon one another by imperfect contact. They were always regurgitant, never obstructive—more frequently systolic and of tricuspid or mitral origin than diastolic and of aortic origin. By far the most frequent musical murmur was one of tricuspid regurgitation and quite often secondary to mitral stenosis. Their musical character was usually temporary, being abolished by either further dilatation of the orifice or by recovered compensation and restored perfect closure.—Dr. I. G. Modlin brought forward a child, aged nine years, who had been operated upon for Acute Intestinal Obstruction. The child was now perfectly well and on ordinary diet.—Dr. C. H. Bryant brought forward a girl, aged 14 years, who for five months had been the subject of Increasing Double Ptosis which was at first considered to be hysterical; lately, however, external ophthalmoplegia had been added in the distribution of both third nerves and the right sixth nerve, but without any iridoplegia. There were also double facial paresis of both upper and lower divisions. There were no nystagmus, no dysphagia, no vomiting, and no headache; the optic discs were normal.—Dr. R. P. Ranken Lyle read a short paper on Placenta Prævia.—A discussion followed, which was taken part in by Dr. Calthrop, Dr. Murphy, Dr. Stuart, and Dr. Peart.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on March 13th, Dr. Robert Jardine, the President, being in the chair.—The President read notes on two cases of Measles in the Puerperal Woman occurring in the Glasgow Maternity Hospital. The first patient was 30 years of age and a primipara. The puerperium was normal till the seventh day when her temperature rose in the evening to 101° F., and by the eleventh day it was 103° and 104°. Two days later a copious measles rash appeared and the temperature fell to 99°. Until the rash appeared the cause of the febrile disturbance could not be determined, there being no coryza; septic absorption was, however, excluded. The source of infection was traced to the house in which the patient had lodged before admission, the period of incubation being 14 days. She was removed to the Fever Hospital, where she made a good recovery. The after-history of the child was unknown. The other patient was 28 years of age and in her second confinement. The measles rash was first appearing when this patient was admitted to hospital early in the first stage of labour. Her temperature was 99°. Labour lasted nine and a half hours and was normal. Next day the rash of measles was well marked and on the third day the patient was removed to the Fever Hospital and did well. The child was still free from measles two weeks later, although exposed to infection for the first three days. Perhaps the child was rendered immune. He also referred to a case where a child suffering from measles was placed in bed beside a woman who had been delivered on the previous day. The mother escaped although the newly-born infant developed the rash on the eighth day after birth.—Dr. G. Balfour Marshall referred to a case where a newly-born child became feverish on the second day after birth and twenty-four hours later scarlet fever showed itself. The mother nursed the child and remained immune.—The President also read notes on a fatal case of Septicæmia arising from Gonorrhœal Rheumatism. The patient, a woman, aged 31 years, and in the eighth month of her sixth or seventh pregnancy, was suddenly seized with intense pain in her right knee, which was, however, not visibly swollen. The pain continued intense and was only relieved by hypodermic injections of morphia, all local and other remedies failing. Her temperature varied from 99° to 100°. This continued for a week when premature labour set in and was completed under chloroform as movements of the knee-joint were so painful. While under chloroform the knee-joint was punctured by a hypodermic syringe and some sero-pus was withdrawn. Next day the joint was opened and a little pus was withdrawn. This was bacteriologically examined and only staphylococci were found. Gonorrhœal rheumatism was diagnosed and this was confirmed by the infant developing an intense gonorrhœal ophthalmia. On the second day of the puerperium the mother's temperature rose to 104° and her pulse to 140. On the third day she was restless and maniacal. On the fourth day her temperature fell but rose

again, and she died on the sixth day after intense suffering. The right wrist became painful and a septic punctate rash appeared on both wrists on the third day. There was no distension or pain in the abdomen.—Dr. Carstairs Douglas who saw the case was impressed by the virulence of the attack and thought it probably due to a mixed infection. No gonococci were found in the fluid from the knee-joint.—Dr. Jane B. Henderson read an account of a visit to a Hygienic Dairy-farm near Toronto.—Dr. John Edgar read notes on a case of Anus Vulvalis, the opening being just in front of the fourchette of the vulva.—Dr. A. W. Russell described a similar case.—Dr. Russell read notes of a case of Hydrops Amnii with Twins. The uterus contained over 16 pints of liquor amnii.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 14th, Dr. E. Wearne Clarke, the President, being in the chair.—Mr. Richard Favell showed a female patient with a large Pigmented Mole on the left cheek 10 inches in circumference. After an attack of small-pox 13 years ago the mole became scaly and encrusted and now it formed a large, prominent, and unsightly mass occupying nearly the whole of the cheek. Long silky hair was growing from its lower edge.—Mr. Snell introduced a young man from whose vitreous he had removed a piece of steel by the electro-magnet. Two months had elapsed since the accident and at the time of the operation the splinter of steel was surrounded by a mass of effusion.—Mr. E. J. Scorah showed an eye in which a piece of steel was so firmly embedded in the coats of the eye close to the optic disc that it could not be removed by the electro-magnet and enucleation subsequently became necessary.—Mr. H. Clapham showed a fœtus with large Exomphalos.—Dr. Arthur J. Hall showed the following cases: 1. Locomotor Ataxia. 2. Arsenical Alcoholic Neuritis in a young married woman There were marked arsenical pigmentation of the abdomen and incomplete paralysis of the arms and legs. 3. Hydroa Gestationis. 4. Ringworm of the Hand in a child, aged 12 months. There was no infection elsewhere and microscopical examination of the scales showed large spores in chain formation. Infection from animal source was regarded as probable. 5. Severe Gout in a man, aged 35 years, with very large tophi, especially about the hands and elbows. 6. Chronic Rheumatoid Arthritis in a young woman, with considerable deformity.—Dr. Hall also read a paper on the Treatment of Varicose Dermatitis of the Legs. After referring to the pathology of the disease and the necessity of distinguishing it from eczema, he referred to the value of zinc gelatin properly applied in removing the pain and swelling and enabling the patient to get about in comparative comfort. The method adopted was to encase the whole leg up to the knee in a thick coating of zinc gelatin dabbed with cotton-wool to form a feltwork and to renew it every three days. Should an ulcer be present it could be treated with suitable dressings at the same time. The advantages claimed for the zinc gelatin treatment were: (1) cheapness, common gelatin and the cheapest calamine making quite as efficient a material as the more expensive articles and costing only about 8*d*. per pound; (2) facility of application and removal; (3) impossibility of displacement, however much the limb might be used; (4) arrest of pain and irritation often in a few hours, so that the patient could go about on the leg without discomfort; and (5) its value as a protective against any injury or irritant when continued after the inflammation or ulceration had subsided.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—A meeting of this society was held at 20, Hanover-square, W, on March 15th, Dr. Frederic Bagshawe being in the chair.—Mr. Pagan Lowe (Bath), in re-opening the discussion on Anæmia, confined his observations to the two forms of primary anæmia, chlorosis and pernicious anæmia. He considered that they were two distinct diseases which could easily be separated from each other by the aid of the microscope, and that whilst change of air in addition to iron did good in chlorosis, idiopathic anæmia could not be successfully treated without rest in bed, and that the earlier these patients were put to bed and given arsenic the better. He deprecated the daily hot bath for young people and considered that it was one of the causes of chlorosis, whilst Charcot's bath was a principal assistant in his treatment of simple anæmia.—Dr. Haig referred to the intimate relation existing between anæmia and the quantity of uric acid in the blood and urine. He looked upon anæmia as an almost universal disease in eaters of flesh and drinkers of tea. All the drugs that cured anæmia were drugs that cleared the blood and urine of excess of uric acid. He advised a diet free from uric acid as a preventive of all forms of anæmia.—Dr. Arthur Waddell said that the disease was essentially hereditary.—Dr. E. Kingscote discussed the question whether the chlorotic heart was large or small.—Dr. Fortescue Fox said that numerous cases of secondary anæmias were notably benefited at spas or baths of various kinds. He considered that the anæmia of rheumatism was sometimes increased by a course of sulphur waters and must be carefully handled. That of commencing kidney disease was helped by chalybeate springs, especially when taken artificially heated. The anæmia of old age (a part of failing nutrition) was relieved by warm, but not hot, baths. Hot baths were injurious in all forms of anæmia.—Dr. Bezly Thorne said that in the course of a long experience he had never met with a case either of chlorosis or of the more persistent form of anæmia in which a sallow complexion was partly veiled by the high colour produced by degenerate vessels, in which the urine had not been scanty and loaded either with uric acid or urates, while at the same time the motions showed a greater or less deficiency of biliary colouring. He attributed the superlative benefit derived from the Schott-Nauheim methods in anæmia very largely to the free diuresis which that treatment almost invariably rapidly induced.—Dr. E. Solly (Harrogate), Dr. W. Bain (Harrogate), and Dr. StClair Thomson also took part in the discussion.

MIDLAND MEDICAL SOCIETY.—A meeting of this society was held on March 13th at the Birmingham Medical Institute, the President, Mr. Jordan Lloyd, being in the chair.—Dr. Short showed a case of Motor Aphasia with Retention of Writing Power. The patient was a woman, aged 37 years, who had had right hemiplegia two days after confinement six years ago, probably from blocking of the first and second branches of the middle meningeal artery by a clot. There were signs of old mitral stenosis present. She could say "yes" and "no" in an interjectional manner, but not spontaneously. Considering the loss of power in the right hand still present she could write fairly well, make figures, add up correctly, write from dictation, or copy (either print or manuscript), and could also read well. Although unable to say a single word at command she talked in her sleep and occasionally sang a few lines of songs she had known many years ago.—Dr. Short also showed a case of Amyotrophic Lateral Sclerosis occurring in a man, aged 35 years. The disease was of seven months' duration, and was of the type in which the atrophy was in advance of the spastic symptoms. There was marked wasting of the deltoids and the extensors of the hands and wrists with excessive deep reflexes in both arms and legs. Up to the present there had been no sign of mischief above the cervical enlargement, the speech, deglutition, and mental condition all being normal with absence also of jaw-clonus.—Mr. J. T. J. Morrison showed a specimen of Pyelo-nephrosis with Double Ureter.—Dr. Douglas Stanley read a paper on Alterations of Sensation in Lesions of the Brain.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of the Pathological and Microscopical Section of this society was held on March 21st, Dr. J. Hill Abram being in the chair.—Dr. Smart showed a specimen of Aortic Aneurysm; also Renal Calculi.—Dr. J. Wiglesworth showed a specimen of Cystic Degeneration of the Kidney with a blind ureter in the form of a nipple-like process.—Dr. Peet showed a specimen of Colloid Cancer of the Right Lung from a woman, aged 54 years. It weighed 4 lb. 13 oz. and appeared to have spread from the pleura to the lung. The left lung was free from new growth and weighed 14 oz. The peritoneum was studded with small growths of a similar nature.—Dr. Peet also showed a specimen of Abscess of the Pancreas complicating Bright's Disease from a girl, aged 14 years.—Dr. Peet also showed a specimen of Tuberculous Tumour of the Brain secondary to pulmonary tuberculosis in a child, aged 11 years.—Dr. Frank H. Barendt showed a microscopic section of Lupus Non-exedens removed by operation from the submaxillary region of a child, aged six years.—Dr. Karl Grossmann exhibited sections of a case of Cystic Degeneration of the Retina.—Dr. Alexander exhibited a specimen of an Enlarged Prostate with Chronic Cystitis of the bladder.—Dr. Keith Monsarrat showed a Sub periosteal Sarcoma of the Lower Jaw.—Mr. Hugh E. Jones demonstrated the Surgical

Anatomy of the Temporal Bone by means of sections and dissections of the bone, illustrated by lantern slides. The specimens shown were unique and most valuable as guides in operative surgery.—The demonstration was followed by a discussion in which Mr. F. T. Paul, Mr. C. G Lee, and Dr. W. B. Warrington took part.—Mr. E. R. Bickersteth read the clinical notes on a case of Tetanus with Facial Paralysis.—Dr. Warrington and Dr. Griffith read a note on the Morbid Changes in the Nervous System in the above case and ordinary tetanus.—Dr. Monsarrat read a note on a Congenital Renal Growth.

ÆSCULAPIAN SOCIETY OF LONDON.—A meeting of this society was held on March 22nd, Mr. W. C. Worley, the President, being in the chair.—Mr. W. Campbell M'Donnell showed a child with a very Defective Auricle and an Incomplete Auditory Canal.—Mr. F. Hewitt Oliver showed a specimen of Ruptured Tubo-ovarian Pregnancy of about three months from a multipara, aged 31 years. The patient died eight hours from the onset of violent abdominal pain.—Dr. B. G. Morison read a paper on the Rational Treatment of Dyspepsia. He classified dyspepsia as (1) the atonic, anæmic, or neurotic; (2) the catarrhal and acid forms; (3) that due to organic stomach changes; and (4) related to diseases of other viscera than the stomach. For the treatment, if vomiting was present, a very small quantity of milk-and-water, alternating with beef-jelly, should be given half-hourly by the mouth and a mixture of bismuth and peppermint, while if the vomiting then continued a hypodermic injection of morphine should be administered. He advised rhubarb and belladonna or the compound pill of asafetida when constipation was associated with dyspepsia. Gastric irrigation with permanganate solution or saline solution in gastric dilatation was advised.

SOUTHPORT MEDICAL SOCIETY.—A meeting of this society was held on March 13th, Dr. R. Harris, the President, being in the chair.—Mr. R. J. Hamilton (Liverpool) showed: (1) A case of Subacute Glaucoma with some Unusual Features (there was, however, marked restriction of the field of vision on the inner side); and (2) a case of Gonorrheal Iritis where the patient had suffered very little pain in the eyeball; no simultaneous joint affection was present.—Dr. C. Pinkerton read a note on the Presence of Kreatinin in Urine. In large quantities this substance gave the Fehling test for sugar and might lead to errors in diagnosis.—Dr. H. Smurthwaite read a few remarks on a case of Shock from Electric Current of High Potentiality.—Dr. D. M. Hutton read a paper on Diseases and Injuries due to Insects and described the lesions caused by the presence of the larvæ of diptera (myiasis) both in the alimentary canal and in the skin and mucous membranes.

Reviews and Notices of Books.

Disciples of Æsculapius. By Sir BENJAMIN WARD RICHARDSON, M.D., F.R.S. With a Life of the author by his daughter, Mrs. GEORGE MARTIN. In two volumes. London: Hutchinson and Co. 1900. Price 36*s*.

THESE two large volumes, which comprise 827 pages, contain some excellent writing and some interesting sketches. The first 12 pages are devoted to an outline of the story of Sir Benjamin Ward Richardson's own life, the rest of the volume comprising 25 monographs—Harvey after Death; John Keats; William Gilbert, the First Electrician; Thomas Wakley; Benjamin Rush, the American Sydenham; Vesalius and the Birth of Anatomy; Hermann Boerhaave and the Origin of Scientific Medicine; Antony van Leeuwenhoek and the Origin of Histology; William Cheselden; Antonio Scarpa and Surgical Anatomy; Richard Wiseman and the Surgery of the Commonwealth; Ambrose Paré and the Birth of French Surgery; John Mayow; John Arbuthnott; John Snow; John Brown and the Brunonian System; Richard Mead; John Baptist Morgagni and the Birth of Pathology; René Laennec; William Hunter; Joseph Priestley and the Discovery of Oxygen; John Friend, the Medical Historian; Edward Jenner; and Sir Francis Bacon as a Master of Physic. The chapter on Harvey after Death tells us of his first burial in the vault of the Harvey Chapel at Hempstead, where the remains rested some 226 years, until that day when eight Fellows of the Royal College of Physicians of London carried the leaden case containing the remains out of the vault and placed it in a sarcophagus of Sicilian marble in the Harvey Chapel—the works of Harvey and a scroll with other records being laid upon the leaden case by the hands of Sir William Jenner. In writing of Keats Sir Benjamin Ward Richardson enjoyed the advantage of having among his friends Henry Stephens, who had shared rooms with John Keats in their student days. He is thus speaking with some authority when he writes: "It has been said that Keats, although educated for our own profession of medicine, had no talent for it. In that vulgar acceptance of the term, which converts talent into success as tested by the money-getting standard, the height and splendour of the idol of the market-place, that may be true. It requires an immense amount of inborn stupidity, and withering of heart, and lowering of soul, and worship of dumb ugliness to secure success in the money market of a profession which in its purity is too exalted for wealth either to nourish or debase. But if Keats had once tasted the true spirit of medicine he would, I believe, have become one of her greatest sons—an addition, perchance, to the some eight or ten of the men of all time whom medicine claims as her own."

The memoir of Dr. William Gilbert, author of "De Magnete," which was published in 1600 and which may be called the basis of all electrical science, shows Sir Benjamin Ward Richardson as a discriminating antiquarian, for Gilbert's claims have been very generally neglected until quite recently. The bibliographical sketch of Thomas Wakley is the sympathetic appreciation of a personal friend. The picture of Ambrose Paré, Councillor of State and surgeon-in-chief to Henry III. of France, draws a personality full of fascination; as is also that of the neglected genius, Dr. John Mayow, who in the latter half of the seventeenth century discovered the real function of the lungs and foreshadowed the discovery of oxygen in his "nitro-aerial spirit" which he described as "carried round the body with the blood to keep up the animal fire." John Arbuthnott, the "medical scholar," of whom Pope wrote in 1734: "You are fitter to live or to die than any man I know," forms another interesting subject. The friend of Chesterfield, the centre of a coterie which included Garth, Friend, Swift, and Pope, is described by Sir Benjamin Ward Richardson as a "man who during a long life spent in the exhibition of mental traits as varied as they were powerful, while tossing in the whirlpool of political debate, while classic-serving, antiquarianising, science-seeking, satire-writing, wit-making, and fun-distributing, managed, by hook or by crook, to write prescriptions, the physic of which the people and even royalty swallowed, with all good breeding, and with infinitely more faith in its efficacy than ever satisfied the conscience of the renowned prescriber."

Passing by the lives of Mead, Queen Anne's great physician; of Snow, so well known in connexion with work upon chloroform; and of Brown, the author of the Brunonian theory, we come to the stories of the lives of the brothers William and John Hunter. The biographer certainly has done good service by bringing into prominence the work of the elder of these wonderful brethren. He concludes his monograph on the elder with these words: "The brothers Hunter were twins in science, and William was the first-born." Sir B. W. Richardson shows to us the real John Hunter in his work-a-day form, the superior general practitioner of our art, who, not disdaining midwifery,

brought the poet Byron into the world; Hunter, the man of poor preliminary education, but endowed with an extraordinary fertility of mind and power of observation, the patient investigator who flames in the physiological and natural history departments of knowledge as an inextinguishable light. Some 20 pages are devoted to the life of Joseph Priestley, the discoverer of oxygen—a discovery which as we have previously noted had been anticipated by John Mayow—to a description of the unhappy days when the question about the Test Act was being agitated in and out of Parliament in the last decade of the eighteenth century, and to the persecution to which this gentle man of genius continued to be subjected. The article on Dr. John Friend, the medical historian who was committed to the Tower in 1722–23 as physician to the Bishop of Rochester at the time when the so-called Atterbury plot was submitted to scrutiny, is an able one. Friend was not a great and original genius, but in him the world had a good example of the medical scholar of the historical school of thought. Dr. Edward Jenner is described as "a fortunate Æsculapian," inasmuch as he won admiration as a universal benefactor of mankind during his lifetime. The last biography in the first volume is of Francis Bacon, Viscount St. Albans, in all of whose studies physic played a part, who was by nature a physician, and whose death was hastened by the performance of a physiological experiment which exposed him to danger. Bacon's views as to the future of physic are summed up in "The New Atlantis," and Sir Benjamin Ward Richardson gives an interesting sketch of the great Chancellor and wise philosopher, classifying his labours in medical science and art under the headings, "preventive and curative."

The second volume contains 20 memoirs, including that of John Hunter, of which mention has already been made, viz.:—Alexander Munro, professor of anatomy, and the Origin of the Edinburgh Medical School; William Cullen, physiologist, chemist, practitioner, and scholar, and the Growth of Physical Medicine; Joseph Black and the School of Chemical Medicine; Benjamin Bell and Systematic Surgery; John Hunter, William Hewson, Matthew Baillie, John Moore and Mooriana, Thomas Willis, Sir Kenelme Digby; Sir Thomas Browne and the Religio Medici; Thomas Sydenham and Hippocratic Physic; Erasmus Darwin, John Locke, Robert Boyle, Marcellus Malpighi, John Howard, William Alexander Greenhill, John Abernethy and Thomas Young. Two portraits accompany the memoir of Cullen, one showing him in middle life and the second in old age, with shoulders high, face lengthened, and lower lip partly paralysed and fallen. He will specially be remembered as the President of the Royal College of Physicians of Edinburgh who published a memorial on the custom of conferring the University degrees in medicine on persons who had not received a proper medical education. This volume contains biographies of three men who, though not regular members of the medical profession, yet did more than dabble in things medical—Sir Kenelme Digby, the Honourable Robert Boyle, and John Howard. All the three monographs are pleasant reading. Sir Kenelme Digby was a mystic, but made some additions to philosophical medicine which possess influence even to the present day. The work that has made him best known to the medical world is his "Discovery upon the Cure by Sympathy." Robert Boyle was so fond of medical art and, indeed, of medical research that he may fairly be reckoned as a medical philosopher. He published in the Proceedings of the Royal Society the first clinical observations of chylous blood ever recorded and a clear account of the early practice of transfusion, and wrote freely about physic without incurring the wrath of the Royal College of Physicians of London. The work of John Howard in the prisons of Europe in connexion with the construction of hospitals and the causation of gaol fever is told excellently. Concerning this great philanthropist Sir Benjamin Ward Richardson writes: "I listen back to the most eloquent of voices of his own time, to words such as none but Edmund Burke could utter." It is well that the echo of these words should sound their note afresh in the hearts of men of our time. Of the author of the "Religio Medici," the "physician of religion," whose work is so well known to us through the splendid edition of the late Dr. W. A. Greenhill of Hastings, a full account is given with an analysis of Sir Benjamin Ward Richardson's impressions of Sir Thomas Browne's *magnum opus*. In his epitome of Thomas Sydenham's life the biographer says: "I should not, for my part, call Sydenham the inventor of any new system in medicine. He merely, in the midst of much controversy held the old ground, stood by the father and fathers of physics—a medical puritan in scientific as well as political faith"; while of Erasmus Darwin he writes, he "was the most astounding medical light of the eighteenth century and will probably live longer than any Æsculapian of that century." The pages devoted to the life of Dr. Joseph Black will be read with pleasure by all chemists. In the community of Edinburgh he was much loved, attracting to his lecture-rooms dilettanti as well as serious students. His research work on heat, on the cause of fluidity, on latent heat, evaporation, and chemical attraction still prove a valuable source of reference. A careful review of the life and work of Dr. Matthew Baillie is followed by a life of the father of the hero of Corunna, Dr. John Moore, who, the biographer states, was of most distinguished mark in the professional circles of his day. He is known to modern medicine as the describer of the phenomenon of the "aura" in epilepsy and as the historian of the French revolution. He considered Marat one of the vilest and cruellest medical lunatics medicine ever had in her ranks and described him as a ferocious monster.

An interesting article attributes a high position in medicine to Dr. Thomas Willis of anatomical fame. And undoubtedly his work in the seventeenth century, by giving the most exact account which had then appeared of the nervous system, justifies our regarding him as a founder of a school of scientific medicine—a school the aim of which is to find out the causes of disease, and which looks on pathological conditions as aberrations of physiological conditions. The story of John Abernethy is sketched chiefly from Pettigrew's biography, but Sir Benjamin Ward Richardson was intimate with men who knew Abernethy, while patients who had been under Abernethy's care in early days recounted to him anecdotes in respect of the outspoken surgeon with a good many stories of his eccentricities. The pages devoted to Abernethy's personal characteristics are excellent reading. In the medical firmament Abernethy was not perhaps a star of the first magnitude, he shone chiefly with the reflected glory of John Hunter. His students, however, looked on him with the utmost pride—he was both an industrious and a friendly teacher. For them he founded, at St. Bartholomew's Hospital, the Medical and Philosophical Society which immediately after his death was changed to bear, as long as the school shall last, the name of the founder.

As will be gathered from our running commentary upon these volumes, we have found them thoroughly entertaining reading. Such praise of bygone heroes is stimulating to those who follow and Sir Benjamin Ward Richardson has honoured his predecessors in admirable taste, bringing to the task the eloquence and discrimination of a learned and scholarly man. Many woodcuts add an additional charm to the volumes.

A Treatise on Mental Diseases. By HENRY J. BERKLEY, M D.. Clinical Professor of Psychiatry, the Johns Hopkins University. With Frontispiece, six Plates, and 57 Illustrations in the Text. London: Henry Kimpton. 1901. Royal 8vo. Pp. 601. Price 21*s.* net.

THE present work is based upon lectures delivered by Dr. Berkley at the Johns Hopkins University in 1899, and attempts to embody in a comprehensive form all the principal forms of mental diseases. It is divided into three parts.

Part I. deals with the anatomy and histology of the cerebrum and occupies about 50 pages. The account given is concise, clear, and adequately illustrated. The author's standpoint may be judged by his statement that "in mental affections we have invariably to do with a pathological condition in the brain, either in the cells, in the other component tissues, or in both."

Part II. discusses the general pathology of mental disorders on the basis of a rough division into the so-called functional maladies and organic degenerative maladies. The principal kinds of pathological change affecting cerebral nerve-cells and blood-vessels are briefly touched upon, and then the author deals with the main portion of the work—viz., the clinical section. This occupies the third part and fills four-fifths of the book. The classification of mental diseases adopted is based upon that of Krafft-Ebing, with some modifications rendered necessary by recent work. After general observations on etiology, symptomatology, and treatment, the various types of insanity are considered *seriatim*. Those which are described include melancholia, mania, stupor, chronic secondary insanity, general paralysis, senile insanity, alcoholic and other toxic insanities, insanity from bacterial infection (puerperal and febrile insanities), paranoia and periodic insanities, epileptic insanity, idiocy, imbecility, and the psychoses of childhood. The account of the toxic insanities arising from alcohol, opium, and cocaine may be singled out for commendation as clear and full in description. The author supports the view that general paralysis is nearly always due to syphilis. The remarks on paranoia are full and to the point. Dr. Berkley's work will, we think, fulfil the useful purposes of a compendium for practitioners and students of mental disease. Each chapter concludes with a useful bibliography. We note that no reference is made to dementia præcox, a malady to which much attention has been paid in Europe. The chapter devoted to the insanity of the degenerate suffers inevitably by comparison with French and German treatises which still constitute the high-water mark of science in this direction. There is scarcely need to refer to the author's plea in the preface that the work was written "because of the absence from English medical literature of a comprehensive practical work." Instinctively the names of Spitzka and Kellog in America, and of Clouston, MacPherson, and Bevan Lewis in Great Britain rise in our mind.

Transactions of the American Ophthalmological Society's Thirty-sixth Annual Meeting, Washington, D. C., 1900. Vol. IX. Hartford, Conn., U.S.A.: published by the Society. Pp. 200.

THIS volume contains numerous interesting articles and the records of various rare or exceptional cases that have occurred in the practice of the members of this thriving society which numbers nearly 150 members and includes the names of nearly all the best ophthalmologists in the United States. The meeting was attended by 73 members. Two papers were read on the Operative Treatment of Entropion, one by Dr. Arthur E. Ewing of St. Louis, Mo., and a second by Dr. John E. Weeks of New York City. The details are too complicated to be understood by a brief extract. Dr. Charles Stedman Bull records three cases of Vascular Tumour of the Orbit. In one of these cases electrolysis was frequently applied without much benefit except slight consolidation of the tumour. It was determined to excise it. Ether was administered and Dr. Bull was just about to commence the requisite incisions when the tumour suddenly increased greatly in size, attaining the magnitude of an orange. The condition was so alarming that the operation was deferred. At the expiration of a year another attempt was made and on this occasion with success. It proved to be a case of caverno-angioma. In a second case of pulsating tumour of the orbit the common carotid artery was tied with success. The third case underwent spontaneous cure. Dr. Charles Oliver of Philadelphia, Penn., gives the details of a remarkably successful case in which a retrobulbar sarcoma was removed with preservation of normal vision. Dr. George Harlan of Philadelphia, Penn.; Dr. Robert Sattler of Cincinnati, Ohio; Dr. Arthur Ewing of St. Louis, Mo.; Dr. Greenfield Sluder of St. Louis, Mo.; and Dr. S. D. Risley of Philadelphia, Penn., each read papers in which the parts adjoining the orbits, as the frontal sinus, the nares, and the nasal accessory sinuses, were considered in their relation to ophthalmic symptoms and disease. Dr. G. Sluder supplies several instructive photographs. Dr. Herman Knapp of New York City describes a case of Primary (traumatic) Non-infective Thrombosis of the Cavernous Sinus. The injury was from a blow on the eye with the end of a billiard-cue. The symptoms—œdema of the left lids and conjunctiva, exophthalmos, impairment of function of the third, fourth, fifth, and sixth pairs of nerves, venous engorgement, and œdema of the retina with neuro-retinitis—led Dr. Knapp to diagnose thrombosis of the left cavernous sinus. He forthwith applied to Dr. Frank Hartley, one of the surgeons of the New York Hospital, and inquired whether he was willing to clear out the left cavernous sinus (which was supposed to be obliterated by a new infective thrombus) and to prevent the thrombus from extending to the other cavernous sinus by ligating or compressing with a tampon the circular sinus. Dr. Hartley seemed startled at first, as well he might be, but eventually he undertook to operate. The steps of this formidable operation are given in detail. They seem to have been carefully thought out and skilfully performed. The patient lived for 10 weeks and died from extension of the disease. Dr. Lucien Howe of Buffalo, N.Y., contributes a valuable article on Relative Accommodation and Convergence, and describes and depicts an ingenious instrument, which he has devised for the purpose of determining these points, which he has named an "opto-dynamometer." Other articles of interest are by Dr. C. A. Veasey of Philadelphia, Penn., on a case of Excision of Lacrymal Sac and Gland followed by a form of Neuroparalytic Keratitis, and Dr. Harry Friedenwald of Baltimore, Md., on the Treatment of Dendritic Keratitis. This volume of the Transactions contains a memoir and portrait of Dr. Edward L. Holmes, a distinguished American ophthalmic surgeon.

LIBRARY TABLE.

Perfect Health: How to Get It and How to Keep It; by One Who Has It. By CHARLES C. HASKELL, Norwich, Conn. London: Fowler and Co. 1901. Pp. 209. Price 2*s.* 6*d.*—This book is apparently an elaborate puff of another book—namely, "The True Science of Living," by Dr. Dewey. We noticed two of Dr. Dewey's books in THE LANCET of Feb. 2nd, p. 334. Mr. Haskell tried Dr. Dewey's plan and found himself much better. We are perfectly willing to allow that if a man does not want his breakfast he should not eat it, but that eating no breakfast is the cure for every ill we do not believe. The stories of fasts lasting for 50 days must be taken with a very large grain of salt. The testimonials from all sorts and conditions of men

are wonderful reading, especially that from the "Returned Missionary from Persia," who vomited bile "in a pasty form and a harder crusty form in bits and pieces."

The Prolongation of Life. By R. E. DUDGEON, M.D. London: Chatto and Windus. 1900. Pp. 166 and Index. Price 3*s* 6*d*.—This little book, although written by a medical man, is not a medical work strictly speaking, for it treats of health and not of disease. Its eight chapters deal with the subjects of exercise, clothing, bathing, food, drink, tobacco, eyes, and beards, and Dr. Dudgeon's object is, as his prologue tells us, to give people directions for spending a comfortable old age. In this we think he has succeeded, although his remarks apply only to the healthy. His advice on eating and drinking is excellent on the whole, though we feel inclined to differ from him when he says (p. 101) that it is better to eat alone because thus we shall not be tempted to over-eat. This is true, but, on the other hand, eating alone conduces to eating too fast, and the very loneliness seems in many cases to predispose to dyspepsia. Dr. Dudgeon has an objection to woollen fabrics worn next the skin. We do not think that this objection applies universally. Some persons are more comfortable with woollen underclothing and find it suits them. Such persons should, we think, continue to wear woollen. But taken as a whole the book is worth careful study by those to whom it is addressed.

Traité de Chirurgie d'Urgence. Par FÉLIX LÉJARS, Professeur Agrégé à la Faculté de Médecine de Paris, Chirurgien de l'Hôpital Tenon, Membre de la Société de Chirurgie. (*A Treatise on the Surgery of Emergencies.* By FÉLIX LÉJARS, Professor *agrégé* at the Paris Faculty of Medicine, Surgeon to the Tenon Hospital, and Member of the Society of Surgery.) Second edition, revised and enlarged, with 617 Illustrations, of which 249 are drawn from nature by Dr. E. DALEINE, and 150 Original Photographs. Paris: Masson and Co. 1900. Pp. 912. Price 25 francs.—The surgery of emergencies is in one respect the most important branch of the subject. It is at least that portion of surgery with which those who practise their art should be most familiar, for what has to be done must be done at once and time spent in looking up authorities may, and often will, be time that might have served to save a life lost by this delay. It is therefore very important that students should be always especially examined in their knowledge of this department of surgery and failure to satisfy the examiners in it should be considered as much more serious than lack of knowledge in those branches in which immediate action is of less moment. It is evident that it must be very convenient to those engaged in practice to have in one volume a full account of the surgery of emergencies, and we may say at once that Professor Léjars's work fully comes up to our ideal of what such a book should be. It is obvious that very different opinions might be held as to the subjects which would naturally be included under the head of emergencies, but we think the author has acted wisely in including more than might have been absolutely necessary rather than omitting some operation that could be reasonably expected to be included. The illustrations are very numerous; in fact, it might be urged that some of them are unnecessary—for instance, a reproduction of a photograph representing how an operator should brush his nails when endeavouring to render his hands aseptic. We have, however, nothing but commendation for this work and it will be likely to prove of use to every surgeon who can read French. The book is excellently printed.

JOURNALS AND MAGAZINES.

The *Journal of Hygiene*, Vol. I., No. 1. Edited by GEORGE H. F. NUTTALL, M.D., Ph.D., Lecturer on Bacteriology and Preventive Medicine in the University of Cambridge, in conjunction with JOHN S. HALDANE, M.D. Edin., F.R.S., Lecturer on Physiology in the University of Oxford, and ARTHUR NEWSHOLME, M.D., F.R.C.P. Lond. Published quarterly. Cambridge University Press. London: C. J. Clay. Price 5*s*. net.—"The *Journal of Hygiene* has been founded in order to meet a need which has long been felt for a journal devoted to the publication in the English language of original work in hygiene." In these words the editors introduce their new periodical. The first two articles form part of a series of studies on malaria. Of these, the first deals with the Geographical Distribution of Anopheles in relation to the Former Distribution of Ague in England, a paper contributed by Dr. Nuttall, Dr. L. Cobbett, and Mr. T. Strangeways Pigg. The paper is somewhat fragmentary, and we are by no means convinced that the evidence offered justifies all the conclusions which are arrived at by the writers. The second study deals with the Structure and Biology of Anopheles (Anopheles Maculipennis). This work appears to have been carefully done and the illustrations are well drawn and clear. A little more attention to the literary style might well have been given to the letterpress; for example, on p. 58 larvæ are described as "browsing about" and are inferentially referred to as "animals." The following sentence, which occurs on the same page, is not a happy example of literary diction: "The particles that are swallowed accumulate for a certain time until a mouthful of some size is attained and this then suddenly passes into the œsophagus." Dr. Klein's article on Pathogenic Microbes in Milk is by no means comforting. A paper on Industrial Lead Poisoning, by Dr. T. M. Legge (His Majesty's Medical Inspector of Factories), is clearly written and full of information. In one word, it is excellent. Dr. Haldane contributes two papers, the first on a Rapid Method of Determining Carbonic Acid in Air, in which the author describes a portable apparatus for which he claims the merit that it is always ready for use, that it gives quickly results which are accurate, and that no calculations are involved. An apparatus possessing these merits has long been wanted. Dr Haldane's second paper is on the Red Colouring Matter of Salted Meat. It is pleasant to learn that the distinctive pigment of salt meat is not prejudicial to the internal economy when the food is well cooked and that modern research on this point is thus in accord with popular experience in the matter. One of the remaining papers contained in the volume is full of interest and worthy of careful study; it records observations on the artificial modifications of toxins, with special reference to immunity, and is from the pen of Dr. J. Ritchie. An experiment on the Effect of Inhalation of Ethylene, by Dr. J. Lorrain Smith and Mr. A. Percy Hoskins, shows that the effects produced by ethylene are very slight. The concluding paper is written by Dr. Newsholme and is on the Utility of Isolation Hospitals in Diminishing the Spread of Scarlet Fever—a subject on which it is hardly to be supposed that there is any serious disagreement amongst medical men.

The Quarterly Journal of Microscopical Science. Edited by E. RAY LANKESTER, F.R.S., ADAM SEDGWICK, F.R.S., W. F. R. WELDON, F.R.S., and SYDNEY HICKSON, F.R.S. New series, No. 174. London: J. and A. Churchill. 1901. Vol. XLIV. Part 2, March, 1901. Pp. 150. Price 10*s*.—The first memoir contained in this part is on the Development and Succession of Teeth in Halteria Punctata, by H. Spencer Harrison, B.Sc. Lond., demonstrator and lecturer on biology, University College, Cardiff. The author shows that the first dentition of this lizard consists of about 36 minute teeth which originate immediately below the epidermis, labial to the dental lamina; other teeth appear during the incubation period on the dental lamina which are probably members of a second and third dentition, and instead of displacing the earlier set alternate with them. Successional teeth make their first appearance in the premaxillæ some months

after hatching and there are in all five distinct sets up to the time when the young individual measures 21·2 centimetres. Other teeth are found upon the maxillæ, palate, vomer, and mandible. All the teeth, except those of the first dentition, have an outer coating of enamel which contains prolongations of the dentinal tubules. The mode of attachment of the teeth is hyperacrodont. The memoir is illustrated with three plates. 2 The Anatomy of Pleurotomaria Beyrichii, Hilg., by Martin F. Woodward, demonstrator of zoology, Royal College of Science, London. Mr. Woodward's specimens were obtained from Boshu, Japan. The animal is stated to be a typical example of a zygobranchiate diotocardian, and is a form very closely related to the stock from which the monotocardia originated. There are four accompanying plates. 3. Dolichorhyncus Indicus a New Acraniate, by Mr. Arthur Willey. 4. Heteropleuron Hectori, the New Zealand Lancelet, by W. Blaxham Benham, M.A., F.Z S., professor of biology in the University of Otago, with a plate. 5. On Some Parasites found in Echinus Esculentus, L., by Arthur E. Shipley, M.A., Fellow and tutor of Christ's College, Cambridge, with a plate. One of these is a trematode worm, the syndesmus echinorum, François, the anatomy of which is fully given by Mr Shipley; and another is a nematode named oncholaimus echini, of which, however, few details are given. 6. The Scottish Silurian Scorpion, by Mr. R. I. Pocock, with a plate. This specimen, which belongs to the Kilmarnock Museum, lies on its back, and is thus the complement of the specimen found at Gotland in Sweden, which has been named "palæophonus nuncius." This specimen is named "palæophonus hunteri," differing in some particulars from other known palæophoni. Mr. Pocock thinks this ancient scorpion occupies an intermediate position between limulus and eurypterida. Its skeleton supplies a few more links to the chain of evidence pointing to the descent of the scorpions from marine limuloid ancestors.

In the *Veterinarian* for March there is a most interesting article by Professor Mettam, B.Sc., M.R.C.V.S., on the production of surgical anæsthesia by the injection of cocaine into the lumbar sub-arachnoid space. The article is mainly a summary of what has already appeared in THE LANCET, accompanied by extracts from the *Semaine Médicale* and the details of some 12 experimental observations made by two French veterinary surgeons (M. Cuillé and M. Sendrail) upon animals. In equines five cases were attempted. The subjects did not appear to feel sensation in the hind limbs after the injection, although such severe operations as neurotomy, passing setons, the application of the actual cautery, and even ovariotomy, were performed. In cattle and dogs similar injections were also made, the results being equally satisfactory. The site of injection in the horse is found by drawing an imaginary line between the internal angles of the two ilia and taking the exact centre of this. On account of the closeness of the vertebral laminæ this is the only accessible spot. Provided that strict antiseptic precautions are attended to and care is taken that an overdose of cocaine is not administered, there seems to be a prospect that this method of producing anæsthesia will prove useful to the veterinary practitioner, but the difficulties and dangers in the way are much more numerous in the case of a fractious animal than in human patients. The closeness of the vertebral laminæ and spines is in itself a great obstacle, and with a subject that will not keep still in order that the operator may find the exact spot where he can penetrate the neural canal it can be imagined that less time and trouble would be taken by the present method of casting and chloroforming. It will be interesting to note what further progress is made by veterinarians. Mr. Alexander Meek, B.Sc., continues his studies of the "Growth of the Farm Ungulates," giving a further series of tables and statistics relating to the weights of cattle at certain ages. The clinical side is well represented by case notes from various veterinary practitioners and under the headings of "The Month's Progress" and "Science Notes" are items of general interest.

Scottish Medical and Surgical Journal.—The opening article in the March number is on the Edinburgh Hospital in South Africa and its Work, by Dr. Francis D. Boyd and Dr G. L. Chiene. Of the medical cases the principal disease dealt with was enteric fever, rather over 150 cases of which were admitted. The bowels were, as a rule, constipated; diarrhœa was the exception. Thrombosis was present as a common complication, occurring in 6 per cent. of the cases. It came on late in the disease, showing itself in the earliest case on the twenty-sixth day. Usually the veins of the leg were affected, but in one case thrombosis of the branches of the middle cerebral artery gave rise to paralysis with aphasia. Relapse occurred in 5·3 per cent. of the cases. Only one case of the apyrexial type of the disease was noted, in one of the members of the staff who had been inoculated. He had a rash, gastro-intestinal symptoms, enlarged spleen, and typical stools, but the temperature during the five weeks when he was in hospital only once rose to 99·4° F.; as a rule, it was subnormal. Widal's reaction was carried out in all doubtful cases and in most cases where the diagnosis was certain. Dr. T. D. Luke pleads for the more general use of ether as an anæsthetic in general surgery. Other original articles are contributed by Mr. A. W. Mayo Robson of Leeds and by Dr. Francis Kelly of Aberdeen.

Dublin Journal of Medical Science.—The original articles in the March number are: (1) A Criticism on the Light Treatment of Lupus, by Dr. Edward Stapleton; (2) The Nordrach Treatment of Consumption in Ireland, by Dr. P. S. Hichens; (3) Four Cases of Laparotomy, by Professor R. J. Kinkead; and (4) Clinical Report of the Rotunda Hospital for one year, Nov. 1st, 1899, to Oct. 31st, 1900, by Dr. R. D. Purefoy, Dr. H. C. Lloyd, and Dr. P. Carton.

The Sei-I-Kwai Medical Journal. Edited and published by the Sei-I-Kwai or Society for the Advancement of Medical Science in Japan.—The present number of this journal is dated Tōkyō, Jan. 31st, 1901. It possesses the unusual feature that of its 62 pages 20 are in English and 42 in Japanese. The contents of the English portion are—(1) an essay on the Prevention of Tuberculosis in the Navy, by K. Momose, surgeon, Imperial Japanese Navy, translated by S. Miwa; (2) an obituary (with portrait) of Mr William Anderson, F R.C.S. Eng., late superintendent of the Imperial Naval Hospital and professor in the Naval Medical College of Tōkyō; and (3) an obituary of Baron Itō, a nonagenarian botanist. The contents of the Japanese portion are—(1) a case of Cholecystotomy, by K. Takaki, F.R.C S. Eng; (2) a case of so-called Bernhalt's Disturbance of Sensation, by B. Shinshi; (3) an abstract on the Treatment of Diabetes; (4) a discussion on Empyema; (5) a memoir of Mr. William Anderson; and (6) a paragraph on Serum Treatment and the result of Prophylactic Inoculation for Dysentery. Subjoined to the English obituary of Mr. Anderson is an illustration of the Anderson medal, founded by his old pupils, and awarded annually to a naval surgeon, the successful competitor in an examination in surgical anatomy.

Mercy and Truth.—One of the articles in the March number describes the ceremony of opening the Church Missionary Society Medical Mission in Bermondsey. Between Jan. 9th and Feb. 10th there were 563 attendances at the dispensary and 357 visits were paid. It is announced that the annual meeting of the Medical Mission Auxiliary will be held in St. James's Hall on April 30th.

Analytical Records

FROM

THE LANCET LABORATORY.

"CONCORDIA" WINE (SPANISH).

(P. DE OTADUY AND CO., 20, HIGH HOLBORN, LONDON, W.C.)

THIS is a Spanish white wine, suggesting at the same time the Sauterne and the sherry character. Its alcoholic strength approaches more that of sherry than that of Sauterne. The analysis was as follows: extractives, 1·62 per cent.; mineral matter, 0·26 per cent.; alcohol, by weight 13·15 per cent., by volume 16·24 per cent., equal to proof spirit 28·46 per cent.; volatile acids reckoned as acetic acid, 0·156 per cent.; fixed acids reckoned as tartaric acid, 0·32 per cent.; sugar, 0·10 per cent.; and potassium sulphate, 0·67 gramme per litre. The wine is practically free from sugar. From the somewhat excessive amount of potassium sulphate it contains the grape juice would appear to have been liberally treated with sulphate of lime, the so-called "plastering" process. The wine is dry and possesses good flavour and bouquet. Its freedom from sugar is a feature of some dietetic importance.

THE DUPLEX HOT-AIR SPRAY.

(THE HOT-AIR SPRAY CO., 37, YORK-PLACE, EDINBURGH.)

We cannot remark any particular novelty in regard to this apparatus. It consists of a conical flask inclosing a glass test-tube in which the medicament is placed. The flask is intended to contain hot water so as to facilitate the volatilisation of the medicament, be it solid or liquid. A current of air is forced through the inner tube by a rubber aspirator, glass tubes being provided through a rubber stopper after the manner of a wash-bottle. The air in its passage through the tube, especially as it is jacketed with a hot-water container, carries forward the medicament for the purpose of inhalation. In this way it may be used as a hot-air spray for inhalations and for the local application of volatile remedies.

AUTOMATIC DISINFECTOR.

(FELL'S CHLORINE DISINFECTOR CO., ENDON, STAFFORDSHIRE.)

This apparatus is designed for diffusing automatically a quantity of chloride of lime solution in the cistern for flushing and disinfectant purposes. It consists of a pot provided with perforations and containing the chloride of lime. When placed in the cistern the chloride of lime gradually dissolves and thus the water used for the flush is charged with a definite quantity of a powerful disinfectant. The method is by no means new, and the objectionable smell given off by chloride of lime, although it may be assigned to the production of hypochlorous acid and probably chlorine, which are extremely powerful disinfectants, would not be tolerated by the majority of people. It is unpleasant to meet with a chlorous smell in the dwelling-house.

RUBY FIRES.

(RUBY'S LIMITED, PARK-ROAD, BATTERSEA, LONDON, S.W.)

The Ruby fire consists of a compost of small coal with pitch, which is said to be useful as a source of heat for the sick room and "at the same time to act as a powerful yet pleasant disinfectant." This latter claim we may dismiss at once as ridiculous. We need only point out that the combustion of the fire is attended with the production of considerable smoke, and an efficient flue is very necessary to carry this smoke away. Doubtless the smoke possesses disinfectant properties, but care should be taken to keep it out of the sick room. The fire consists of a cylinder block which readily lights, producing instantly a smoky flame which lasts for some time, and when the flame dies out a mass of glowing fuel is left behind. The "fire" yields little useful heat and it could never take the place of an ordinary coal fire, although it may be used with advantage for quickly making a coal fire radiant.

BATTLE OF THE CLUBS.

ON March 9th a meeting of the William's Pride Lodge of the Rotherham Equalised Druids was held at Eckington, Derbyshire, for the purpose of presenting Bro. Hancock with an accident compensation grant of £120 and the secretary, Bro. Norman, with a writing-desk. Among those present was Mr. W. B. Croskery of Eckington, the medical officer of the lodge. After the presentation to Mr. Hancock had been made Mr. Croskery congratulated him and in the course of his speech remarked that the working classes had become a great power in the land. According to the report of the meeting given in the *Eckington, Woodhouse, and Staveley Express* of March 15th Mr. Croskery went on to say that he belonged to a profession which had suffered largely in contract work by want of combination. They had learnt a lesson from the working classes and they were hoping to benefit by combination. The working classes by their efforts to raise their position by combination had shown their employers that they would obtain better remuneration for their services. The medical men by their efforts at combination hoped that their services would be more largely rewarded in the future. The contract work carried on by medical men was paid at the same rate of remuneration that was paid 50 years ago. Now medical education took twice the time and cost twice the money it did then, unqualified assistants had been done away with, drugs had gone up in price, and different laws had come into force, such as the Employers' Liability Act and the Notification Act. All these things gave more work to medical men. At present a conciliation board was meeting in London, composed of the better-class lodges and medical men, and there was a considerable unanimity of opinion that in the past medical men had not received the treatment which they ought to have received, and it was hoped that in the future the modest demands of medical men would be met in an agreeable manner by the combinations of the working classes and that justice, which was all they asked for, would be given to them.

Mr. Croskery's remarks were frequently applauded and Bro. Gaffney, in moving a vote of thanks to him for attending, said that he was glad to hear that medical men had banded together to raise their profession, not only remuneratively, but scientifically. They, as trade unionists, had no desire to grind down the medical profession.

We are glad to find members of a friendly society of the standing of the Druids expressing such sentiments, and we commend this account to those members of the medical profession who have yet to approve the value of legitimate combination and organisation.

Another meeting of the same order, but in connexion with a different lodge—namely, the Kenny's Pride Lodge—was held on March 11th, this occasion also being to present a member with an accident compensation grant. Dr. J. D. Kenny, the medical officer of the lodge, was in the chair. During the course of the proceedings Mr. Gaffney, referring to medical men and medical aid associations, said that he hoped that medical men would demand only what was fair and just. He thought that there could be no doubt that assistants to medical men, as well as drugs and instruments, cost more than formerly. Members of friendly societies were prepared to pay their medical men what was fair, but medical men must remember that these members were only paying in the same sums as they did 30 or 40 years ago. Mr. Richard Kirk expressed the opinion that the time had come for every member to be asked to pay an increased contribution. He noticed that Dr. Kenny still attended members on the old scale. Dr. Kenny asked permission to refer to the question of fees. He explained that when he took the members of the lodge at 3*s.* 6*d.* each he had the colliery club as well and was therefore in a way paid twice over. But for that, he should have gone in for the increase and stood shoulder-to-shoulder with his professional brethren. We congratulate Mr. Gaffney and Mr. Kirk on their opinions and trust that it will not be long before they are put into practice.

THE LANCET.

LONDON: SATURDAY, MARCH 30, 1901.

The Indian Medical Service.

THE history of India has of late been largely a record, as everybody knows, of various deplorable experiences and sad vicissitudes of one sort and another, constituting the medical rather than the ordinary general history of a country. Plague, pestilence, and famine make up a list of evils from which a nation may well pray to be delivered, and it is through such that India has of recent years been passing. Nor can it be said that the latest news regarding the epidemic of plague in that country is reassuring, although it may be hoped that one of those seasonal fluctuations, which have hitherto marked its progress and may be regarded as part of its natural history, is approaching when a temporary lull in the prevalence and mortality of the epidemic may be expected to appear. On the disastrous effect which this succession of calamities has had upon India and its vast native population there is no need to dwell. During the whole of this trying time the officers of the Indian Medical Service have most loyally and patiently devoted themselves to their work. Unhappily, the occurrence of the troubles in China has now to be added to the list of responsibilities of the Indian Government and to the labours of its medical service. Medical officers, recognising the necessities of the situation in the past, have struggled to do their best and have willingly foregone all leave and continued, or been recalled to, their duties in India in order to aid the Government in successfully coping with the urgent requirements of the position. But it is clear that this state of things cannot be continued indefinitely. There arrives a time when the strain becomes more than can be sustained and the probable risks and sacrifices become too great to be contemplated with any equanimity. It is, to adopt a proverbial metaphor, futile to apply whip and spur to a willing but jaded horse; rather in the present case of the medical service should these be used to urge on the lagging intent of the authorities.

We quite recognise that the Government have had to encounter unusual difficulties and has striven to do their best in the hope that these would prove to be of a purely temporary character, but we confess that we cannot regard the matter in that light. The measure which seems to us to be most urgently needed at the present time and the one which would tend more than anything else to lift the Indian Medical Service out of the difficulties which it is experiencing in regard to leave is an increase of its establishment. This is a real grievance and an increasing one. Not only has all leave been stopped but voluntary retirements have been suspended and all medical officers on furlough have been recalled to India. We feel confident that the Secretary of State for India, when he fully realises the position, will recognise the legitimate nature of the discontent to which this state of affairs must give rise and that he will do his best to remove it. This could, in our opinion, be easily done and without any unreasonable strain on the Government finances of India. An increase of 10 per cent. to the establishment is necessary. We calculate that such an increase would suffice to meet all the demands for special duty in ordinary times without interfering with leave. The service would still have to meet any extraordinary emergencies, but if we may judge from the spirit which it has always exhibited it may confidently be counted upon to do this. Let us explain with a little more detail. The Indian Medical Service consists at the present time of one officer for every permanent appointment which has been sanctioned by the Secretary of State plus 20 per cent. for leave purposes and 5 per cent. for casualties. Any extra appointment not on the sanctioned lists has to be filled from this 25 per cent. reserve, and the more of these extra appointments there are the more, of course, is this reserve encroached upon. The service is not recruited to meet Imperial needs in Africa and China and the consequence of all the recent troubles in those countries has brought about the result which we have already stated. Ever since the Chitral expedition of 1895 the same difficulty in regard to leave has prevailed more or less except in 1898. War, plague, or famine, sometimes all three together, have been present, and the whole of the leave reserve has been absorbed owing to medical officers having to be put on special duty. 105 officers are entitled to be on leave at the same time. But we understand that there are at present some 125 in South Africa and China, 56 on sick leave, and some 16 on plague or other special duty. This makes 92 officers short of the requirements for current work.

The hospital arrangements for the expedition to China have been made on a large scale—on altogether too large a scale in the opinion of many—but no one is likely to err on the side of too economical a provision in the present day, and it may be readily understood that the Secretary of State for India was determined to have no debates in Parliament and commissions of inquiry in connexion with Indian arrangements. Be this as it may, the troubles in China have made great demands at an unfortunate time upon the medical services in India, and when they are over something else will be sure to occur in a country like India to create fresh demands for special duty officers. To get over the difficulty and to prevent its becoming a chronic source of complaint there seems to be no way but by increasing the cadre so as to allow the leave reserve to be utilised for the purpose for which it was intended. There is no doubt room for the introduction of several improvements in the Indian Medical Service. Still, it is an old and good, and on the whole a contented, medical service. Long may it remain so and long may it continue to attract the excellent class of candidates which it has hitherto secured, and we trust that the Secretary of State will see his way to effect this object by sanctioning an adequate increase of its establishment.

The Public Health and the Housing Question.

THE duty of providing suitable dwellings for the poorer members of the community is by no means an easy one to fulfil. One of the chief difficulties in the matter was

admirably summed up by Sir JOHN SIMON when he pointed out that the smallness of the earnings of the poor in the lowest paid branches of industry as compared with the necessary costs of wholesome and decent living. This has always been the main fact which has caused trouble and the possibility of rendering that ratio less unfavourable to the poorer workers either by cheapening the costs of life or by bettering their conditions of employment has in a variety of forms been the essential problem for study.[1] In the City of London itself Sir JOHN SIMON had found a state of things which probably does not exist at the present time in any part of the metropolitan area. "Hovels like pits, low sunken between high houses hemmed in by barriers" which excluded every breath of ventilation were a little over 50 years ago situated in the very heart of the City. By way of improvement Sir JOHN SIMON suggested to the civic authorities two possible solutions: "To remove the well-constructed houses of the City in order that its wretched courts and alleys should participate in the blessings of light and air might seem one method of conquering the difficulty which is before you. But I apprehend the opposite alternative of proceeding to a gradual suppression of all residence in the former class of dwellings may more naturally have your approbation."[2] It was by means of a presentation of the stern facts lighted by gleams of humour that the medical officer of the City of London impressed on the City Commissioners of Sewers the conditions which needed alteration; and by his persistent labour he was ultimately rewarded by bringing about a gradual change for the better, at first in the City and later through the country generally, at the later period of his life when he became medical officer to the Privy Council.

The first improvements in the condition of the dwellings of the working-classes were carried out by philanthropic societies. During the first half of the last century the Society for the Improvement of the Condition of the Labouring Classes, which was under the patronage of QUEEN VICTORIA and of the QUEEN DOWAGER, and of which PRINCE ALBERT was the President, and another society called the Metropolitan Association for Improving the Dwellings of the Industrious Classes (which was under the chairmanship of Sir RALPH HOWARD) did a great deal of useful work. In St. Pancras, in Pentonville, in St Giles's, and in Drury Lane, a number of model lodging-houses were built and conducted under rules made to ensure cleanliness, sobriety, and a general propriety of conduct. The buildings were constructed with a view to ensure proper ventilation, drainage, and general cleanliness, and the establishments thus started were an enormous improvement on anything which had previously existed in London. Of late years still greater advances have been made, but up to the present time those who have most profited by the newly-built dwellings have been rather well-to-do artisans than the very poor—the class called by Mr. CHARLES BOOTH the "casual workers." Unfortunately, these people have, as a rule, been unable to pay the amount necessary to obtain even a small flat in the newly-constructed dwellings. As a class they do not generally gain the practical sympathy of those who have devoted most of their time to the study of the conditions of the poor in London. The class, according to Mr. CHARLES BOOTH, is not one in which men are born to live and die so much as "a deposit" from a class of those who from mental, moral, and physical reasons are incapable of better work. It is doubtless a class for which it is extremely difficult to do anything, but it may be hoped with regard to it that the resources of civilisation will not entirely fail to be of use.

The Milroy Lectures which were delivered before the Royal College of Physicians of London by Dr. J. F. J. SYKES and of which the third and concluding lecture was published in THE LANCET of March 23rd, p. 837, deal with the influence of the dwelling upon health. We commend these lectures to the study of our readers. They contain in addition to some well-known and well-established facts a number of personal observations on the present state of the dwellings of the poorer classes in St. Pancras, many of which are very striking. The fact that overcrowding in barracks has been in the past a great cause of high mortality is now a matter of common knowledge, but it is none the less a notable fact that the investigation made into the high mortality of the Foot Guards over 40 years ago and the results which came of that inquiry were the starting-point for enormous improvements in the ventilation of houses generally and particularly in the ventilation of dormitories. Dr. SYKES gives some interesting statistics with regard to the relative mortality in stable dwellings and in the other houses which are to be found in St. Pancras, the district to which he is medical officer of health. It will be noticed from the statistics which he gives that the death-rate from zymotic and pulmonary diseases is excessively high in stable dwellings, and from the statement which he publishes it seems open to doubt whether these dwellings are at all fit for human habitation. Dr. SYKES, in his third lecture, points out the difficulties which have ensued from the alteration of houses of fair size into dwellings for more than one family. One of the most striking pieces of information is that which relates to the inadequate water-supply in some workmen's flats. It seems that in many of these buildings of four storeys no water is laid on above the ground floor and that all the water which is required has therefore to be carried upstairs by the unfortunate people who live there. "There is a vast number of families," he says, "in London living on the top floors of four-storeyed houses the water-taps, sinks, water-closets, and dust-bins of which are situated at the ground floor or basement or in the yard or area, and these houses are about 40 feet high." This state of things is one which demands immediate alteration.

The Metropolitan Boroughs will have much to do in regard to the improvement of the dwellings of the poor. We have no doubt that they will set about the work without delay and carry it out efficiently. In former days, when the enforcement of sanitary regulations was in the hands of the vestries, these bodies too often neglected their duties. The first report of the Royal Commission on the Housing of the Working-classes pointed out that the remedy which legislation had provided for sanitary evils had been imperfectly

[1] English Sanitary Institutions Reviewed in their Course of Development, and in some of their Political and Social Relations, by Sir John Simon, K.C.B. Cassell and Co., London. 1890.

[2] Report of the Sanitary Condition of the City of London for the year 1848-9. London, Brewster and West.

applied in the metropolis, and the Commissioners went on to state that the failure had been not infrequently due to the negligence of the local authorities. Evidence was given to the Commission that insanitary property in many cases was owned by members of the vestries and of the district boards, and from these facts it was obvious that many of the persons whose duty it was to see that a better state of things should exist were those who were pecuniarily interested in keeping them as they were. We have no doubt that members of Metropolitan Boroughs will be guiltless of any such frightful jobbery. The work before them is a very great one, and will need energy as well as honesty to carry it through successfully. By way of making a beginning each Borough Council would be well advised to have a full report made by some efficient officer as to the state of the dwellings throughout its whole area. Efficient sanitation can only be maintained by constant effort, and it is a matter of extreme importance that the Boroughs should not be content to wait with a view simply to clear away the houses of the poorer people, but that all that constant care can do should be begun without delay and should be carried out without intermission. Let us mention only two examples: the present regulations in regard to dustbins are not properly enforced even in the richest parts of London, and it is obvious from Dr. SYKES'S report that there are many dwellings which are at present without a constant water-supply.

The Medical Staff and the Management of the National Hospital for the Paralysed and Epileptic.

THE proceedings at the meeting of governors of the National Hospital for the Paralysed and Epileptic, which took place at the hospital on Saturday, March 23rd, will be found fully reported on p. 981 of the present issue of THE LANCET. The result of the meeting is extremely significant. Our readers know the position of affairs, which was set out at length, not for the first time, in THE LANCET of March 16th, p. 798. The medical staff had on various occasions during the last 10 years requested representation on the Board of Management. The Board had persistently refused the request and at their suggestion different methods had been tried as substitutes for that proposed by the staff. These methods had proved unsatisfactory in actual practice. One of them had been discontinued by the Board without any reason; another had been repudiated by the staff because the Board had not adhered to the conditions on which alone the staff had consented to give it a trial. Finally, in June of last year the staff, receiving no satisfaction from the Board, appealed to the governors, and in their appeal furnished illustrations of faults in the administration of the hospital which the complete absence of medical knowledge in the Board had entailed.

The various efforts of the Board to escape from the position in which the statements of the staff to the governors had placed them may be fairly summarised as follows:—(1) the appointment by the Board of a sub-committee of its own body, which inquired into the allegations and faintly approved the existing methods of administration; (2) the calling of a packed meeting in the "silly season" to secure a vote of the governors approving of exclusion of the medical staff from the administration of the charity; (3) the appointment of Sir FORD NORTH to hold a limited inquiry under circumstances which precluded the staff from having anything to do with the inquiry; and (4) the efforts of certain friends of the Board and of the staff to bring about peace, which were rendered futile by the discovery of the Board that the medical staff intended to maintain their position. There is inherent evidence to show that during the long time in which the Board were presumed to be considering the resolutions of the staff to insist upon proper representation they were organising a decisive move against the staff. For negotiations with the staff were suddenly broken off and simultaneously, through the secretary-director, behind whose name they have persistently hidden their identity, the Board issued a statement in the *Times* and summoned a meeting of governors. This is the meeting which was held on March 23rd, at noon. The motions to be proposed were two in number. The first provided for an inquiry into the allegations by the medical staff of mismanagement in the administration, and the second defined the character and scope of that inquiry. As the first was the only one which came before the meeting we need refer only to it. It stated—

"That inasmuch as the demand of the medical staff for direct elective representation on the Board of Management has been expressly based upon certain allegations contained in a statement that was issued by the medical staff to the governors in June, 1900, and inasmuch as it would be impossible to test the accuracy of such allegations at a meeting of the governors, it is hereby resolved that an independent inquiry into the accuracy of these allegations ought to precede any reconsideration of the demand of the medical staff."

This motion rested upon an absolutely false basis, for it was notorious that the staff had made repeated requests for representation on the Board many years before the statement to the governors was issued. The motion was proposed, in a speech which was far from conciliatory, by Mr. GEORGE W. E. RUSSELL, who did his best to make historical fact fit his conception of the case. It was seconded by Mr. FRANK CAPEL, another member of the Board. An amendment was at once moved by Mr. MELVILL GREEN, a gentleman to whom the other governors of the hospital owe a deep debt of gratitude for his persistent and single-minded advocacy in behalf of the best interests of the charity. The amendment was—

"That a full and independent inquiry be at once instituted by the governors into the statement issued by the medical staff in June, 1900; the facility of intercommunication between the medical staff and the Board, including the demand of the former for direct representation on the Board; the position, functions, and acts of the secretary-director; and the constitution, rules, and management of the hospital generally."

This amendment was seconded by Sir JAMES CRICHTON BROWNE, who warned the Board that the medical press and the medical profession completely endorsed the action of the staff, while he warmly repudiated the absurd statements that medical influence on the Board would convert the hospital into a mere scientific laboratory. Of course, the staff were

strongly in favour of the amendment. Now came the surprise of the meeting. Battle was in the air, when Mr. BOWER, the solicitor to the Board, and himself a governor, announced that the Board would accept the amendment.

The amendment was accordingly put as a substantive motion and carried unanimously. A strong committee of governors and subscribers was at once appointed to choose a committee of inquiry, and this committee was instructed to place upon such committee of inquiry at least one physician or surgeon, one eminent lawyer, one man engaged in commercial or financial pursuits, one man (not a medical man) experienced in hospital management, and one other person. It was agreed to empower the committee to conduct the inquiry as the members may think fit, authorising them to request the Board and the staff to employ counsel if the committee of inquiry think necessary and to provide that all necessary and proper expenses of the inquiry shall be borne by the hospital funds. We congratulate the medical staff on at last obtaining the just and impartial inquiry for which they have been strenuously contending so long, and we congratulate the hospital on the prospect that it has of having emerged from the shadow under which it has lately lain. We trust that for the future the Board will show by their loyal coöperation with the medical staff in advancing the best interests of the charity in which they should both be profoundly and equally interested, that they have bidden a permanent farewell to the somewhat tortuous methods upon which it has been the duty of THE LANCET to reflect. For then the hospital, which must have suffered financially, and also in its power of ministering to the wants of a peculiarly afflicted and very numerous class, will soon recover the ground which it may have lost, and with a cordially coöperating Board and medical staff constantly in direct touch with each other will enter on a period of even enhanced prosperity.

Annotations.

"Ne quid nimis."

FOR THE BENEFIT OF SHOP ASSISTANTS.

A GLANCE at the legislative proposals of private Members of Parliament is often instructive and interesting, even though these proposals possibly, and, indeed, probably, may never become law. Among those recently introduced in the House of Commons we note one which is prompted by a desire to promote the health of a section of the community, and which, if it were to come within measurable distance of being passed, would probably excite considerable interest in that section and among those persons most intimately connected with it. One of its provisions meets with our cordial approval. It orders that "every shop shall be provided with sufficient and suitable accommodation in the way of sanitary conveniences, having regard to the number of persons employed there, and also, where persons of both sexes are employed, or intended to be employed, with separate accommodation for persons of each sex," and it institutes a penalty of not more than £5 for breaches of this regulation. No one can gainsay that the preservation of health and decency is a proper subject of legislative interference. All employers ought to provide that the work of those who serve them in any capacity should be done in perfectly wholesome surroundings and many employers other than shopkeepers neglect in this respect a duty which the law might well enforce upon them. In other particulars the Bill which we are criticising contains proposals as to which there may fairly be differences of opinion, differences which may easily be caused by the varying conditions in which the business of shops is carried on. These refer principally to the hours of labour. It is proposed that all shops shall be closed on one day in each week at or before one o'clock, an arrangement which would no doubt be welcomed by assistants desirous of attending football matches, morning performances at theatres, and otherwise amusing themselves, while on three other days in the week seven is to be the latest hour for closing, and upon the other two week-days nine and ten o'clock respectively. The number of hours to be worked in the week is fixed at 60, including meal-times, while an hour in the day is to be devoted to dinner and half an hour to tea. There are other regulations to limit work after closing time and there is a section which enacts that a child under the age of 14 years shall not be employed in or about a shop. The precise limitation of this last provision would presumably be ascertained by degrees after prosecutions. It hardly, however, seems to us necessary that a child under 14 years should be useless to parents or to neighbours should it be desired to find the child employment "in or about a shop." Apparently, however, the Bill would make all such employment, even by parents, illegal, although existing laws, if enforced, already protect children against being employed to the detriment of their education and against being treated with cruelty and oppression. With regard to the employment of children, the shortening of the hours during which shops may be kept open, and the whole question of shop work, we may point out generally that shop work is apparently still a popular form of employment with young people and that there is no sign that the hardships, real or imaginary, which the Bill before us seeks to diminish check the supply of shop assistants to an undesirable extent. We do not propose to criticise in detail a Bill which may never come within measurable distance of being passed. We would suggest, however, that service in shops differs widely in its severity according to places and seasons. The work may be trying at times to mind and body, but not all shops in town and country present the features of a fashionable London draper's establishment during what is known as a "sale," nor can the work done be easily compared with the work in factories, workshops, and mines which the law has recognised as a fit subject for its interference; while although shorter hours of work are undoubtedly more pleasant, especially to the young, than longer ones, it cannot be said that long hours of intermittent occupation are necessarily prejudicial to health. The question of what is or is not directly prejudicial to the health of the class sought to be benefited seems to us to be the most satisfactory test to apply to legislation of this kind which admittedly interferes with the liberty of the employer and the employed to regulate their relations by contract. We do not mean by this that the comfort or the enjoyments of the employed should be neglected, but rather that they should be regulated by other influences than that of the law—such as public opinion, the knowledge that the most considerate master will probably obtain the best workers, and the circumstances affecting individual cases. It must also be remembered that although leisure and freedom from restraint are very pleasant things, and much can be done, if leisure be granted, that is conducive to health, at the same time life is a serious matter and those who intend to work for a livelihood have to face life seriously, while it is quite possible to spend leisure unhealthily and equally possible to enjoy very little leisure and yet to remain in sound health. The difficulty, no doubt, is to frame a Bill for Parliament which will check abuses and remedy evils without at the same time injuring innocent persons unnecessarily. We

have not gone into the question of the financial welfare of the small shopkeeper who would presumably be most affected by such a measure as that to which we have called attention. We only suggest the test which should be applied to the individual clauses of Bills of this kind by the persons asked from time to time to pronounce upon them in Parliament. It might well be applied, for example, to such Bills as that to reduce the hours of miners to eight hours from bank to bank, an important change to which the House of Commons has already assented to the extent of allowing the Bill to be read a second time after a very brief discussion. The Bill dealing with the question of the early closing of shops introduced in the House of Lords by Lord Avebury is a very different measure from that which we have criticised above. It proposes to bring about the shortening of hours by the intervention of the local authority in districts and in respect of classes of shops with regard to which application shall have been made to the local authority in the manner which the Bill prescribes. It has been framed with a view to protect the health of shop assistants in those cases where it is liable to be endangered by long hours, and as such, in the experienced hands of Lord Avebury, deserves the serious consideration of Parliament.

UNSATISFACTORY VACCINATION.

THE Portsmouth Board of Guardians, and indeed Portsmouth itself, have recently been much perturbed by certain revelations as to vaccination in their union, and they are asking themselves whether, despite the fact that Portsmouth is, numerically speaking, a fairly well-vaccinated town, the population is not, *quâ* the prevention of small-pox, living in what they term a "fool's paradise." This disquietude has been brought about by Mr. H. P. Gaston, a medical member of the board of guardians, who, at a recent meeting, moved,

"That in view of the large number of children throughout the country who are inefficiently vaccinated by private practitioners (in Portsmouth it is officially estimated that they number more than 50 per cent.) this board petitions the Local Government Board to take steps that in future legislation such practitioners be compelled to vaccinate up to the same standard of efficiency as the public vaccinator, and that the Poor-law Union Association, and all boards of guardians throughout England and Wales, be asked to join in the petition."

Mr. Gaston stated that out of an average of 4760 children born annually in Portsmouth a little over 4000 per annum had been vaccinated. Of this number 1200 had been vaccinated by the public vaccinator, 800 fairly efficiently by private practitioners, and the remaining 2000 had, he alleged, been vaccinated in one place only. It is difficult to know from what source Mr. Gaston has obtained these figures as to vaccination in one place as no such return is required by the Vaccination Acts. But perhaps it is known that certain practitioners vaccinate in one place only, and that such practitioners have signed some 2000 certificates annually. Mr. Gaston regards the one-place vaccination as not only dishonest but as a disgrace to the noble profession to which he belongs, and he foresees for Portsmouth a terrible awakening in the future. Mr. Gaston had evidently the sympathy of his audience, and the motion above referred to was carried unanimously. Although we are not prepared to accept the statistics here in question without further evidence it is clear that Mr. Gaston has been instrumental in bringing to public notice in Portsmouth a very weak point in the administrative procedure of vaccination. This much-to-be-deplored practice of vaccinating in one place, and thus conveying a false sense of security to the person vaccinated, is one which all true friends of vaccination should unhesitatingly condemn. The public are unable to differentiate between vaccinations any more than they are in a position to know whether they are taking the proper dose of a drug. With them the fact of having been vaccinated confers immunity against small-pox, at least for a considerable period, but when the next wave of this disease passes over this country there may indeed, as Mr. Gaston observes, be a "rude awakening" for those who have some years previously been vaccinated in one place alone. It is quite true that such a vaccination confers protection for a time, but all evidence points to the fact that in order to confer adequate protection until revaccination is called for a scar of at least half a square inch should be produced and this scar is more easily and more safely procured by four separate insertions than by one. Those who practise this imperfect vaccination are likely to bring discredit upon the cause of vaccination and also upon themselves, and we should welcome some provision which would render such vaccination as this illegal. But the subject bristles with difficulties. In connexion with this subject of unsatisfactory vaccination we have received a communication from an American lady who has recently arrived in this country and who has had her child vaccinated in London. She alleges that the operation was performed with a domestic darning-needle which the medical practitioner did not sterilise or cleanse before using, and she asks if medical men "generally vaccinate in such a careless way over here." We trust that this lady's experience is exceptional and that the practice usually adopted is to wash the arm and to cleanse the instruments in the manner laid down by the regulations of the Local Government Board in the case of public vaccinators. There is no excuse for careless vaccination.

THE PLAGUE AT SOUTHAMPTON.

THE following are the details respecting the case of bubonic plague which is at present under observation at Southampton. The hospital ship *Simla* left Durban on Feb. 16th with invalids for Southampton, calling at Cape Town on Feb. 18th to take a few additional passengers. She arrived at Plymouth on March 12th, where it was reported that no infectious disease existed on board with the exception of two cases of enteric fever, one patient being an officer who was landed at Plymouth, and the other a member of the crew, a laundryman, who on arrival at Southampton on March 13th was removed to the isolation hospital there. In consequence of the precautions taken by the Southampton sanitary authority to have the earliest intimation of any suspicious case which might occur in the district, the authorities of the South Hants Infirmary had been requested to notify the medical officer of health should they receive into their hospital cases of glandular disease the cause of which could not be explained. On Sunday, March 17th, the house surgeon informed Mr. A. W. Harris, the medical officer of health, that he had under his care a Lascar suffering from abscess in the inguinal region who had been admitted to the hospital for operation. Mr. Harris saw the patient without delay and upon examination came to the conclusion, considering the whole of the surroundings and the history, that he should be removed to the isolation hospital for further inquiries. Suspecting that the case might prove to be plague Mr. Harris subsequently had an interview with the ship's surgeon, who informed him that the man was taken ill two days after leaving Cape Town. He had a temperature of 103·5°F., which afterwards diminished and then assumed a septicæmic character. During the early stage of his illness the man complained of a good deal of pain and tenderness over the inguinal region. The vessel on her arrival at Cape Town had not been alongside any quay or wharf, nor had the man in question been ashore. On the outward voyage of the *Simla*, however, the vessel had lain alongside the quays at Cape Town. The surgeon

stated that the case was not considered an infectious one, and he had not thought that it was plague. The patient was emaciated, weak, and distressed. A collection was made of material from the suppurating bubo and forwarded to the Local Government Board for bacteriological examination, the result of which when received confirmed the diagnosis of plague. The case is particularly interesting as showing what we believe has not happened before, the discovery of plague bacilli in pus in which large quantities of streptococci and staphylococci were present. The man is now convalescent. No other cases have occurred. All persons who had been in direct contact were isolated and were still under observation on March 26th. The nurses and others who had handled the patient were injected with Yersin's serum, and of the large number who received the injection only one complained of severe headache; the others felt no inconvenience worth speaking of. There is no direct history of infection, but there is good reason to believe that the patient, who was a baker's mate and had been in the habit of catching rats, must have obtained the infection by handling the rodents. The man's temperature at the hospital was practically normal. He had a large fluctuating swelling in the left inguinal region. He is now progressing favourably.

AEROPHAGIA OR AIR-SWALLOWING.

AT the meeting of the Société Médicale des Hôpitaux of Paris on March 1st M. Albert Mathieu and M. R. Follet communicated a paper upon a comparatively unrecognised condition—aerophagia or air-swallowing. The term *aérophagie* was first used by M. Bouveret.[1] In a hysterical young woman he observed spasmodic movements of the pharynx, during which she noisily swallowed air. From time to time the distended stomach relieved itself by a voluminous eructation of odourless gas. Later M. Pitres showed that *aérophagie* was frequent in the dyspepsia of nervous patients who were not manifestly hysterical.[2] Aerophagia is usually confounded with flatulent dyspepsia which is then treated with carminatives or antiseptics without avail. In the mild forms of aerophagia the patients complain of slight dyspeptic symptoms. Some time after meals there is a feeling of weight in the stomach and of more or less marked malaise. Soon discharges of odourless gas take place, during which there is sometimes a painful sensation of epigastric tension. As many as 30 or 40 eructations take place, and in some cases even hundreds. Such a history absolutely establishes the diagnosis. Gastric fermentation could not furnish such a quantity of gas. Pressure on certain regions, particularly on the epigastrium, causes crises of aerophagia by reflex action. The eructations succeed one another indefinitely as long as the pressure is maintained. By observing the movements of the larynx it may be seen that each eructation is preceded by a movement of deglutition. Sometimes the stomach becomes noticeably distended, sometimes not. In some cases only one eructation corresponds to four or five acts of deglutition. Other methods of producing the attacks are titillation of the pharynx and pressure on the larynx and on the spinous processes in the neighbourhood of the third dorsal vertebra In certain cases aerophagia takes a grave form: it produces vomiting, aggravates the dyspepsia, and leads to emaciation. The following cases are examples. A man, aged 23 years, had been addicted to alcohol for some years and he became dyspeptic. To relieve the discomfort which he experienced after meals he returned his food. More or less unconsciously he distended his stomach by swallowing air and in expelling this he produced regurgitations of food which sometimes lasted the whole afternoon. Soon true vomiting supervened and he became weak and emaciated. At the age of 26 years, when he entered hospital, eructations could easily be produced by pressure on the epigastrium or in the supra-sternal hollow. The patient in the second case was a very nervous woman, aged 56 years, who suffered from membranous colitis. She complained of interminable noisy eructations which came on after meals. The abdomen was relaxed, there was ptosis of the liver, and the gastric region was tender. Pressure on the epigastrium produced an attack of aerophagia with noisy eructations. The patient discovered this fact three years before when rubbing herself. It was explained to her that the eructations were simply the result of aerophagia, and rest in bed, light diet, and codeia were prescribed. Great improvement ensued. The pathogenesis of aerophagia seems to be as follows. A neurotic subject suffers from slight dyspeptic symptoms, of which he is very observant. He is excessively sensible of gastric distension and gurglings and endeavours to relieve himself by expelling gas. A movement of deglutition, usually unconscious, opens the cardiac orifice and allows an eructation, which gives relief. Unconscious aerophagia provokes a painful sensation of distension which is relieved by eructation and followed again by aerophagia. As to treatment, it is sometimes sufficient to explain to the patient the nature of the process, but in advanced cases of hysteria more severe means are necessary, at times even isolation. The dyspepsia should be treated in the usual manner. In horses aerophagia is a recognised disorder and is known to horse-dealers in France as "tic à l'air." As aerophagia, which is a neurotic disorder, is little known in French medical literature, still less recognition is to be expected in English. However, in the Edinburgh Hospital Reports of 1895 Dr. John Wyllie has described the cases of neurotic individuals who acquired the power of creating by muscular action negative pressure in the œsophagus and thus sucked air into their stomachs. In THE LANCET of August 1st, 1896, p. 304, Dr. G. A. Sutherland published a case of this kind. Dr. Wyllie terms this condition "air-sucking" and distinguishes it from air-swallowing. The case of one of Barnum's "freaks," who could by swallowing air pass rapidly from the appearance of emaciation to corpulency, may also be mentioned.[3]

[1] "Aérophagie hystérique," Revue de Médecine, 1891, p. 146.
[2] Progrès Médical, Jan. 12th, 1895.

ST. MARY'S HOSPITAL.

A LETTER which appeared in the daily press of March 23rd signed "Alfred de Rothschild" deals with a matter which merits the careful consideration of those who have it in their power to give. The letter recalls the fact that the executors of the late Mr. Siegfried Rudolph Zunz have awarded a sum of £25,000 to St. Mary's Hospital for the completion of the Clarence memorial wing of the hospital at Paddington, on condition that the hospital authorities shall within six months raise a further sum of £25,000, making £50,000 in all, this being the sum which the completion of the building is estimated to cost. The Clarence memorial extension was commenced nine years ago and continued until 1898, when, the basement being finished, lack of funds stopped the works. The two most important features which the new building, when completed, will present are new wards and a new home for nurses. The need for the latter will be specially understood when we state that at present all the night nurses and some of the day nurses have to be lodged in houses in the neighbourhood of the hospital. It is therefore most important that the £25,000 should be raised within the specified time or else the offer of the executors of the late Mr. Zunz will lapse, and intending donors should remember that, in the words of Mr. de Rothschild, every £1 which they give really adds £2 to

[3] THE LANCET, Feb. 12th, 1898, p. 451.

the hospital funds. London grows day by day and coincidently with its growth appears that of sickness, pain, and accident. We therefore earnestly hope that the sum necessary for St. Mary's Hospital to benefit by the Zunz bequest will be forthcoming even although the present times are hard for those who have to depend upon charity. Subscriptions may be sent to Mr. Alfred de Rothschild, the treasurer, at St. Mary's Hospital, Paddington; to the bankers of the hospital, the London and County Banking Company, Limited, Connaught-street, Edgware-road, London, W.; or to the secretary at the hospital.

THE HOMELESS IN MANCHESTER.

IT comes with something of a shock to learn that there are so many of the "submerged" in Manchester. One night about a week ago the police raided some brick kilns in Cheetham, Manchester, and apprehended 54 men and youths whom they found huddled together for warmth by the oven fires. "These wretched outcasts," as they are called in a newspaper report, were charged at the city police-court on March 13th with "sleeping out" and sentenced to terms of imprisonment varying from a day to a month. On some of them, perhaps, sympathy would be wasted, but others may be homeless without much fault of their own. In the latter case it would seem absurd to punish for the poverty that cannot provide a bed under a roof if it were not for the existence of the casual ward which theoretically is equal to all demands; but it is sufficiently unpopular to make many prefer imprisonment.

ARSENICAL POISONING BY BEER IN THE COUNTY BOROUGH OF SALFORD.

THE report of Mr. C. H. Tattersall, the medical officer of health of the county borough of Salford, has been printed and it is of special interest as dealing with that area in which the remarkable and now happily historic outbreak of arsenical poisoning by beer occurred. The report includes Professor Delépine's report on the chemical investigation and Mr. Tattersall has added Dr. E. S. Reynolds's account of the clinical symptoms which appeared in THE LANCET of Jan. 19th, 1901, p. 166, while some valuable information supplied by brewers, sugar manufacturers, acid manufacturers, and maltsters is appended. Professor Delépine arrives at conclusions which are already well known—namely, that the outbreak was due to a toxic amount of arsenious acid or arsenites in the beer consumed, that the toxic amount of arsenious acid was derived from brewing-sugars, and that the arsenic present in the sugars was due to the use of impure sulphuric acid manufactured from arsenical pyrites. He considers that when beer, sound or otherwise, does not contain more than one-hundredth of a grain of arsenic per gallon in the form of arsenious acid or of an arsenite it is probably quite a safe drink. When regard is had to the wide distribution of arsenic in nature and of the probability of its normal occurrence in food products in minute amount some definite limit should be laid down as to what may be regarded as a poisonous quantity. Mr. Tattersall suggests that it would be unreasonable to forbid the use of substitutes, providing that some means are devised by which the carelessness of one or more individuals can be prevented from endangering the lives and health of the public. At the same time, it should be recognised that any person replacing a natural substance by a manufactured article in the preparation of any foodstuffs takes upon himself the responsibility of seeing that no injury should ever result from such substitution. Mr. Tattersall holds, further, that the Food and Drugs Act should be amended so as to make the contamination of foodstuffs with poisonous matter in appreciable quantity, whether to a dangerous extent or not, and whether to the knowledge of the seller or not, an offence within the meaning of the Act, as it is obvious that the presence of a poison in a small quantity is often an indication that there is distinct danger of a dangerous quantity being introduced at any time. Lastly, Mr. Tattersall points out that one of the lessons of the outbreak is that some improvement should be made in the arrangements for the notification to the health authorities of outbreaks of disease, and that there is urgent need for some provision whereby regularly scientific investigation into the constitution of foodstuffs and their adulterants can be carried on continuously. Apart from beer these are points which the Royal Commission on Arsenic Poisoning were appointed expressly to inquire into with a view to better and more protective legislation.

A LOW ESTIMATE OF SANITARY MEDICINE.

THE sanitary authority of Axminster has distinguished itself by devising a new principle for selecting candidates for the office of medical officer of health. The principle is that of accepting the lowest tender. The applicants for the office were asked to name their terms and the appointment was given to the gentleman who asked least for his services. Save as a reward of possible modesty this seems to us an entirely unworthy procedure, raising the strongest doubt as to the fitness of the sanitary authority for the discharge of its responsible duties. The function of such an authority is to save its constituents from preventable disease and death, and the notion that this function is discharged by electing the medical man who charges least for his services is not one which we should like to apply to a dairyman or a druggist. We gather that the Axminster rural district includes a population of 10,000 and covers a sanitary area equal to 64½ square miles, for which the late medical officer of health received £45 per annum, equal to 1*d*. per head of the population, or ¼*d*. per acre, or 14*s*. per square mile. The late medical officer of health complained that he had held the office for 13 years and obtained no notice of the termination of his engagement. The ethics of this remarkable procedure on the part of the authority are of a piece with the intelligence which it had displayed and they should be duly studied by the Local Government Board. The interest of medical officers of health and of the population alike requires that appointments should be made on very different principles.

HYDROGEN A NORMAL CONSTITUENT OF THE AIR.

THERE seems little room for doubt that hydrogen is a normal constituent of the air to the extent of two in 10,000 parts by volume. Normal air, therefore, contains hydrogen to the extent of about one-half of the normal amount of the carbonic acid. The difficulty of detecting and estimating hydrogen in such a large volume of air would account for the fact that its presence hitherto in the atmosphere has not been determined for certain. This difficulty has been overcome by that untiring investigator, M. Gautier of Paris, and his success has led to some interesting revelations. It should be remarked, however, that Professor Liveing and Professor Dewar in their experiments on the liquefaction of air obtained a fraction which consisted of nearly one-half hydrogen and which by well-known means was made to explode. M. Gautier in his researches relied upon combustion methods, which were carried out with remarkable precision, and these demonstrated the presence in addition to hydrogen of hydrocarbons, at any rate in town air and country air. The hydrocarbons diminished in air taken from the region of mountain heights and far out at sea, but even at these places the hydrogen remained approximately two parts per 10,000. The air of

Paris contained, in addition to hydrogen, marsh gas to the extent of 2·2 parts per 10,000 with traces of carbon monoxide. During the investigation it was shown that in the absence of vegetation and soil the proportion of marsh gas diminished. Thus in mountain air the quantity found was 2·19 volumes per 100,000, as against 11·3 for the air of forests and 22·6 for the air of Paris; while out at sea the air is free from hydrocarbons but still contains two volumes of free hydrogen in 10,000. Hydrogen would therefore appear to be a constant constituent of the air. The origin of the hydrogen is undoubtedly geological and so also, in a measure, is the marsh gas. Methane is often evolved from many soils and from coal and other minerals, while hydrogen, it is well known, is occluded in rocks. It is interesting to speculate whether the hydrogen would accumulate in the upper strata of the air or as to whether the force of gravity of the earth would be sufficient to chain such light elements as helion and hydrogen to its surface. Some hold that their escape would be possible, and in accordance with this view there would be a constant stream of the light gaseous elements from this earth into inter-stellar space.

THE EPIDEMIC OF SMALL-POX AT GLASGOW.

No section of the public watches the contest with small-pox in Glasgow with more interest than does the medical profession, and there is no feature of that contest more interesting to its members than the call upon all practitioners to come to the help of the authorities in a house-to-house visitation with a view to the immediate revaccination of all un-revaccinated persons and *a fortiori*, of course, the vaccination of the unvaccinated. There is a certain red-tapeism in the arrangements for public vaccination which is eminently out of place at a moment when Glasgow is threatened with the gravest inconvenience and loss from a raging epidemic. That revaccination should be recognised only when done at certain stations by a few selected practitioners is a very doubtful plan for effecting the revaccination of a large community. We can only rejoice that the authorities of Glasgow have broken through this ritual and have taken into their service every willing practitioner. It is a matter of satisfaction, too, that the call of the Lord Provost has been responded to promptly by 200 practitioners who for the modest—too modest—fee of half-a-crown are to visit the homes of the people and to offer revaccination to them. The medical profession might have sulked in its tents. It might have given the anti-vaccinationists their turn and have brought down on them the just indignation of a misguided community in their suffering from disregard of the plainest teaching of experience and of medical science. But that is not the manner of the medical profession. And we can only trust that its whole energy and interest will for the next few weeks be devoted to this supreme effort to save a great city, which in many ways of sanitation has set an example to the United Kingdom from the natural effects of its own improvidence, assisted by lax and imperfect legislation. We look to this army of medical volunteers for more than a perfunctory discharge of its great duties. They will have a great opportunity of overcoming prejudice and of removing ignorance. They are performing an operation which even Leicester authorities do not despise in their officials and which *for more than 50 years sufficed to protect every nurse and other official of the small-pox hospital of London from the dire disease*. Of course, the operation in this case was done well. It was done so as to "take," and until revaccination "takes" it cannot be said to have been done. Moreover, it is possible now to do it with such precautions of cleanliness and antisepticism as to reduce the soreness and inflammation of the process to a minimum. The use of aseptic instruments, ablution of the skin with soap-and-water, followed by cleansing with an antiseptic solution, should precede the punctures which in no case should be less than four. We gather from a writer in one of the papers that some revaccinated persons say that they would prefer small-pox! While in favour of all reasonable measures to minimise temporary inconvenience we ask each person to look at the alternatives, and especially at the 200 actual deaths of those who have already paid the penalty of neglect of a sure safeguard.

ACUTE CEREBRAL DEGENERATION SIMULATING MENINGITIS.

PROFESSOR W. G. SPILLER of the Philadelphia Polyclinic has published in the March number of the *Journal of Nervous and Mental Diseases* a case of the above which is interesting because clinical symptoms of meningitis existed for six days before death and yet no signs of meningitis were found at the necropsy. On the contrary, the morbid changes which were found suggested an acute degeneration of the cerebral nerve-cells similar to those observed in amaurotic family idiocy. The case was that of a boy, aged eight years, the fifth child of his parents born at full term but after a difficult labour lasting three days. He was of feeble mental development, did not know the alphabet, and could not talk or dress himself. The senses of sight and hearing were good. He was undersized, he had some scoliosis of the spine, and he walked with a spastic gait. He was free from convulsions. He was admitted to the Training School for Feeble minded Children in Philadelphia in March, 1900. A fortnight later he appeared to be ill with pain, diarrhœa, and vomiting. He was restless, the skin was hot, and the temperature was 102° F. The pulse was rapid but there was no cardiac murmur. The lungs were normal and the liver and spleen were not enlarged. Urine was passed involuntarily. Next day he became more restless, there was abdominal rigidity, and the skin was hyperæsthetic. Food was retained. Photophobia and sluggishness of pupillary reaction followed, the abdomen was retracted, and the legs were drawn up. He grew worse after this, was delirious and very restless, and developed an erythema of the right knee and calf. There was no albuminuria. Coma supervened and the erythema increased. Only rectal feeding was now possible. The diagnosis was cerebro-spinal meningitis. The child died on the sixth day of his illness. The following conditions were observed at the necropsy. There were several purpuric spots about the thighs, knees, and arms. On removing the calvarium a large amount of cerebro-spinal fluid, tinged with blood, escaped. The cerebral hemispheres were œdematous, but there were no appearances suggesting acute meningitis. No miliary or other tubercles were present. The heart appeared to be normal except for a little paleness of the myocardium. The lungs were slightly œdematous, but crepitated and had no areas of consolidation. A few slight submucous hæmorrhages were present in the stomach and kidneys. There was a small supernumerary spleen. Microscopical examination of the brain and spinal cord showed nerve-cells in a state of acute degeneration in the anterior and posterior cornua, cranial nuclei, and cerebellar and cerebral cortex. In the cerebral cortex the giant pyramidal cells of Betz were especially degenerated and altered. The cell-bodies were swollen and rounded, many of the dendritic processes had disappeared, the chromatic granules were not to be seen except in a partially disintegrated condition immediately around the nuclei, and often the nuclei were displaced to the periphery of the cells. All the multipolar cells of the anterior cornua in the spinal cord showed these changes in a marked degree, recalling the appearances described by Hirsch and Sachs in

amaurotic family idiocy. Various short bacilli were found in the nerve-tissues. Spiller refers to another case observed by him in conjunction with Dr. J. McCarthy where similar changes were found and that, too, was in a feeble-minded child. The theory of a toxic causative agent seems to be suggested in the present instance, the disease having analogies to the meningitis serosa described by Finkelstein and Seitz, in which bacilli were found in the cerebro-spinal fluid.

THE BEER BILL.

ON the night of March 27th the Beer Bill passed its second reading in the House of Commons by the substantial majority of 112. Put shortly the Bill is intended to enable the consumer to know what he is not drinking. "Beer" is to be divided into two classes, somewhat on the logical process of dichotomy—namely, malt beer and part malt beer. Malt beer means that which is brewed from barley, malt, yeast, hops, and water. Part malt beer does not mean this. These are admirable provisions to our mind and we would fain see them extended to all classes of food. Substitutes are generally harmless and often palatable, but the consumer should know what he is getting. If, for instance, he likes to use cotton-seed oil for a salad let him do so, but he should not have cotton-seed oil palmed off upon him under the impression that he is buying olive oil.

THE COLONIAL SECRETARY AND THE SANITATION OF OUR WEST AFRICAN COLONIES.

THE unhealthiness of certain portions of the West Coast of South Africa has long been a matter of notoriety, and an enormous number of relatives and friends of the workers on that coast have had good reason to deplore the fact. So much, indeed, has the deadliness of this district been officially recognised that higher pay is awarded and longer leave granted there than is the case elsewhere. But if the chambers of commerce of London, Manchester, and Liverpool, assisted by the young but vigorous Liverpool School of Tropical Medicine, have their way all this will soon become matter of history. Mr. Chamberlain has lent more than a sympathetic ear to these bodies, which waited upon him recently at the Colonial Office, and he has propounded a scheme which should bring forth in one or another fashion an abundant harvest. The deputation had apparently a little scheme of its own, but such scheme did not in its entirety commend itself to Mr. Chamberlain's statesmanlike mind. Clearly, in the view of that mind, the scientific expert is an admirable individual but perhaps a little too given to utopian ideas. By all means let the scientific expert be the mainspring of an expedition to the West Coast colonies, but let his ideals be applied by the representatives of the several chambers of commerce who will accompany the expert, and let there also be a representative of the Colonial Office who shall, as it were, focus the information obtained and bring it back for the benefit of the Colonial Office. This was, in effect, Mr. Chamberlain's scheme, and it is apparently soon to be carried into effect. With a proposal to make a "house-to-house" inspection of our West African colonies Mr. Chamberlain was not in entire accord. He saw the danger of too sudden a change which might work incalculable harm and there is no doubt that a gradual adaptation is a wise method. There is, however, one particular in which we venture to differ both from the Colonial Secretary and from the deputation. As we understand it, it is proposed to have but one sanitary adviser upon the Commission. We would suggest, however, that, having regard to the importance of ascertaining, as far as may be possible, the causes which are responsible for the undoubted unhealthiness of the districts concerned, a trained epidemiologist used to etiological methods should be included. With the view of meeting Mr. Chamberlain's desire to obtain an estimate of the necessary cost of the proposed reforms the services of a sanitary engineer versed in estimating the cost, and devising schemes, of water-supply and sewerage are also required. Both of these gentlemen should be selected with the greatest care, and the importance of their working amicably together should not be lost sight of. This proposal would still leave the scientific element in a decided minority, and hence there would be no fear that the practical side of the question would be overlooked.

A MEMORIAL TO THE LATE DR. LEECH.

A STRONG desire has been expressed to honour in some permanent form the memory of the late Professor D. J. Leech, and many of his friends have offered to help in the furtherance of a suitable scheme for this purpose. Those who were in the confidence of their late friend believe that such a memorial could take no better form than that of carrying out a project in which Dr. Leech was deeply interested, and with which he intended to occupy himself had he lived a few years longer—namely, the provision of an endowment for the professorship of materia medica and therapeutics in the Owens College, a chair which he himself occupied for nearly 20 years with much distinction. Owing to his unexpected death last summer at the comparatively early age of 60, Dr. Leech was unable to fulfil his intentions in such a way as to enable the chair to be founded at once; but in his will he provided for the future by leaving a sum of money which will ultimately be available for the endowment of the chair. It is now the wish of the late Professor Leech's friends and colleagues to provide for the immediate endowment of the professorship, and to associate it with his name. The Council of Owens College have decided that the chair shall be called the Leech Professorship of Materia Medica and Therapeutics, and all who wish to join in the memorial are invited to subscribe. Subscriptions may be sent to Dr. E. M. Brockbanks, 3, St. Peter's-square, Manchester, honorary secretary; to Dr. J. Dreschfeld, 3, St. Peter's-square, Manchester; to Dr. D. Little, 21, St. John-street, Manchester; or to Mr. W. Whitehead, 17, Market-street, Manchester. We think that many of our readers may like to testify their appreciation of Dr. Leech's services to medicine, both scientifically as a pharmacologist and practically as a thoroughly useful member of the General Medical Council, by contributing to found a professorship to his memory in the college which he served so faithfully. About £2000 are required, upwards of one-half of which sum has already been received.

THE COAL SMOKE ABATEMENT SOCIETY.

WE have received the annual report for the year ending Dec. 31st, 1900, of the Coal Smoke Abatement Society. The society is doing most useful and admirable work, and since its formation in March, 1899, no less than 2700 observations have been made by the society's inspector on smoking chimneys in various parts of London; offences have been proved in 162 cases, and penalties have been inflicted, amounting altogether to the large sum of £750, of which many have been of small amount. During the year 1900 the inspector reported to the committee 1742 observations of offending shafts, and by order of the committee 1010 formal complaints were presented, as the nuisance was not abated, to the local vestries, borough councils, and the Port Sanitary Authority of London. In 125 cases proceedings were instituted and fines imposed amounting to £494 13s. The report also states that the owners of the numerous and increasing class of trade furnaces and chimneys have profited by the conviction of other offenders

and have taken steps to secure themselves against prosecution. We are very glad to hear this, for in the West-end of London, at any rate, it is not the factory chimney which is the chief sinner, but the chimneys belonging to such trades as bakers, restaurants, and big hotels, to say nothing of the electric lighting companies. The excuse generally put forward about not being able to get Welsh coal is no excuse at all. The section of the Public Health Act concerned with smoke says nothing about Welsh coal, but merely mentions black smoke. Fines should certainly be imposed of such magnitude as to make it obvious to the owner of an offending chimney that it will be cheaper for him to take steps to prevent such chimney vomiting filthy smoke than to run the risk of being fined. That such steps can be taken is shown by the example of the Nottingham lace manufacturers. They found that the emission of black smoke spoiled their goods, and therefore set themselves to work to find a means of curing the nuisance. This was done with such success that nowadays a smoky factory chimney in Nottingham is unknown. If this result can be attained in the case of factory chimneys it can also be secured by the expenditure of money in the case of other chimneys. We would add that the society at present has only one inspector. If it could afford to pay another the excellent work already done might be largely increased. Subscriptions will be gladly received and acknowledged by the honorary treasurer, Dr. H. A. Des Vœux, 14, Buckingham-gate, S.W.,

THE LONDON COUNTY COUNCIL WATER (PURCHASE) BILL.

MR. LONG, the President of the Local Government Board, recently received a deputation from the London County Council on the subject of the London water-supply. He may have felt that as a Minister in a strong Government it would have been an abuse of power not to receive the deputation, but in the circumstances he would have been justified in so doing, and his action would not have been mistaken for intolerance by those who really understand the questions at issue. Mr. Long then definitely declined to support the pretensions of the London County Council to legislate for "Water London" in a manner directly opposed to the interests and to the wishes of a majority of the public authorities who represent the extra-metropolitan districts. After this the London County Council cannot be surprised that their Water Bill met with ill success in the House last Tuesday. The interests of the people of London will be best guarded by the metropolitan boroughs and by the City of London. The City representatives have already spoken. The borough councils will undoubtedly give their attention to the matter. We regret that the London County Council persist in wasting the ratepayers' money in useless Parliamentary proceedings.

DANGEROUS FLANNELETTE.

OUR attention has more than once been drawn to the extreme inflammability of what is a very popular article of clothing in the cold season of the year—namely, flannelette. As is well known, it is a soft fluffy fabric and is used largely as a material for making nightshirts on account of its warmth, especially for children. We have nothing to say against its qualities of keeping the body in comfort and warmth, but that it is a dangerous material for the purpose has been very sadly shown in more than one instance. It ignites with the most dangerous ease, burning with a hot bluish flame not unlike the flame of burning alcohol, and once alight it is well-nigh impossible to extinguish it. The latest disaster arising from the use of this material was in the case of a child, aged six years. The poor little fellow was clothed in a flannelette nightdress, and by some means or other he had too nearly approached a gas stove, with the result that he was soon enveloped in flames. He evidently had been left alone, for his mother had rushed from another room to his assistance on hearing his screams. He was so badly burned that he died on the following day. We have tested this material again and again, always with the same result. It takes fire instantly owing to the fluffy and porous nature of the material, a hot blue flame shooting along the surface and increasing most rapidly in size and in intensity. It cannot be too widely known that flannelette is a most dangerously inflammable material, and that great care needs to be taken to prevent it from coming anywhere near a fire, candle, or gas flame. In any case, whatever the clothing may be, children should always be protected from such a possibility by adopting fire-guards. There is no doubt that when once flannelette is ignited the fire can only be put out and a horrible sequel prevented with the greatest difficulty. The life of the person dressed in it, according to the experience of such cases, is hardly ever saved, than which it is difficult to imagine a worse indictment against flannelette.

THE reports for the year 1900 of the Committee of Management and of the Medical Committee of the Dental Hospital of London were considered at the annual general meeting of the governors held at the new hospital on March 28th. From the former report it appears that the new Dental Hospital has been erected at a cost of nearly £50,000, exclusive of the sum of £42,000 paid for the site. The old building has been sold for £18,500. From the latter report it appears that no less than 69,176 cases were attended to at the hospital during the year, of which 28,752 required operations which were performed under anæsthetics. This is a steady increase upon previous records.

THREE telegrams, dated March 20th, have been received at the Colonial Office from the officer administering the Government of Western Australia. The first states that up to date the following cases of plague had occurred:—in whites eight cases, seven being in adults and one in a child, with no deaths, one Chinese male who died; total cases nine. In addition a very suspicious death had occurred of a white man, which death, telegram No. 3 states, was pronounced to be due to plague. Telegram No. 2 states that the governor was confident that owing to the rigorous measures adopted the plague would shortly be stamped out.

ADVANTAGE is being taken of the expected visit of their Royal Highnesses the Duke and Duchess of Cornwall and York to New Zealand to hold a gigantic bazaar at Wellington, the capital, in aid of a home for incurables. Lady Douglas, who will preside over the Empire Stall, has started a memorial fund with the object of adding a wing to this home, to be called the "Empire Memorial Wing" in honour of the brave New Zealanders who have lost their lives in South Africa in defence of their sovereign and country.

AT the annual general meeting of the Medical Graduates' College and Polyclinic on March 26th a considerable portion of the time was occupied in a discussion raised by Dr. F. W. W. Goodsall on "The Really Dangerous Position Financially of the College." On this point the honorary officials spoke at length, with the result that the council's report and balance sheet were duly passed.

A TELEGRAM from the Governor of the Cape of Good Hope, Sir W. F. Hely Hutchinson, received at the Colonial Office on March 25th, states that for the week ending March 23rd there were admitted 46 cases of plague. The deaths numbered 21, the suspects three, and "contacts" 394.

THE official programme of the proceedings to take place at

the British Congress on Tuberculosis, to be held in London this year from July 22nd to July 26th, has just been issued. We have no space this week in which to make more than the bare announcement.

GUY'S HOSPITAL has received a grant of £2000 from the Goldsmiths' Company towards the special requirements of the hospital, which include a building fund of £180,000.

THE MANAGEMENT OF HOME MILITARY HOSPITALS.

BY SURGEON-CAPTAIN W. PUGIN THORNTON,
ROYAL EAST KENT YEOMANRY CAVALRY.

THE management of military hospitals in South Africa, judged mostly by civilian eyes, has of late exercised many minds, so much so that a Royal Commission of inquiry was granted to examine into all the points at issue. Having acted for a year during the Boer war as medical officer at a station hospital in England containing more than 100 beds it may be of interest if I point out some of the instances in which I believe improvements on the present home system might be made.

In the first place, it should be the rule of the authorities of the Army Medical Department that no medical officer should be put in charge of a station hospital unless they were satisfied that his knowledge of medical and surgical practice was thoroughly sound and fully up to date. Should an officer not be considered fit for the post of senior medical officer then he should not be given rank above a major, or even a captain, and should be allowed to retire on full pension if he so desired.

The senior medical officer (S.M.O.) in charge of a military hospital has every morning to send a certain number of sick soldiers into the wards. Each one has a diet sheet at the head of his bed, which has a space filled in with the title of the complaint which the senior medical officer has diagnosed the man to be suffering from. Should the junior medical officer under whose care the sick soldier is placed not agree with the diagnosis of his senior he cannot alter it without referring the matter to him. This is all right if it occurs only once or twice, but frequent references to the senior medical officer are apt to become, to say the least, tedious. And if he points out to the senior medical officer the faulty diagnosis and the latter does not agree to change the title of the disease nothing more can be done by the junior medical officer. Should he persist, however, in drawing attention to a number of cases he will be sure to be told that he is impertinent, that he is to mind his own business, and that the senior medical officer sees no occasion to alter his opinions.

When cases of faulty diagnosis occur through the want of sufficient training on the part of the senior medical officer, such palpable errors not only cause opprobrium to fall upon the profession, but give much dissatisfaction to those connected with the work of the hospital. Undoubtedly the senior medical officer should be reasonably perfect in his work, so that junior officers can appreciate his work with satisfaction and be able to appeal to him with a feeling of safety in any medical or surgical dilemma, and also—and this is not the least important item—that the soldier can rely upon the treatment of his malady being safe and likely to be beneficial.

Of course we are all liable to make mistakes. I made a glorious one during my work in the station hospital by thinking that the rash which mostly covered a man's body was small-pox modified by vaccination. It was a case of iodine rash—and this rash I had caused myself by having frequently painted a quantity of iodine on his leg and neck. I proved this by bringing out the rash a second time. I felt so confident at first that it was a case of small-pox (there were nine cases in the neighbourhood to frighten me which had been diagnosed as chicken-pox), the man having slight fever for a day, that I vaccinated all in the hospital. Certainly this was a mistake on the right side, for to overlook a case of small-pox is a terrible calamity. But to make blunders continually is another matter.

The best suggestion which I can offer is that the Army Medical Department should assist army medical officers to continue their medical and surgical studies from the time that they enter the service to the day on which they are promoted to the rank of lieutenant-colonel. If every medical officer spent a month in every possible year up to the date of his promotion to lieutenant-colonel at a large general hospital, possibly with school attached, then by the time his turn came to take charge of a station hospital he should be reasonably perfect in his work.

Medical officers should not be bothered with examinations. Often examinations do not show the practical worth of a man. Rather let a surgeon from year to year be judged by his work. Of course, it should be insisted upon that medical officers did not waste their opportunities of gaining fresh knowledge during the annual months in London or elsewhere. Professors of the civil hospitals in consideration of the fees paid would ensure that there was no waste of time, reporting if the post-graduate's application to work was not satisfactory. It is universally acknowledged that a medical man acquires knowledge far more readily and of greater use after he is qualified than he does when he is a student. If year by year a medical officer, after two or three such months of general work, varied his subjects, one year attending a lunatic asylum (very necessary for the quick appreciation of soldiers pretending to be insane), another year an eye hospital, another year a throat and ear hospital, another year a hospital for women and children (for the sake of those he has of necessity to look after), another year at Netley Hospital, and would give some time to the work of a medical officer of health, then the frequent statement that an army surgeon knows "next to nothing" would be a saying of the past. They would after such varied study, with the military hospitals in which to amplify their work, become superior in medical and surgical knowledge to their brethren in civil life, and the day would come that no combatant officer would ever want to call in a civilian practitioner to attend his family, so great would be his faith in his brother officer. It is presumed that special pay would be granted to medical officers during these annual months, and that all the civil hospital fees would be paid for them, also that weekly medical journals would be provided. Perusal of these greatly helps to keep one fresh in professional knowledge. Medical officers should also be encouraged to report "interesting" cases in medical journals. Doing so increases a man's accuracy in, and his love for, his work, besides often putting before him or other members of the profession some knowledge which they have not had the opportunity of acquiring. Every station hospital, also, should have a fixed table with a good microscope ready for immediate use, and a complete case for testing fluids.

The diets for soldiers in hospital who are able to eat solid food are known by the names of "chicken," "convalescent," "roast" (which includes joint, chop, or steak), and "varied." The "chicken" diet allows for dinner half a chicken, which must not weigh less than eight ounces and the "convalescent" diet allows 10 ounces of meat (with bone), and each has four ounces of bread and eight ounces of potatoes. The "convalescent" diet, in addition, has 15 ounces of soup, which contains four ounces of mixed vegetables. The "roast" diet has its bread increased to six ounces, and in addition to the eight ounces of potatoes has four ounces of vegetables. Each of these three diets gives a very good dinner, but a far better one is the "varied" diet. This has 15 ounces of roast or stewed meat (with bone), six ounces of bread, 14 ounces of potatoes, and six ounces of vegetables. A curious regulation with regard to this latter diet is that no extras are allowed, so that the medical officer must not put upon the diet sheet such things as soda water, eggs, or custard pudding &c. Should he do so, perhaps desiring his patient to have a drink when he is thirsty or something to eat in the night, he may be charged with the cost of each extra ordered notwithstanding that he has written a history of the case. Should the medical officer order extras with other diets (say, a custard pudding with the "convalescent" diet) then the regulation is that he must write a history in the case-book, and note upon a special blank space on the diet sheet the page in the case-book on which he had written a history. Evidently by this compulsory writing of a history it looks as if the intention was to deter medical officers from giving extras, however necessary they might consider them to be. Of course, such serious cases as enteric fever, and so on, should have histories written, but it is waste of time to write long notes on all sorts of cases. If the existing regulation is solely for the

purpose of stopping extra nourishment being given, I have no hesitation in saying that the regulation serves its purpose, and is not an ennobling one for the service.

In relation to the question of ordering extras it is found that in nine cases out of ten a sick soldier who is able to enjoy his food eats the whole of his bread-and-butter at breakfast and dinner meals, leaving only the pint of tea for his last meal. It is the custom to serve the bread-and-butter rations in the morning. During an epidemic of influenza, lasting from November, 1899, to the spring of 1900, I had over 500 cases of this disease passing through my hands, a few of them ending fatally. I found it desirable in every case to give stimulants (in the shape of egg-flip), never knowing during that epidemic how serious each man's illness might be. To get over the difficulty of writing more than 500 medical histories, and to save the waste of time, I used to mark the diet sheets with the number of a certain page in the case-book. On this page I had written the history of one case of influenza, adding to my notes that, as by far the greater number of the cases of this disease were nearly alike, I should make this one history stand good for the greater number. It was doubtless very wicked of me, but it was consolatory to be thus able to save my regimental conscience and at the same time to be able to give more time to more useful work. It may be hoped that before long the Army Medical Department authorities may see their way to trusting medical officers more fully, allowing them to give extras when they consider it desirable and not forcing them to write histories of cases which are of no use to anybody, only being, if waded through, a waste of time to read. I acknowledge that every hospital surgeon is liable at times to be guilty of ordering excessive diets for his patients. It is so in civil hospitals. But, I think, experience shows that it is only necessary for attention to be drawn to the fact and the extravagance will cease. If treated as gentlemen men will, of course, behave as gentlemen. It will be quite time enough to use such measures as ordering histories to be written when a chronic offender will not pay attention to his senior officer's warning.

The breakfast and tea meals with each of the four mentioned diets are the same. They consist of a pint of tea, six ounces of bread, and half an ounce of butter. Between tea and breakfast there is no other meal, and therefore the sick soldier is 14 hours without food. Considering the scantiness of the tea meal (supper) this is much too long a time. If the tea was made more substantial by adding sausages alternately with eggs, &c., and given at 6 P.M. instead of at from 4.30 P.M. to 5 P.M., then the man would be more fitted after his night's sleep to wait until the eight o'clock breakfast. I have often had sick soldiers complain of great feeling of emptiness in the night. No wonder, especially with those who have eaten all their bread by the middle of the day. The breakfast, too, is a very poor one. I should like to see it enlarged by oatmeal porridge alternately with corned beef or cold bacon, &c., and the quantity of the bread-and-butter increased. In gaol we give prisoners more satisfying breakfasts and suppers than we do these soldier patients, for the former have eight ounces of bread and a pint of porridge with each meal.

There is a blot in the regulation regarding the ordering of diets, and that is that if a meat diet has been marked on the sheet the previous day, as the custom is, and the soldier has an attack of fever or colic, &c., the diet cannot be altered for one of milk or of beef tea. At any rate, if it is so altered—and it is most desirable that it should be—then there is a great hullabaloo because the articles of diet have been requisitioned the day before and the diet sheets have also to be altered in the office. The remedy should be to allow a sufficient quantity of milk to be given to the extra sick soldier, putting his unused diet on a casualty list. Undoubtedly it is a waste of time daily to have to write down the diet a soldier is to have, when no alteration perhaps is made for two or three weeks. In civil hospitals a blank sheet is used, and when a change of diet is thought desirable the fresh diet is written down with the date against it, and thus time is saved.

Soldiers who come to the hospital for medical treatment are sometimes sent into what is known as the "detained ward." This is done when probably a man will be well enough to return to duty the next day, or when the medical officer is doubtful if his illness will be of a nature to necessitate his being made a hospital patient. The order is that a soldier should not be kept in a detained ward for more than 24 hours, but I have known him to remain there for four days. It is often a great convenience to detain a sick man for more than one day. As long as a soldier is thus detained his meals are not supplied by the hospital, but his rations are brought up from the barracks uncooked, the cooking being done in the hospital kitchen. The practice is the same with regard to rations given on the first day that a soldier is admitted into hospital. He is supposed to bring his uncooked rations with him which are to be cooked in the hospital kitchen. But this, as in the case of the detained soldier, is very rarely, if ever, done and the consequence is that the man's meals for the first day are brought up cooked by the orderly of the sick soldier's barrack-room. After a journey, which may be long, we may be sure that the food is scarcely in a suitable condition for a sick man. It must be granted also, of course, that the illness the soldier is suffering from is suitable to the food, and not the food to the illness, which requires no Euclidian demonstration. The dietary arrangements for the first day a soldier is in hospital, or during the time he is in the detained ward, are bad. It should be that in either case the man is fed entirely from the hospital kitchen with a diet ordered by the medical officer. This bad arrangement for the detained ward was carried out in South Africa, for a letter published in the *Times* a short time back from an Imperial Yeoman to his father bitterly complained of his diet during the days he was in the detained ward of his hospital.

With regard to the healthy hard-worked soldier in barracks his dinners are good, but his breakfast and tea (supper) meals leave something, medically speaking, to be desired. These meals vary considerably. For instance, in one regiment there is for breakfast on Sunday boiled bacon besides the tea and bread-and-butter, but nothing extra on the other days of the week. Another regiment on Sunday has brawn, on Monday salmon, on Wednesday sardines, on Friday cheese, and on Saturday bacon. In both of these regiments when they have something extra for breakfast they only have the tea and bread-and-butter for supper. On the days when they have nothing extra for breakfast they have for supper either potted meats, corned beef, tomatoes, sardines, fish, brawn, tinned salmon, kippers, jam, or golden syrup. It would be wiser if at each of these meals they had steak, liver-and-bacon, or Irish stew, &c. I believe that their funds would allow of more substantial food if economy was better studied. Latterly it has been arranged that every soldier should be able to procure a cup of coffee and a biscuit after 6 A.M., in some regiments free of charge, in others at a ½*d.* each. This shows that the desirability and necessity of increasing the amount of sustenance have been seen. It would also be wiser if for breakfast a full half hour was given instead of it being rushed through in ten minutes or a quarter of an hour.

Kitchens should be better fitted up than they are, complete sets of cooking utensils being provided. Kitchens are very often badly kept, the utensils being dirty. Diarrhœa is caused sometimes from foul saucepans, but not always, or the station hospital would be in greater request. At depôts it seems to me that permanent cooks should be kept. This is the order given elsewhere. Permanent cooks are, of course, better cooks than the odd men; they keep their places and utensils in better order and they form a school of cookery for the youngsters.

Another boon might, and many say it should be, granted. The daily pay of a soldier in the infantry is 1*s.* with 3*d.* for mess allowance, and for the cavalry man 1*s.* 2*d.* with 3*d.* for mess allowance. (This 3*d.* of the last two years is a great improvement.) At the present time a soldier in hospital has 7*d.* a day deducted from his pay for his food, besides losing the 3*d.* which outside he has for mess allowance. This deduction must be intended somewhat to stop the soldier malingering—not that it often succeeds. In special cases this stoppage of pay for food is remitted, for instance, when a soldier has been admitted for an injury which occurred on duty. Then there has to be a court of inquiry, whose finding has to be submitted to the general officer commanding the district. If this officer approves, the whole or half of the stoppages are remitted to the soldier. Deducting 10*d.* a day from the pay of a bachelor soldier is not so great a hardship as it is in the case of a married one. A married soldier's home during his sickness has to be kept up, and his wife and children have to be fed. When the man is on duty rations are issued to the family, but when he is sick no food is granted to his wife and children. The hand of disciplinary regulations falls heavily upon them for the illness

of the husband and father. How they manage it is hard to say. Living must be done at a starvation rate. The misery of the family is, I should think, unwarrantably great. I know what the sick soldier's misery is and that this worrying on his part, putting it mildly, does not help his recovery. It seems to me that Government should act as a good master does to his servant, paying full wages during sickness. There is more reason for the Government doing so, for it never has to fill the man's place during the time he is sick. Or, putting the argument in another way, Government could take upon itself to act towards the soldier as a sick club does with a subscribing labourer. If a soldier "goes sick" without sufficient reason it can be left to the military surgeons to put a stop to his malingering, and the malingerer could be charged full price for his food for the time he has been in hospital. In the sister service no portion of the sailor's pay is deducted for the first month. After that time up to three months he loses 10*d*. a day out of 1*s*. 7*d*.

I have a strong feeling of regret at the continuous enforced economy in every department of the hospital. This practice of economy is almost miserly. Certainly it is harmful. Probably it is in consequence of the poorness of the grant for carrying on the working of military hospitals. During my time of work at the station hospitals I often had to make complaints that the baths were not supplied with hot water, and frequently I found that the cold water had been turned off because attention had been drawn from head-quarters to the high amount of the city water-rates. Now, to ensure soldiers being clean before they go to bed in the hospital wards, and to keep them clean, there must be plenty of hot water for their use, and, therefore, the water-supply should not be niggardly. It is false economy, it is generally allowed to lead to dirtiness, and also that dirtiness breeds unhealthiness. The same scarcity of supply can be said regarding the quantity of gas allowed to be consumed in the wards, officers' rooms, and offices of the station hospital. There was repeatedly an insufficient light for me to read or write by, and certainly too poor a light for operating by. I used to borrow a duplex lamp from the neighbouring civil prison, of which I am surgeon, when I wanted a light sufficiently strong for such special work as the examination of ears and throats. The stock of instruments allowed for a station hospital, say of over 100 beds, is too scanty. If other instruments than those kept in the surgery were required I obtained them either from the prison or from my home. Many a time I have heard the sisters complain of the short allowance of bandages, &c. Many a time I asked that an instrument and a drug I required might be written for, but I was put off with the statement that it was no good applying for them, that I should not get them, or that there would be so much correspondence on the subject that I must be good enough to manage without; and so, as I have already stated, I borrowed. The same trouble occurred with regard to drugs. The stock kept in the surgery, to my mind, is below the proper requirement. One often had greatly to fashion one's medical treatment to the collection of drugs kept in the surgery, and not to treat disease entirely with those one believed most suitable—a grand opportunity for hitting upon a new cure. Perhaps it was better for many sick men that they were left more to nature. Sometimes, however, I did bring medicines from home for use at the station hospital. One had to do this on a few occasions when the hospital supplies ran short and until the half-yearly drug supplies came in. Supplementary drug demands can be sent in, but they take about a month before being executed. One special drug I did apply for. I was told that it would not be allowed. It was Nourry's iodinated wine. This remedy saved the life of a soldier, or saved him at any rate from losing his leg from tuberculous disease of the knee and tibia which followed a wound caused by the kick of a horse. This remedy was kindly allowed by the authorities, but 19 days passed before the supply arrived, and in the meantime I had to obtain some from a local chemist at my own expense, in order that the man might be kept going. Three weeks without this drug would have been most serious for him, for it was the only one which was of service to him, and without it I believe he would have "gone the way of all flesh." It is difficult to see why the Army Medical Department cannot act in the same way as the Commissioners of Prisons. If drugs are urgently needed, sufficient quantities (to last until the contract druggist can send a supply) are obtained from a local chemist. And thus it is with all other items of necessaries for sick prisoners. The supplies are liberal, and the medical officer has a free hand in ordering them.

I may add that prisoners in gaol receive every consideration. It was said by a man's wife at Bow-street before the magistrate concerning her husband, who was in custody for desertion, that, "he prefers going to prison to paying, and says it is like going into a convalescent home. The only thing he misses is his beer." (This statement appeared in the daily papers of Nov. 10th, 1900.) There is nothing wanting for them that is desirable. It would be well, to return to the question of the management of the station hospital, if Government would extend this extreme prison liberality to the Army Medical Department, thus allowing for an improved state of things in the case of the sick soldier.

At times during my year of office as medical officer I also carried on the work of the senior medical officer during his illness, and thus of course I had an insight into the whole management of military hospitals. One of the greatest puzzles, amongst others, to me was the steward's account. It accounted by one-fiftieth of an ounce in the column for pepper, one-twentieth of an ounce for mustard, and one-eighth of an ounce for flour. The amalgam of these fractional proportions made a lovely show—a regular battle-field of figures.

The returns in the Army Medical Department are most varied and almost endless. There are daily returns, weekly returns, monthly returns, quarterly returns, half-yearly returns, and annual returns. I often wondered that the staff-sergeant at the head of the clerical department in the hospital I was working at did not lose his head and make one big return by throwing the accounts into the fire, but then he was a most excellent young fellow, and I may add that he was not only quick, neat, and correct in his clerical work, but that he was also a capital hand as hospital orderly, at bandaging, and at the first management of injuries. He was, I considered, the great mainstay of the hospital, besides being able to play cricket and football, which are most desirable relaxations for the staff. He knew all the innumerable regulations and the proper method of carrying them out. Everybody could depend upon him. What added to one's feeling of admiration for him was that in all he did he kept "straight." For a non-commissioned officer to be honest is everything. I am sure that it must be a great temptation for one in a staff sergeant's position to be dishonest, the opportunities being so great. I hope that there are many like him throughout the Army Medical Department. Were the accounts in simpler form the number of clerks could be less, and it follows that then the expense of carrying out this department would be less.

With regard to my previous remarks upon trusting more fully the medical officers, I may add that there appears to me to be a general want in the Army Medical Department of trust. This leads to certain officers not trying to do their best. It is rather the practice, it seems to me, to do as little work as possible with the least amount of trouble, and to grumble when it is being done. Of course there are other reasons, but I feel confident that this want of trust is a great item for causing discontent—and rightly so, most of us will say. My acquaintance with army medical officers is limited, but for the greater part it has given me the idea that there should be an effort on the part of the authorities to improve this class of officer. Not only, as I have pointed out, do some require a better knowledge of medicine and surgery, but the old understanding of the term "an officer and a gentleman" should be encouraged again to come into existence in every case. It would be well, I feel sure, that the pay of medical officers should be increased that a better class of hospital students should more frequently decide to enter the army. Is not a qualified medical man with the power at once to earn an income, who enters the army in a much better position than the man who enters the army as a combatant officer, if both of them at the last moment decide not to become officers in His Majesty's army? Therefore the former's pay should be proportionately greater. He is rolling two professions into one. And it should be greater, more especially as the want of medical officers has been for some years past much felt by the authorities. Added to this want the desirability of improving the class of officers for the medical corps is now recognised. The senior medical officer, besides being

"reasonably perfect in his work," should also be a gentleman in the fullest sense of the word, and one that excels in managing his fellow-men. Such being the case there would be no fear that a principal medical officer, who has charge of a district, would be unsuitable for his post, considering that he is chosen from the number of senior medical officers.

THE REPORT ON ANÆSTHETICS ISSUED BY THE BRITISH MEDICAL ASSOCIATION AND "THE LANCET" CLINICAL REPORT ON ANÆSTHETICS.

I.

A BRIEF *résumé* of the first-named report has been already placed before the readers of THE LANCET.[1] We propose in the following remarks to deal more in detail with the facts presented by it and the conclusions advanced by the committee entrusted with its preparation. Its initiative, we are told,[2] was a discussion which dealt with the importance of a clinical investigation into the action of anæsthetics. Papers were read upon the occasion insisting upon the necessity for some collective investigation into the subject. This occurred in 1891, but we must go further back to trace the true sequence of events which led to this the most recent pronouncement upon the merits and dangers of anæsthetics. All those who have studied the history of the subject will recall the publication of Dr. Snow's work, "On Chloroform and other Anæsthetics."[3] In this most meritorious book are contained accounts of experiments upon the lower animals performed to elucidate the then practically unknown physiological action of anæsthetics as well as a careful collection of the cases of human beings to whom chloroform, ether, amylene, &c., had been administered. An attempt was further made by Dr. Snow to explain such accidents, whether fatal or not, as occurred to patients by reference to the experiments detailed. Dr. Snow also collected all the records of deaths procurable from the first use of general anæsthetics and commented with great acumen upon them. Thus both an experimental and a clinical record find a place in his pages. Wakley and others had investigated the physiological action of chloroform, but the first collective attempt to study the matter owed its origin to the Royal Medical and Chirurgical Society which published its report in 1864. The major part of this report was experimental, although appendices were added which besides giving a further list of deaths dealt also with the uses and effects of chloroform and the best modes of resuscitation. The report concludes by giving a number of rules to be adopted with the view of avoiding danger during the inhalation of chloroform. Various researches of an experimental character have been made since the publication of this report, but the most important, since they led to a further clinical investigation upon the matter, were the well-known Hyderabad Commissions appointed in 1888 and 1889. Sir (then Dr.) T. Lauder Brunton represented the Editors of THE LANCET in the Second Hyderabad Report and the results accruing from the large number of experiments made were published in THE LANCET.[4] Both of these reports were initiated through the enterprise of Lieutenant-Colonel Lawrie, I.M.S., and by the munificence of H.H. the Nizam of Hyderabad. At the conclusion, however, of this purely experimental research the importance of investigating from the clinical side became apparent and the Editors of THE LANCET thereupon appointed a Special Commissioner to draw up such a report and in 1893 published[5] what was the fullest and most important clinical inquiry into the action of chloroform and other anæsthetics upon human beings which had ever up to that time been undertaken. A comparison between this report and the one just issued by the British Medical Association cannot but prove advantageous, as the two, although prepared upon different lines and with different methods and from somewhat different material, present many points in common and cover much of the same ground.

[1] THE LANCET, Jan. 26th, 1901, p. 280.
[2] Brit. Med. Jour., vol. ii., 1891, pp. 1088, 1329.
[3] Churchill, 1858.
[4] THE LANCET, March 1st, 1890, p. 486.
[5] THE LANCET, March 18th, 1893, p. 629.

The first report (THE LANCET Chloroform report) based its conclusions upon (1) published records of deaths from 1847 to 1891 inclusive, a period of 44 years; and (2) answers to a circular letter inclosing forms for the guidance of correspondents engaged both in private and hospital practice. These were sent to all members of the medical profession in the United Kingdom and to leading surgeons abroad and in the colonies and the United States. The range of questions will be seen on reference to page 88 of the report. The British Medical Association report obtained its information from a very carefully drawn-up note-book which was sent to a number of hospitals, and contained, when returned to the committee, entries of all cases treated under anæsthetics in the hospitals during the year 1892-93. 136 of such report-books were returned with references to 25,920 cases. Although this report deals only with England and Scotland, and therefore does not correspond in scope with THE LANCET report, yet its figures and findings are sufficiently in harmony with the latter to render collation and comparison both simple and useful. We omit for the moment the appendices which deal *inter alia* with statistics of 1521 administrations of chloroform in India.

It strikes the student that the report is practically one dealing with chloroform and ether as administered in hospitals and by specialists in anæsthetics. The cases of nitrous oxide administration, although 2911 in number, present only slight departures from the normal in 25 cases and in only two of these instances called for remediable measures, and in none gave rise to anxiety. We cannot, however, admit that such figures can either prove the safety of, or indeed any noticeable facts about, an anæsthetic which must be used many thousands of times daily in the large towns of England alone. Forty-five anæsthetics, mixtures, and successions of anæsthetics are scheduled which besides nitrous oxide and that gas combined with oxygen (Nos. 28 and 29) represent (1) chloroform; (2) ether; (3) gas followed or mixed with the vapour of ether; (4) the A.C.E. mixture; (5) chloroform and ether in various proportions; and (6) successions of A.C.E., chloroform, and ether. The committee have further arranged the anæsthetics and mixtures into a chloroform group—i.e., those in which chloroform is the dominating factor—(1) chloroform; (4) A.C.E. mixture; (5) mixtures of chloroform and ether; (6) A.C.E. mixture followed by chloroform; (8) ether followed by chloroform; (14) chloroform followed by A.C.E. or a similar mixture—and an ether group, in which ether is the dominating constituent—viz., (2) ether; (3) gas followed by ether; (7) chloroform followed by ether; and (9) A.C.E. mixture followed by ether.

Two sets of environing circumstances possibly affecting the use of anæsthetics are considered, firstly, those such as age, sex, time of day and season of the year, the nature of the operation, with the antecedent condition of the patient; and, secondly, those which belong to the anæsthetic itself—e.g., whether ether or chloroform, or a mixture or succession was employed—the method adopted, the quantity used, and the duration of the administration.

With regard to sex and age, when all anæsthetics are considered together, the death-rate is unfavourable to males in the proportion of 20 to 9. This represents a death-rate of chloroform and ether and their mixtures and successions, the nitrous oxide group being omitted for reasons stated above. Women are less prone to danger under chloroform than are men (British Medical Association report) as 2 to 7 and to death as 1 to 3 (THE LANCET report, 8 to 23). Under ether the danger-rate is (British Medical Association report) as 4 to 3; the death-rate being equal. In must be noted in this connexion that three of the four ether deaths (Nos. 723 to 726) were in persons in an extremely precarious state, and, as the British Medical Association report shows later, in such cases the death-rate under chloroform and ether tends to equalise. In other words, the factor tending to danger in such deaths is the condition of the patient rather than the anæsthetic. In the other case the operation seems to have caused the death, as there were no signs of anæsthetic toxæmia. In THE LANCET report the deaths recorded under ether were as 5 to 6, being slightly more favourable to the females than the British Medical Association statistics. However, there is reason to believe that in THE LANCET report gas and ether cases were placed with those belonging to the ether group in all cases in which the dangerous symptoms actually occurred when the patient was under ether narcosis. If, therefore, we associate the British

Medical Association ether and ether and gas cases together we find a death-rate of three females to two males, while the danger-rate is as 3 to 2—a very striking comparison.

The age sections of the two reports are also of singular interest when placed side by side. In THE LANCET report dealing with chloroform, taking for the sake of comparison the first five years' deaths, in the male column as unity, we have the following table :—

—	Males.	Females.
From 1 to 5 years	1·0	0·28
„ 6 „ 10 „	2 71	0 71
„ 11 „ 15 „	2·14	0·85
„ 21 „ 25 „	3·7	2 14
„ 26 „ 30 „	3·14	0·85
„ 31 „ 35 „	2·42	1·14
„ 36 „ 40 „	2·42	1·0
„ 41 „ 45 „	4·57	1·57
„ 46 „ 50 „	4 57	1·28
„ 51 „ 55 „	1·95	0·42
„ 56 „ 60 „	3·42	1·0
„ 71 „ 75 „	0·29	0 1

This shows in the case of males an increased mortality-rate from one year to 25 years, then a decline to 35 years, and an increase to the maximum between 41 and 50 years. Between 51 and 55 years there is a marked fall. In females the maximum is reached between 21 and 25 years, the next highest rate occurring between 41 and 45 years, a period somewhat earlier than the male maximum. No tables giving death-rates as regards the sexes are given in the British Medical Association report as only 16 deaths due wholly to the anæsthetic are recorded, but the danger-rate which includes deaths and cases of grave danger is given below.

British Medical Association Report (Danger-rate) taken rate between One Year and Five Years as Unity.

Years.	Both Sexes.	Years.	Both Sexes.
From 5 to 15 years ...	2·06	From 41 to 50 years ...	1·12
„ 21 „ 30 „ ...	0·68	„ 51 „ 60 „ ...	0·62
„ 31 „ 40 „ ...	1 06		

The danger-rate between one year and five years is in the British Medical Association report extremely high, although the death-rate is 0·125 of the total.

Under ether the average age at death of males is 46 years (THE LANCET) and of females 40 years. Half of the male deaths took place between 45 and 55 years of age and most of the female deaths between 40 and 50 years. The percentage danger-rate (British Medical Association) for both sexes is highest between 50 and 60 years and next between 60 and 70 years. From 0 to 10 years it is *nil*, as it is also between 40 and 50 and after 70 years. However, it must be borne in mind that the danger-rate under gas and ether was highest between 20 and 30 years and that the deaths reported under these anæsthetics are only six, and of these, when the detailed reports are read, we find strong presumptive evidence against the anæsthetic *per se* having been the cause of death.

The conclusions on p. 72 (British Medical Association report) are noteworthy as they contradict the commonly stated fact that young children take chloroform almost with impunity. From one month to one year, from five years to 10, and after 30 years the percentage death- or danger-rate is above unity and below unity in the intermediate ages; the highest occurred between 70 and 80 years and the next between 40 and 50 years, which in the last period corresponds closely with THE LANCET report. The report adds: "It is remarkable that out of 36 administrations to children under one month there were three cases of danger."

The sections dealing with the effects produced by the season of the year and the hour of the day or night need not detain us. Unless special notes are made upon such subjects they escape the casual observer. Obviously the danger-rate as such depends upon other than diurnal or meteorological conditions. It is to be expected that dangers which arise in the night would under chloroform be due in many cases to the absence of an experienced chloroformist or other adventitious circumstances. It is, however, a matter of regret that there is no trustworthy information as to the incidence of such after-effects as bronchitis, pneumonia, shock, and collapse, during the warm and cold weather, and during the hours of maximum and minimum vitality.

The importance of the general condition of the patient at the time he has to take an anæsthetic is obvious, but it probably has less actual bearing upon either the danger- or death-rates of individual anæsthetics than would be suggested upon *a priori* grounds. In the first place, the patient whose condition is serious requires more care in the preliminary examination, and the choice of the anæsthetic is necessarily made with more judgment and after greater thought than can be expended in ordinary cases, as such persons are placed in the hands of the most experienced anæsthetist available and every precaution is taken. It is shown in the report before us that, whereas chloroform presents both a higher danger- and death-rate for the average man, woman, and child than do other anæsthetics, yet in proportion as the gravity of the physical condition of the patient increases, so, too, do the danger- and death-rates of various anæsthetics tend to become equalised. There are, however, special conditions which seem more dangerous when special anæsthetics are employed, and there are certain conditions which certainly increase the peril of taking any anæsthetic. In the three classes described in the British Medical Association report as "good," "not good," and "bad," complications under all anæsthetics taken together occurred least frequently in the first and most frequently in the second; while the danger-rate (including the deaths) was highest in the third and lowest in the first. For chloroform alone the same figures hold good, but in the case of ether, although the danger-rate agrees with the above, the difference between the second and third classes is less marked. Gas and ether follows the figures of all anæsthetics. When these three anæsthetics are compared we find that the "danger-rate" is slightly higher in the case of ether and six times higher in that of chloroform when compared with "gas and ether." A danger case was reported once in every 133 chloroform administrations, once in every 654 ether administrations, and once in every 834 "gas and ether" administrations when the persons taking the anæsthetic were in "good" condition. And this holds true in the "chloroform" and "ether" groups. This inequality between chloroform and ether is less marked in the second class and least in the third class—viz., 1·9 to 1·4 and 4·0 to 3·7 respectively.

When we pass to special diseases, or to the "pathological states," as they are termed in the British Medical Association report, we are again able to contrast the facts given with those furnished by THE LANCET report. Alcoholism was pointed out in THE LANCET report as one of the dangerous and frequent predisposing causes of accidents under chloroform, and in the details of the necropsies many of the lesions recorded are those found associated with chronic alcoholic poisoning. An inspection of the tables of deaths, pp. 104 to 164, where in column 8 the necropsies appear, reveals the large number of cases in which more or less evidence of alcoholism was shown among the fatal cases. This arrangement is also followed in the British Medical Association report on pp. 58 to 63. In this last-named report we find (p. 80) that alcoholism increased the danger-rate under all anæsthetics sixfold as well as increasing the complication-rate to nearly the same extent. Under chloroform the danger-rate was increased eight times. In the ether cases, although the complication-rate was triplicated, there was no instance of danger. Emphysema was pointed out in THE LANCET report to be, next to alcoholism, one of the most frequent predisposing causes of death, and the figures in the British Medical Association report agree except that they indicate this condition to be the most dangerous of all. Shock and collapse, affections of the heart, empyema, bronchitis, and anæmia are all mentioned as having been associated with a high danger-rate. It is also noticeable that when complications arose in the case of patients who suffered from any of these conditions they were usually associated with danger. Vomiting during anæsthesia is in both reports stated upon clear evidence to be commonly the cause of considerable danger. In the section (p. 103) dealing with "Phenomena of Anæsthesia" we find it stated: "The figures, indeed, are so striking as to suggest that the phenomenon" (i.e., vomiting and retching) "bears a causal relation to the onset of complications." There, however, seems to have been no special report offered as to the

dangers of anæsthetics in the case of persons who were vomiting as the result of disease before the administration of the anæsthetic. This point was investigated in THE LANCET report and the conclusion given was that such cases were peculiarly dangerous. It will be convenient, however, to defer more detailed examination of the matter to a later portion of this review.

When we come to the sections referring to operations we find more divergence between the reports under consideration than has hitherto revealed itself. In THE LANCET report the operations most attended with deaths are given in the order of danger for chloroform—extraction of teeth, reduction of dislocations, excision of joints, operations on bones, amputation of fingers, for fistula in ano, ablation of the eyeball, operations on the breast, and removal of the tongue. With the exception of the dental cases the operations named were mostly undertaken in hospital and the frequency of a fatal result really is a factitious one, as the figures bear a due proportion to the number of the operations of the nature actually performed. When viewed in this way the numbers only record what may be called the usual percentage of death-rate under chloroform for the operations in question. The British Medical Association report (p. 87), however, gives the following order of danger: major amputations and excisions, operations for ruptured perineum, excision of the eyeball, operations on the pleura and lung, abdominal sections and those upon the upper air-passages; circumcisions also showed an increased danger-rate. The absence of statistics concerning teeth extractions under chloroform is no doubt accounted for by the fact that at most hospitals gas is used for such cases, and it was chiefly from hospital statistics that the British Medical Association Committee compiled their report. Under ether the highest danger-rate was in the case of operations for strangulated hernia, and its extreme danger in such cases is borne out by collation of the two reports. It must be pointed out, however, that if the individual cases are studied it will be seen that in many instances the patients were *in extremis* at the time of the operation, and for this reason ether was the anæsthetic selected. Death seems in these cases to have arisen not from an overdose of ether but from the aspiration of stercoraceous vomit into the air-passages. We regret that we have not space to give the cases recorded of this condition in the two reports as they are very striking. The British Medical Association Committee are, however, inclined to regard chloroform as the safer anæsthetic in operations for strangulated hernia since there is a low danger-rate for this anæsthetic, most of the dangerous cases having been reported as occurring under ether. The evidence advanced, however, is not sufficient, we think, to prove this, however much the members of the committee as experts may, by reading into the report their personal experience, be inclined to the view cited above. In the two cases of death where ether was used, out of 34 cases of complication, one patient was *in extremis* and the other died two hours after the operation, and in both stercoraceous vomit was found post mortem in the air-passages. It is difficult to see why these cases were classed as deaths from ether, as probably both patients would have succumbed whatever anæsthetic had been administered (see p. 61, Cases 723, 724). The figures, we think, show that the probability is that an operation as such does not play a very important part in the mechanism of deaths under anæsthetics. In such heroic measures as must be adopted in some cases of abdominal sections, amputations and when a large quantity of blood is lost the anæsthetic may play a part in so far as it produces shock, promotes hæmorrhage, lowers the body temperature, or interferes with respiration or circulation. We should be inclined to say that on such occasions the important point was *how* the anæsthetic was given rather than what anæsthetic was chosen, that is, provided no special antecedent bodily condition of the patient demanded avoidance or selection of a special anæsthetic.

(To be concluded.)

PREVENTION OF CONSUMPTION.—Under the auspices of the Gloucestershire, Somerset, and Wilts Branch of the National Association for the Prevention of Consumption and other Forms of Tuberculosis a public meeting was held at the town-hall, Bradford-on-Avon, on March 11th, under the presidency of Mr. John Fuller, M.P. An interesting address was given by Dr. Lionel A. Weatherly and a resolution in favour of the proposed sanatorium at Winsley was passed.

THE ROYAL COMMISSION ON SOUTH AFRICAN HOSPITALS.

(Continued from p. 888.)

VI.

SPEAKING generally, we quite agree with the remarks and recommendations of the Commissioners under the head of "Sanitation" and as to the appointment of sanitary officers for all towns and camps. As everybody knows, the lamentable experience obtained during the Crimean war was followed in Lord Herbert's time by energetic movement in the direction of army sanitation in both peace and war, and in the appointment during the latter of a duly qualified officer armed with the requisite power to act as a sanitary officer on field service. Such an appointment was always made until Lord Wolseley was presumably instrumental in abolishing it by declaring that a sanitary officer was practically useless on a campaign. We quite agree with the Commissioners, however, and with Sir William Thomson's and Dr. G. Turner's evidence (pages 358 and 395 minutes). There should be a sanitary officer-in-chief on every big military expedition possessed of large experience and high rank who should be charged with the general direction of sanitation of the army in the field and who should also be in the confidence of both the general commanding and the principal medical officer. Although it is quite true that principal medical officers of divisions and of army hospitals act as sanitary officers, and that medical officers generally are well instructed in army hygiene and should one and all be held responsible for any neglect in this respect within their respective spheres of duty, still it should certainly be the special duty of some one officer to have the general direction. He should, as far as possible, inspect, report, and advise as to everything appertaining to the sanitation of troops in the field. While everyone must recognise the great importance of army sanitation we are, nevertheless, bound to say that the conditions of war are altogether different from those of civil life. This is a point, however, which is not sufficiently realised by the public. Let the occurrences described by Dr. W. Johnson (9584, 9586, and 9588, Minutes) be taken in illustration of what happens in war. It is not so much the want of knowledge as the difficulty or impracticability of applying it in war that is the obstacle to be overcome.

We have no desire whatever to shelter ourselves behind platitudinous generalisations, but the matter has, unfortunately, to be looked at from a concrete and practical and not from an abstract point of view. We have only to turn to the war news of late and the forced marches in pursuit of the Boers, for example, to see how little chance there is for the application of practical hygiene. If a foe gave some intimation of his intended movements and did not begin his fighting until both sides were ready the matter would obviously be materially simplified, but it need scarcely be said that this is never the case. Time is a necessary element in carrying out even the simplest and best-devised sanitary arrangements. In the case of sieges, in permanent or temporary camps, and in the case of captured or occupied towns there is usually no excuse for neglect or carelessness; but even in such cases the practical application of elementary sanitary principles pre-supposes, not only the presence of competent advisers to point out what has to be done, but of a properly organised executive of sanitary engineers and workmen with all necessary appliances—down to carts, picks, and shovels—to do it. Camp conservancy and latrine systems, camp cleanliness generally, drainage, water-supply, disinfecting processes, a sanitary police system, and so forth, have all to be attended to, and very promptly, if they are to be efficacious in preventing or limiting the spread of disease. A sanitary department, with its directing heads and subordinate staff and a body of navvies, would prove an effective agency in time of war, but if not sufficiently trained to arms to fight and protect themselves in case of attack they would have to be protected by troops. Soldiers can fulfil both functions; only as a matter of fact the presence and aid of troops in carrying out sanitary work cannot always be had when needed or relied upon for various reasons. Again, where the movements of a force are rapid and changes of position are unexpected, and when troops have to fight, to

capture, and to occupy some position, they must for the moment take what they find there; and if there happen to be contaminated water and foul and infected soil mischief is soon done the results of which are bound to follow and unfold themselves with the regularity of clock-work. The necessary precautions are not, perhaps, or from the nature of the case cannot be, taken in time; indeed, to prove efficacious they would often need to have been taken in advance of the arrival of the troops. So that although it may be true that enteric fever is a "preventable" disease the term "preventable" is apt under such circumstances to be a very misleading one. Notwithstanding that it may be common knowledge that enteric fever is endemic in a country which is the seat of war, the knowledge is of little avail unless the time of its incidence with epidemic force and the locality are also known. The choice of sites for encamping troops is a matter of vital importance, and so is the periodical and frequent changing of camp sites. This latter is not sufficiently laid down in text-books on army hygiene, and it is difficult, perhaps, to formulate any precise rule generally applicable, but it is a really important point. Wherever any disease, and especially any epidemic disease, is prevalent, the rule should be to change the site as soon as possible. It is, of course, deplorable that such a case should occur as that of the 2nd Worcesters related by Mr. Burdett-Coutts (page 47 of "The Sick and Wounded"), and the troops should also be safeguarded, as far as possible, against such evils as those described by Dr. G Turner in his evidence already referred to. It is needless to add that we fully concur in Dr. Turner's recommendations.

We now proceed to Part III. of the Commissioners' report dealing in detail with the care of the sick and wounded in various places during the campaign in South Africa. This section comprises the pursuit of General Cronje and the surrender of his force at Paardeberg, the occupying of Bloemfontein, and the advance of the British forces to Pretoria, the capital of the Transvaal. We are not going to describe the dramatic course of events comprised in this most successful portion of the campaign, following so closely upon the dark and gloomy occurrences which had preceded it. From a military standpoint it was a glorious but terribly trying time for the troops.

In this portion of the report the Commissioners have to deal with the most difficult and controversial part of their inquiry, for it includes that period of the medical history of the war about which public feeling was most deeply stirred. On the publication of Mr. Burdett-Coutts's letter in the *Times* of June 27th, 1900, it was only to be expected that anxious inquiries would be made on all sides as to the truth or otherwise of the allegations set forth with so much realistic detail and suggestiveness. The real gravamen of that letter, as we said at the time, lay not so much in the statement that deplorable scenes and occurrences had taken place as in the deliberate statement that they arose from causes which might have been foreseen and prevented. The letter appeared, too, at a time when all in this country were full of gratitude and admiration for the noble work which had been done by the medical service in the field and when there was so much in other directions to cause grief on account of the losses that had been sustained and to give rise to dismal forebodings in the faint-hearted. For let it be borne in mind that the medical service, according to the testimony of all, expert and otherwise, except those crude and carping critics who are always lynx-eyed to discover defects and colour-blind to all else, had done its work most successfully. Up to, and even after, the time that Sir William Mac Cormac and Mr. Treves left South Africa the medical arrangements were excellent—they had never been better, if so good. If we may say so without impertinence to these gentlemen, their reports gave an absolutely truthful record of what had been and was being done. The most serious strain was, however, still to come. The army of the Natal command had fought its battles and suffered severe losses, but its health was fairly good. It was fighting on healthy soil and contiguous to a railway, and if it had but a relatively scant amount of wheeled and other transport it still had a sufficient amount to meet all its urgent requirements. Up to a certain point it had, too, a large and devoted as well as most efficient body of Indian dhoolie-bearers at its service The same may be said generally of Lord Roberts's force up to the time it reached the Modder. Then came the march to Kimberley, the surrender of Cronje, the occupation of Paardeberg, with the fouled river Modder and the offensive laager, the subsequent occurrence of enteric fever, the march to Bloemfontein, and the capture of the waterworks by the Boers on April 3rd, 1900, with a renewed infection of the troops the results of which were to manifest themselves in due season and in chronological sequence. The army after leaving Kimberley, being diverted from its direct course by the Cronje episode, had soon to relinquish the use of the stationary hospitals and railway to its rear. The line of communications behind Lord Roberts's advance became cut and interrupted by the enemy, and he was soon to find himself and his force in a very analogous position to that of the army of General Sherman when that general made his celebrated march and thereby helped so materially to bring the great American war to an end.

It is well to epitomise the facts because in any attempted examination, analysis, and consideration of the report with its accompanying minutes of evidence and appendices, together with the publications which have preceded and followed these, the reader will soon find himself in a maze of entanglement with little or no clue to guide him and amidst plenty of pitfalls for the footsteps of the unwary. If at one moment he thinks that he has some firm foothold of fact as stated at one place he will find that this is somewhere else contradicted or susceptible of some easy explanation which robs it of its significance. After much labour perhaps in following out what seems to be here and there a clue he will give it up because of its being found on examination to be based on illusory, sensational, or insufficiently precise evidence. To take an illustrative example, let the reader turn to Mr. Murray Guthrie's evidence at page 67 of the minutes of evidence and compare it with that of Superintendent Nursing Sister Holland (page 267 *et seq.*), with that of Surgeon-General Wilson (10,894, 10,896, 11,009, 11,026), with that of Lieutenant-Colonel W. L. Gubbins (pages 387 *et seq.* of Minutes), and with pages 42–43 of the Commissioners' report. We feel bound to say that the Commissioners appear to have spared neither labour nor pains in trying to investigate all the charges that have been brought against the hospitals in South Africa. They have shown, at any rate, that several of them were not proved, or were exaggerated if not altogether groundless.

The emphasis which we have laid in THE LANCET on transport as one of the prime factors in warfare is fully justified. Transport is a word which crops up everywhere in the pages of the report. A fatigued and half-starved army of exhausted men and horses arrived at Bloemfontein on March 13th, 1900, where, to add to the evils, the waterworks were, as we have said, captured by the enemy and the force found itself dependent for its supplies of food, forage, and ammunition on a single and precarious line of railway. Enteric fever, the seeds of which were apparently first sown at the Modder river, was already prevalent in the British force as it had been among the Boers at Paardeberg, and culminated in a sudden and widespread epidemic. That was the position. Mr. Burdett-Coutts thought that if the trucks of one day's trains had been devoted to the transport of hospital supplies during the stay of the troops at Bloemfontein the situation would have been saved (page 64, "The Sick and Wounded in South Africa"). He seems to have been reticent in those quarters where his representations would have been likely to be effective and not quite able to view the situation as a whole. An army must have food and ammunition and transport to supply them, or the safety of the whole force, healthy as well as sick, will be jeopardised. Lord Roberts's army was, for the time being, cut off—"in the air," as it is said—and supplies had to be obtained in the first instance to meet immediate necessities and in the next to ensure a fresh movement. No one seeks to shelter himself from adverse criticism under cover of Lord Roberts's authority, but had the forced marches and the unforeseen and unexpected movements of his army not taken place there would have been more transport by rail and otherwise at command, more time to make arrangements for getting up and opening out and equipping hospitals, and sacrifices of suffering and life need not have taken place. But in that case the army might not have arrived at Bloemfontein, and subsequently at Pretoria, when it did. If the reader turns to the military despatches of Lord Roberts—which were written without any reference to the medical service—published in the *London Gazette* of Feb. 8th last he will find a strong sidelight reflected on the extreme difficulties of the position, more especially in regard to transport. The exhaustion of troops and horses, the difficulties as to feeding the force, the destruction of the bridges over the Orange river are all described. In his

eighth despatch he dwells on the magnitude of the task that Her Majesty's troops had to perform where the area included in the theatre of war covered 458,030 square miles, while the distance which the troops had to travel by land was proportionately enormous. Regarded from such a point of view the responsibility was that of the Field Marshal and his staff, and, what is more, they were, as it seems to us, fully justified under the circumstances in incurring it. It was no doubt Lord Roberts's recognition of this fact and of the soundness and strength of the reasons which impelled him to act as he did that led him to ask for a small body of common-sense business-like men to be sent out to investigate the circumstances. For our part we almost wonder, if he were fully satisfied, as he emphatically said he was, with the efforts made by the medical officers, that he did not at once assume the whole responsibility of the situation. We do not say that there were no shortcomings, no serious defects or errors of administration, no wasted and misapplied energy on the part of the medical service. The report proves that there were. But it is so easy to be wise after the event. The provision of a general hospital at Orange river would have been of great service, for instance, could the movements have been foreseen.

We are not impugning Mr. Burdett-Coutts's motives. He seems to have acted under an imperative sense of public duty. Still, as we have said, the course that he took does not commend itself to our mind. It seems to us that in view of the great and widespread pain and sorrow that would inevitably follow the publication of his letter recourse should not have been had to that measure until remedy seemed to him hopeless in any other way. Every effort might first have been made to help those directly and officially concerned to set aright what had gone wrong. No one has a right to consider that he monopolises the feelings of pity and of humanity. But having arrived at the conclusion that as a matter of humanity it was his bounden duty to write to the public press it seems to us that he might have protested as emphatically as he liked against what he considered to be wrong without entering into all the harrowing details he did. Moreover, if our readers will turn to Lord Kitchener's evidence (13,354–55–56), Lord Stanley's evidence (12,741), and Surgeon-General Wilson's evidence (pages 320 and 321, paragraphs 11,004 to 11,009) they will see that Mr. Burdett-Coutts did not always take advantage of his opportunities for representing matters in the proper quarters, while his warmth of advocacy in the House of Commons of the cause which he had taken up led him into a somewhat grievous inaccuracy of statement. Surgeon-General Wilson says: "I see that Mr. Burdett-Coutts in the House of Commons mentioned my name personally, and he said he told me of the condition of things at Bloemfontein over and over again. I see in his evidence before you, my lord, he admitted he did not. I can fill up the rest of it by saying he absolutely never did mention anything to me over and over again; he never mentioned it once." What is more, Surgeon-General Wilson adds that, although he saw Mr. Burdett-Coutts constantly, he never made any complaint to him.

We did not hesitate from the first to admit the substratum of fact in the picture which Mr. Burdett-Coutts drew in his letter to the *Times*. Stripped of its word-painting there was at least sufficient evidence to show that at one time the accommodation for the sick and wounded at Bloemfontein was quite inadequate to the occasion, that hospitals were terribly overcrowded and badly provided, that there was a state of stress and strain, and that a good deal of suffering attributable to these and other causes was entailed upon a large and rapidly augmenting number of sick mainly owing to a very severe outbreak of enteric fever on a scale the dimensions of which had not been foreseen. We think it must be admitted that his allegations in these respects, after setting aside all disproved, unproved, or exaggerated statements and embellishments, have been corroborated. The picture presented to us by Mr. Burdett-Coutts is that of a deplorably bad condition of the sufferers from enteric fever closely packed together and without some of the most elementary necessaries. He rightly complains of the want of medical attendance and nurses. Under such conditions as these, however, it seems superfluous to inquire whether there was any want of medical men, nurses, and orderlies. If any number of these could have been "wafted" from England or elsewhere to the spot they would only at the moment have been a source of embarrassment instead of help to the whole force, for they must themselves have been fed and lodged somewhere and somehow to have been of any use to the sick. Mr. Burdett-Coutts disclaims the intention of making any reflection upon the *personnel* of the Royal Army Medical Corps. He may even have eulogised their work, but the whole tenour of what he has said and written seems to us to be to exalt the work performed in the hospitals maintained by private bounty at the expense of the military institutions and their medical staff. He is entitled, of course, to hold and to express any opinion that he likes, but he cannot blow hot and cold at the same time, nor is he fairly entitled to draw calumnious generalisations from isolated instances.

THE BARBERS' COMPANY.

PRESENTATION OF THE HON. FREEDOM TO THE PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ON Tuesday last Sir W. Mac Cormac, Bart., K.C.V.O., President of the Royal College of Surgeons of England, was presented at Barbers' Hall with the Hon. Freedom of the Barbers' Company. Speaking at the banquet which followed the proceedings Sir W. MAC CORMAC said:—

I should, Mr. Master and Wardens, first like to express to you and to this venerable company my sincere appreciation of the distinction conferred upon me to-day of its honorary freedom and the pleasure it has afforded me to receive it. The Guild of Barbers is of such ancient foundation that its earliest records can no longer be traced. It may, at all events, be assigned an origin as early as the thirteenth century, and before its final development into a trade guild it was partly religious in character and partly social. The barbers used to assist the monks to perform operations, but after the edict of Tours in 1163 forbade the priests to shed blood it is probable that the barbers assumed a much larger share of surgical work and performed all the minor operations, and in those days there were few besides.

In 1462, the first year of the reign of King Edward IV., the Barbers obtained a charter of incorporation and became a City Company, "the better to protect the King's lieges from going the way of all flesh through the ignorance and negligence of various unskilful Barbers and other practitioners in surgery." In 1530 the Company drew up ordinances for the better government of its members, a document of much historic interest, as it is signed by Sir Thomas More, then Lord Chancellor of England. There was also from remote time a "Surgeons' Guild," small in number, poor, called a "Fraternity" and chiefly consisting of military surgeons. The surgeons became merged in the Barbers' Company in 1540 and remained members of a united company for 200 years until they finally separated in 1745 and were constituted a Company of Surgeons, a movement attended by many quarrels. From this body was evolved the present Royal College of Surgeons of England which became incorporated on March 22nd, 1800, and, as many of you know, the Royal College celebrated the centenary of its foundation last year. It is interesting to find that in France very similar conditions obtained. There were in Paris during the fourteenth, fifteenth, and sixteenth centuries three kinds of medical practitioners—a corporation of physicians, a confraternity of surgeons founded in the thirteenth century, and a company of barber-surgeons—and these three bodies were engaged in almost perpetual strife for their respective privileges. About the year 1400 it is said that there were in Paris 31 physicians of the faculty, 10 master surgeons of the fraternity of Surgeons, and about 50 barber-surgeons. The barbers continued separate until 1505 when they became barber-surgeons and formed a numerous and powerful body, especially a little earlier when Ollivier le Dain was barber-surgeon to Louis XI. and had the ear of the king.

Ambroise Paré, who was surgeon in succession to five French monarchs—Henri II., Francis II., Charles IX., Henri III., and Henri of Navarre—was a barber-surgeon from 1541 to 1544, and took a prominent part in these quarrels; afterwards he was admitted to the fraternity of St. Come, which consisted of the Master Surgeons, closely corresponding to our Company of Surgeons. It is interesting to note that Paré when he was 65 years old dedicated his great surgery to the king, and he there tells us that "he had laboured 40 years to bring his art

to perfection and striven so hard to attain his end that the ancients have nought wherein to excel us, and posterity will not be able to surpass us." It is extraordinary that this boast of attained perfection made more than 300 years ago had remained largely true until the latter half of the nineteenth century witnessed the transformation of surgery. This assertion of perfection has been made with curious frequency by surgeons. The celebrated French surgeon, Baron Boyer, who was also at one time a barber-surgeon, says in the preface to his great work on Surgery published in 1814 that surgery had made the greatest progress and had arrived at the highest degree of perfection of which it was susceptible. Sir John Erichsen and others have in their time said much the same thing.

In 1655 the French Master Surgeons petitioned to be allowed to join the Company of Barber-Surgeons—about 100 years later than their English *confrères* who became a united company in 1540, and they so continued till 1745, when they separated in the same year that witnessed the dissociation of the surgeons and barbers in England. The quarrels between the barbers and surgeons are now ancient history; any ill-feeling has long since disappeared, and I think I may assume that the honorary freedom which you have bestowed upon me symbolises a friendly reunion. There is no doubt that the election to-day of the President of the Royal College of Surgeons of England to the honorary freedom of the Barbers' Company constitutes the first official link between the two societies since their separation more than 150 years ago, and one must go still further back to a period antecedent to 1540, when the barbers and surgeons were still separate bodies, for the possible occurrence of a member of the old fraternity of surgeons being elected a freeman or an honorary freeman of the Guild of Barbers. There is a record of a surgeon, one Master Johēs de Suthwerk (John of Southwark), being given the ordinary freedom of the Guild of Barbers in 1312 in the fifth year of the reign of King Edward II., a body amongst whom there were practitioners of surgery, but no honorary freedom has been conferred upon any one since the separation in 1745, nor, indeed, since 1663. In that year James, Duke of Monmouth, a natural son of Charles II., Alexander Lord Leven, Richard Hopton, and Thomas Rosse, Esquires, received the honorary freedom, but apparently no surgeons. The only other honorary freemen were Henry Nevill Lord Bergavenny in 1584 and Thomas Lord Windsor in 1631.

Your history can point to many famous surgeons, no fewer than 19 of them having been serjeant-surgeons to the king or queen. William Hobbes, a member of the Company, appears to have been appointed the first serjeant-surgeon in 1461. Thomas Vicary, born between 1490 and 1500, whose portrait we see in the first kneeling figure on the king's left hand in Holbein's picture, was granted the office in 1530. Richard Ferris, a very notable man, was appointed serjeant-surgeon to Queen Elizabeth in 1562 and afterwards to Edward VI. He tried to make surgery a profession and thought surgeons should know physic. Thomas Gale, surgeon to Elizabeth, born in 1507, was twice Master of the Barber Surgeons. He served in the army of Henry VIII. and was present with Philip II. of Spain at the battle of St. Quentin in 1557. He was a contemporary of Ambroise Paré who was also present at this battle, where he occupied himself in repairing the damage done by the English soldiers. William Clowes the elder, born in 1540, was surgeon to Queen Elizabeth and served against the Spanish Armada in 1588. He was a warden of this Company and a surgeon to St. Bartholomew's Hospital. He saw active service during many years both in the army and the navy. His published works are written in vigorous English and are the best surgical treatises of the Elizabethan time. He was very outspoken, and this got him into trouble, as is more than once recorded in the annals of the Company. On one occasion the strife of words between George Baker and William Clowes ended, we are told, in a "fight in the fields." Baker afterwards became serjeant-surgeon to Queen Elizabeth and was Master of the Company in 1597. William Clowes the younger was serjeant-surgeon to Charles I. He was not quite so great a man as his father. In 1625 we find a long letter from him asserting his rights in the Company and declining to act as renter warden since he "must not so poorly value the King his Master but expect from the Company as good a respect as any Serjeant Surgeon heretofore." Halle, Banester, and Reid were well-known Elizabethan surgeons, and Woodall and Wiseman followed them during the Stuart period and the Commonwealth. All were men who had seen much service in the wars and occupied very high places in their profession. Their biography can scarcely be told now, but much of interest is related of them, and they helped in their day to raise the dignity and importance of their calling and the prestige of the Company.

Your records abound in matters of interest which Mr. Sidney Young, your most able historian, has compiled with loving care. In the archives preserved at Guildhall the barbers are admonished not to advertise improperly, and not to expose blood in their windows, but to have it privately carried to the Thames. The barbers rightly claim to have been the first of the city companies to give technical instruction in their craft by anatomical lectures and demonstrations. The attendance on these lectures was compulsory and they were for long given in the theatre built by Inigo Jones and depicted in one of Hogarth's telling pictures. The subject matter was found in the bodies of persons executed at Tyburn or elsewhere, the company having the right to claim four in each year. Upon the beadles devolved the unpleasant and sometimes dangerous task of bringing the dead bodies to the hall. There was generally an ample material to choose from, and when the selection had been made the body was placed in a coach and carried off. Not infrequently the hangman, who had vested interests of his own, or the relatives of the persons executed, or the mob, protested with violence, maltreated the beadles, and rescued the body. In the annals for 1555 it may be seen that the doctor appointed for the "anathomye" was provided with a mat to guard against cold in the feet, two fine white rods with which to touch the body, and a wax candle to look into it; also an apron and sleeves both white and clean. Nevertheless, in 1631 it is recorded that great annoyance was caused to the dresser-boards and utensils in the upper kitchen by reason of the blood, filth, and entrails of the "anathomies," and another room was built in order to preserve the kitchen to its proper use. I believe we sit at our banquet to-night around the old dissecting-room table.

Two apparently authentic instances are mentioned in the records of the resuscitation of executed criminals. One was on Feb. 20th, 1567, "when a strange thing happened to a man hanged for felony at St. Thomas Wateringe. The surgeons begged to have him for an anathomye. He was stripped, hid in a chest, thrown in a carre, and so brought from Southwark over the bridge to Chirurgeons' Hall near Cripplegate. The chest being opened, the weather extreme cold, he was found to be alive and lived to the 23rd of February." The other instance was that of William Duell, a youth of 16, who was hanged at Tyburn on Nov. 23rd, 1740, "where, having hung for some time, he was cutt down and brought to the Company's Hall for dissection. He had not been there five minutes before life appeared in him, and in less than two hours he sat up and drank some warm wine." He was conveyed back to Newgate where he recovered completely and was afterwards transported for life.

In the sixteenth and seventeenth centuries the physicians and also the bishops challenged the privileges of the Company, but in the end without much success. The Company maintained their rights and haled offenders before them. In 1616 an amusing account is given of the behaviour of a John Walgrave before the court. He said he had "the authority the Archbishop of Canterbury and Bishop of London to practise, and was an antienter Surgeon than anie of them." He defied the court and made many untimely and irreverent speeches. About 1684 the surgeons in the Company began to seek for separation, the barbers protested against the undue influence exercised by the surgeons, and the matter was referred to the law. The feud continued, and the final separation took place in 1745.

I would say, in conclusion, that the Master and Wardens of this Company were good enough to lend some of their ancient and valuable plate to the Royal College of Surgeons of England on the occasion of the centenary. It was a graceful act on their part which was much appreciated by the College, and perhaps this incident may have suggested to your Master the compliment he has with so much good spirit and good taste bestowed on me to-night. Old associations, like old books, old friends, and old wines, are oftentimes of the best, and it was a happy thought of your Master to revive them. Master, Wardens, and Members of this ancient Company, I tender to you once again my cordial thanks and grateful appreciation.

In replying to the toast of "The Bench and the Bar"

Sir Edward Clarke, while in no way modifying his previous utterances, declared himself to be now at one with the Government in their South African policy, the Boers having rejected fair and generous terms.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

THE ADDRESS TO THE KING.

THE following is the text of the address of loyalty and condolence presented on March 20th by the Royal College of Physicians of London to His Majesty the King:—

"*To His Most Excellent Majesty, Edward, by the Grace of God of Great Britain and Ireland King, Defender of the Faith, Emperor of India.*

"The humble address of the Royal College of Physicians of London.

"May it please your Majesty:

"We, your Majesty's dutiful and loyal subjects, the President and Fellows of the Royal College of Physicians of London, humbly approach your Majesty, assuring your Majesty how deeply we share in the profound sorrow which has overshadowed every part of your dominions, through the death of our revered sovereign Lady Queen Victoria, and praying to be allowed to offer your Majesty, your Royal Consort, and all the Members of your Family our heartfelt sympathy in this your sad bereavement.

"We commemorate, gratefully and reverently, the lofty character of our late Sovereign, the virtues which distinguished her life in all its relations, public and private; her self-sacrificing devotion to duty and to all that might promote the welfare of her subjects, and her large-hearted sympathies which won her, in an unexampled degree, the love of her people.

"But while we lament the irreparable loss which the nation has sustained we are deeply sensible of the good Providence of God which has preserved your Majesty, through many years and many perils, to ascend the throne of your illustrious ancestors, with a knowledge and experience of public affairs and of all classes of your subjects which cannot but prove of signal advantage to the State. We cannot forget the round of public service, rarely intermitted, which your Majesty while Heir Apparent rendered to your people; and, as more particularly touching ourselves, we recall your Majesty's devotion to the cause of the sick and disabled poor in this vast metropolis, and the invaluable aid which your Majesty has given at a very critical period to those truly Charitable Institutions, the Hospitals of London, with which our Profession is so closely associated. We also recall with peculiar gratification the recognition which your Majesty has given to the Profession of Physic, and to its honourable and beneficent character, by allowing your name, while Prince of Wales, to be enrolled as an Honorary Fellow of our College.

"Lastly, we pray your Majesty to accept the assurance of our unswerving loyalty and deep devotion to your throne and Person, and we earnestly pray the Almighty to sustain you in your present trial, and long to preserve your Majesty to reign over a loyal people and a united empire.

"Signed.

"W. S. CHURCH (President).

(College seal.) "EDWARD LIVEING (Registrar).

"From our College in London,

"January 31st, 1901."

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6324 births and 4162 deaths were registered during the week ending March 23rd. The annual rate of mortality in these towns, which had been 21·5 19·6, and 18·9 per 1000 in the three preceding weeks, further declined last week to 18·4. In London the death-rate was 17·8 per 1000, while it averaged 18·8 in the 32 large provincial towns. The lowest death-rates in these towns were 10·7 in Halifax, 11·4 in West Ham, 12·1 in Wolverhampton, 12·9 in Brighton, and 13·0 in Oldham; the highest rates were 22·7 in Huddersfield, 23·0 in Preston, 23·4 in Manchester, and 23·6 in Liverpool. The 4162 deaths in these towns included 356 which were referred to the principal zymotic diseases, against 395, 376, and 370 in the three preceding weeks; of these 122 resulted from whooping-cough, 93 from measles, 53 from diphtheria, 38 from diarrhœal diseases, 27 from scarlet fever, 22 from "fever" (principally enteric), and one from small-pox. No death from any of these diseases occurred last week either in Croydon or in Halifax; in the other towns they caused the lowest death-rates in Wolverhampton, Oldham, and Huddersfield; and the highest rates in Bristol, Liverpool, Hull, Sunderland, and Gateshead. The greatest proportional mortality from measles was registered in Liverpool, Bolton, and Hull, from scarlet fever in Sunderland, from whooping-cough in Bristol, Cardiff, Swansea, Birkenhead, Hull, and Gateshead, and from diarrhœal diseases in Burnley. The 53 deaths from diphtheria included 14 in London, five in Sheffield, three in Bristol three in Leicester, and three in Blackburn. One fatal case of small-pox was registered last week in Cardiff, but not one in any other of the 33 large towns; and no small-pox patient remained under treatment in any of the Metropolitan Asylums hospitals on Saturday last, March 23rd. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1598, against numbers decreasing from 2535 to 1652 on the 12 preceding Saturdays; 151 new cases were admitted during the week, against 185, 140, and 130 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 501, 463, and 394 in the three preceding weeks, further declined last week to 332, and were 152 below the corrected average. Influenza was certified as the primary cause of 30 deaths in London last week, as compared with 35, 39, and 30 in the three preceding weeks. The causes of 53, or 1·3 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Bolton, Leeds, and in 11 other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Liverpool, Blackburn, Sheffield, and Hull.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 24·5, 23 4, and 22·7 per 1000 in the three preceding weeks, further declined to 21·1 per 1000 during the week ending March 23rd, but showed an excess of 2·7 per 1000 over the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 13·4 in Perth and 15·5 in Greenock to 22·4 in Dundee and 23·4 in Glasgow. The 663 deaths in these towns included 38 which were referred to whooping-cough, 15 to diarrhœa, 11 to small-pox, eight to measles, seven to diphtheria, six to "fever," and two to scarlet fever. In all, 87 deaths resulted from these principal zymotic diseases, against 122, 113, and 98 in the three preceding weeks. These 87 deaths were equal to an annual rate of 2·8 per 1000, which was 1·2 per 1000 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 67, 51, and 40 in the three preceding weeks, further declined last week to 38, of which 18 occurred in Glasgow, eight in Dundee, six in Edinburgh, three in Leith, and three in Paisley. The deaths from diarrhœa, which had been 23, 15, and six in the three preceding weeks, rose again to 15 last week, and included five in Glasgow, four in Dundee, three in Aberdeen, and two in Edinburgh. The deaths from smallpox, which had been 12 20, and 24 in the three preceding weeks, declined again to 11 last week, and were all registered in Glasgow. The deaths from measles, which had been 15 and 10 in the two preceding weeks, further declined last week to eight, of which five occurred in Edinburgh. The seven fatal cases of diphtheria corresponded with the number in the preceding week, and included three in Glasgow and three in Edinburgh. The deaths from different forms of "fever," which had been six in each of the two preceding weeks, were again six last week, of which three occurred in Glasgow and three in Edinburgh. The deaths referred to diseases of the respiratory organs in these towns, which had been 161 and 171 in the two preceding weeks, declined again last week to 126, and were 44 below the number in the corresponding period of last year. The causes of 30, or nearly 5 per cent.,

of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 46·6, 39·6, and 34·6 per 1000 in the three preceding weeks, rose again to 36·6 during the week ending March 23rd. During the past four weeks the death-rate in the city has averaged 39·4 per 1000, the rate during the same period being 18·9 in London and 22·8 in Edinburgh. The 243 deaths belonging to Dublin registered during the week under notice were 13 in excess of the number in the preceding week and included 15 which were referred to the principal zymotic diseases, against 12 and 14 in the two preceding weeks; of these, seven resulted from whooping-cough, five from diarrhœa, two from "fever," and one from diphtheria. These 15 deaths were equal to an annual rate of 2·2 per 1000, the zymotic death-rate during the same period being 1·6 in London and 3·2 in Edinburgh. The fatal cases of whooping-cough, which had been five, 10, and 11 in the three preceding weeks, declined again last week to seven. The five deaths from diarrhœa exceeded the number recorded in any previous week of this year. The 243 deaths in Dublin last week included 50 of children under one year of age and 70 of persons aged upwards of 60 years; the deaths of infants exceeded the number in the preceding week, while those of elderly persons showed a decline. 10 inquest cases and six deaths from violence were registered; and 85, or more than one-third, of the deaths occurred in public institutions. The causes of 17, or more than 7 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Staff Surgeons T. Austen to the *Talbot* and E. R. D. Fasken to Plymouth Hospital. Surgeons: J. A. Forrest to the *Talbot;* L. Lindop to the *Howe;* W. Keith to the *Vernon;* F. J. McKenna to the *Plover;* J. H. Lightfoot to the *Lion;* and J. St. J. Murphy to the *Britannia*.

ROYAL ARMY MEDICAL CORPS.

Lieutenant B. B. Burke has embarked for service in India.

Lieutenant-Colonel P. H. Johnston is granted the local rank of Colonel whilst in charge of a general hospital in South Africa. Lieutenant-Colonel A. T. Sloggett is granted the local rank of Colonel in South Africa whilst in charge of an Imperial Yeomanry hospital. Surgeon-Major C. R. Kilkelly, Grenadier Guards, is granted the local rank of Lieutenant-Colonel in South Africa whilst in charge of an Imperial Yeomanry hospital.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Major J. W. Cook, having resigned his Volunteer appointment, ceases to belong to the Army Medical Reserve of Officers.

INDIA AND THE INDIAN MEDICAL SERVICES.

The King has approved of the retirement of the undermentioned officers:—Lieutenant-Colonel George Michael James Giles, Bengal Establishment, and Major Edward Ronald Da Costa, Madras Establishment.

VOLUNTEER CORPS.

Rifle: 3rd Volunteer Battalion the Cheshire Regiment: Thomas Andrew Rothwell to be Surgeon-Lieutenant. 3rd Volunteer Battalion the South Wales Borderers: Lieutenant Edward Meredith Griffith resigns his commission and is appointed Surgeon-Lieutenant. 2nd Volunteer Battalion the Loyal North Lancashire Regiment: Surgeon-Major E. M. Garstang to be Surgeon-Lieutenant-Colonel. 5th (West) Middlesex: Surgeon-Lieutenant J. N. Brown to be Surgeon-Captain.

SOUTH AFRICAN WAR NOTES.

Captain P. J. Probyn, R.A.M.C., and Civil Surgeons T. B. M. Sherwen, A. McMunn, J. Davidson, H. Baylis, A. W. J. McFadden, L. H. G. Stephens, and A. B. Tucker have been discharged from hospital to duty.

Lieutenant A. C. Lupton, R.A.M.C., and Civil Surgeon A. Granville, has arrived in England.

ANTI-TYPHOID INOCULATION.

The March number of the *Scottish Medical and Surgical Journal* contains an article, entitled, "The Edinburgh Hospital in South Africa and its Work," by Dr. Francis D. Boyd of Edinburgh, physician to the hospital. Somewhat over 150 cases of enteric fever were admitted, the mortality of those which were under treatment during the whole of the attack being 10·7 per cent. His opinion with regard to protective inoculation is that its effects on the mortality of the disease can only be deduced from statistics dealing with very large numbers, and he has seen at least one case where inoculation markedly lowered the health standard of the individual. The statistical part of his reference to the subject is as follows:—

Of the staff of the Edinburgh Hospital 58 were inoculated, 27 being done once and 31 twice. In seven the inoculation appeared to produce no appreciable effect. In a smaller number there was merely a slight local reaction as indicated by some tenderness at the point of inoculation perceptible on the following day. In the very large majority of cases there was marked local and general reaction. The effects of this inoculation were manifest in from two to five hours. There was a feeling of malaise and faintness, with, as a rule, a rise of temperature of 2° to 4°. In some cases there was an actual rigor. At the point of inoculation there was marked pain and swelling. The feverish condition lasted, as a rule, for 24 to 36 hours, after which the local swelling diminished. In some cases there was marked enlargement of the lymphatic glands nearest to the point of inoculation which persisted in one case for weeks. In the cases where inoculation was performed twice the second reaction was not so severe as the first. Amongst the staff of the hospital, of the 58 inoculated nine developed enteric fever. Of those nine cases one proved fatal, death supervening on the twenty-fifth day from a sudden attack of cardiac failure. It must in fairness be noted that the patient started his attack with an impaired heart from an old-standing mitral lesion. Of the remaining eight cases three may be described as very severe attacks with persistent high fever, and marked abdominal or nervous symptoms. In four cases the attack was pronounced, in one it was of an apyrexial type. ..... Of the soldiers admitted into hospital who had been inoculated inoculation had been performed once in every case. 18 cases of enteric were observed. Two were very severe, five severe, and 10 were apparently modified attacks. Though the signs and symptoms of enteric fever were present they were very mild, the fever not being high and often of short duration (seven to 10 days). In two complications occurred, five cases were admitted with a history of a slight fever with gastro-intestinal disturbance. It is impossible to be certain if these were cases of enteric fever. They may have been modified attacks, but some of the signs and symptoms were absent; and as they had been inoculated the presence of a positive Widal's reaction was valueless from a diagnostic point of view. Our experience thus has been that while inoculation appears to modify the disease, completely modified attacks are met with in the uninoculated. Again, very severe attacks with complications and relapse occur in those who have been inoculated. One cannot from this conclude that inoculation has been valueless, for had not the patient been inoculated the attack might have been still more severe.

AFFAIRS IN SOUTH AFRICA.

From a military point of view things are progressing favourably in South Africa, and we may now venture to believe that there are signs of the still further breaking up of the already disorganised Boer forces. General Delarey has suffered a bad defeat and lost a large amount of stores and ammunition in addition to a number of guns, horses, cattle, &c. General French, with Dartnell's and Pulteney's columns, has arrived at Vryheid after having killed, wounded, and captured 1200 Boers and taken seven guns and many rifles, and a vast number of horses, wagons, cattle, and sheep. Where General de Wet really is seems uncertain, but the belief is that he is attempting to join forces with General Botha. Politically we may say that the rejection by the Boers of the very generous and conciliatory terms proffered to them by this country has only served to bind more strongly together and to increase the number of those who trust that everything possible will be done to bring this war to a complete and speedy termination. Even the continental powers have come to recognise the fairness and generosity of this country in the terms which it has put forward but which Botha and his people have rejected. As regards the medical aspect of affairs in South Africa, the plague continues to make some progress and to be a source of trouble and embarrassment at Cape Town, its victims not being confined to the native population. Much difficulty arises from the concealment of cases of the disease. The Malay community in Cape Town are a source of obstruction to the local health authorities in carrying out their sanitary measures and policy. According to a telegram from Governor Sir W. F. Hely-Hutchinson to the Colonial Office the plague report for the week ending March 23rd was as follows: Cases admitted, 46; deaths, 21; suspects, 3; "contacts," 394. Some of the troopships conveying reinforcements are proceeding to Durban and other ports instead of to Cape Town. Recruiting for the theatre of war is proceeding in this country with great activity and large batches of men are embarking every week for the Cape. The sick-list and the list of deaths from disease in South Africa are not by any

means, we are glad to say, so lengthy as they were, but there is still a good deal of enteric fever and dysentery.

THE VOLUNTEER MEDICAL STAFF CORPS.

On March 23rd the prizes of the London companies of the Volunteer Medical Staff Corps were presented at the headquarters in Calthorpe-street by Mrs. Squire, wife of the commandant, Surgeon-Lieutenant-Colonel J. E. Squire. The challenge shield for the best all-round company was taken by No. 4 Company (Surgeon-Captain J. Harper).

DEATHS IN THE SERVICES.

Brigade-Surgeon James Crosse Johnston, A.M.D. (retired), on the 23rd inst. He served with the 9th Regiment in the Crimea from January, 1855, including the siege and fall of Sebastopol and assault of the batteries (medal with clasp and Turkish medal).

The following is a list of medical men nominated by the Secretary of State for War as surgeons-on-probation for the Royal Army Medical Corps on the recommendation of the medical schools of the United Kingdom: E. V. Aylen, M.R.C.S., L.R.C.P., London Hospital; T. J. Potter, L.R.C.P. & S.I., College of Surgeons, Dublin; H. Rogers, M.B., B.Ch., Dublin University; T. F. Ritchie, M.B., Ch.B., Aberdeen University; W. J. S. Harvey, M.R.C.S., L.R.C.P., Guy's Hospital; A. J. Williamson, M.B., Ch.B., Edinburgh University; B. A. Craig, L.R.C.P. & S.I., College of Surgeons, Dublin; A. W. Sampey, L.R.C.P. & S.I., Richmond Hospital; J. C. Hastings, M.B., C.M., D.P.H., Edinburgh University; W. M. Browne, L.R.C.P. & S. Edin., Edinburgh; C. T. R. White, L.R.C.P. & S. Edin., Edinburgh; A. A. W. Merrick, L.R.C.P. & S.I., Queen's College, Belfast; D. O'Donoghue, L.R.C.P. & S.I., Catholic University School of Medicine.

Correspondence.

"Audi alteram partem."

"THE STATISTICS OF GASTRIC ULCER, WITH SPECIAL REFERENCE TO GASTRIC HÆMORRHAGE, ITS FREQUENCY AND FATALITY."

To the Editors of THE LANCET.

SIRS,—I have been both amused and surprised by some of Mr. Mayo Robson's comments on my lecture on the Statistics of Gastric Ulcer—amused because I note that while he heartily concurs with the facts and arguments I have advanced which tell in his favour, he refuses to admit any of my facts and arguments which are opposed to his conclusions, and surprised at some of his statements. In my lecture I endeavoured to consider impartially *all* sides of the statistical questions concerned, so far as they were known to me, and to be scrupulously fair in my consideration of Mr. Mayo Robson's views. I would again emphasise the fact that the question is one, not merely of academic and scientific interest, but of the very greatest practical importance, and that it is essential that the data on which physicians and surgeons will have to decide whether operative treatment for the arrest of hæmorrhage in cases of gastric ulcer is advisable or not should be as accurate as possible.

Mr. Mayo Robson accuses me of mere quibbling because, in contrasting the actual number of deaths registered in Leeds last year from gastric ulcer with the number of deaths which should, according to his estimate, have occurred in a population of 500,000, I pointed out that the population of Leeds was 431,287. To have contrasted the actual number of deaths from gastric ulcer which were registered in a population of 431,287 with the deaths which, according to Mr. Mayo Robson's estimate, ought to have occurred in a population of 500,000 would have been unfair to Mr. Mayo Robson; if I had not made the necessary corrections for the differences in population I would have laid myself open to criticism; and unless I had stated the actual number of the population my conclusions and calculations would have been unintelligible to your readers and might have been thought to be erroneous. To term this mere quibbling is hardly what I should have expected from Mr. Mayo Robson in a scientific discussion.

I agree with Mr. Mayo Robson in thinking that the statistics of Brinton with regard to the total mortality in cases of gastric ulcer and the statistics of Müller with regard to the mortality from hæmorrhage in gastric ulcer "have become classical," for they are more than 40 years old; but I differ from him in thinking that "they are accepted by all authorities on the subject to-day." It is true that they are still mentioned by many authorities, but I am not aware that any modern authority agrees with them—that any modern authority, with the exception of Debove and Regnault, who quote Brinton's figures apparently with approval,[1] agrees with Brinton in thinking that the total mortality in all cases of gastric ulcer is 50 per cent. (or anything like 50 per cent.), or with Müller that the direct mortality from hæmorrhage in cases of gastric ulcer is 11 per cent. (or anything like 11 per cent.).

If Mr. Mayo Robson had taken the *average* of the figures given by *modern* authorities I would have had nothing to say. My objection to his figures is that they represent the mean of the extremes, and that the maximum figures which he quotes (those of Brinton and Müller) should not, in my opinion, have been included, since they do not correctly represent the total mortality or the mortality from hæmorrhage in cases of gastric ulcer at the present day. The erroneousness of Brinton's estimate of 50 per cent. is shown by the fact that, if this estimate is correct, and if (as Brinton and Mr. Mayo Robson suppose) 5 per cent. of the whole population suffer from gastric ulcer, in a population like Leeds with 500,000 inhabitants, 12,500 persons, or one in every 40 persons (if children under five years of age are included), will die from gastric ulcer, or one in every 35 persons over five years of age (if children under five years of age, who rarely if ever die from round ulcer, are excluded) will die from gastric ulcer or some of its complications!

Mr. Mayo Robson does not accept my statement that gastric ulcer is more common in the hospital class than in well-to-do people and he takes exception to my basing this opinion upon clinical evidence, to which he says I have so much objected. Mr. Mayo Robson does not seem to realise that it is one thing to determine the exact (the percentage) frequency with which gastric ulcer occurs in the whole population, and that it is another and quite a different thing to determine whether gastric ulcer is more common in the hospital class or in well-to-do people. The clinical method cannot be relied upon for the former purpose, chiefly for the reason that, after the frequency with which gastric ulcer occurs in a given number of clinical cases has been determined, there are, so far as I know, no reliable figures to enable us to apply the result to the whole population. But it seems to me that the clinical method can quite well be relied upon for the latter purpose (to determine whether gastric ulcer is more frequent in hospital patients or in well-to-do people). The general practitioners throughout the country who are in the habit of dealing with both classes of patients (hospital and well-to-do) will, I fancy, have no difficulty in deciding whether my opinion on this point, which is based upon a large experience in general practice amongst all classes of patients, in hospital practice and in consulting practice, is correct or not. Further, all modern authorities are agreed that ulcer of the stomach is much more common in housemaids and female cooks (whom I include in the hospital class) than in any other class of the community. In speaking of the etiology of gastric ulcer Welch, for example, states: "Gastric ulcer is more common among the poor than among the rich. ..... The comparative frequency of gastric ulcer among needle-women, maid-servants, and female cooks has attracted the attention of all who have had large opportunities for clinical observation."[2]

Mr. Mayo Robson says: "I was very much astonished to find Dr. Bramwell making use of the Registrar-General's returns for the purpose of disproving the statistics I quoted, and I should like to ask if Dr. Bramwell really seriously argues that the Registrar-General's returns of deaths from gastric ulcer can be pitted against the statistics of such able physicians and keen observers as Brinton, Welch, Dreschfeld, Habershon, Müller, Lebert, Tricomi, and others?" I did not pit the Registrar-General's returns against the statistics of the authorities whom Mr. Mayo Robson quoted, but—and this is a very different thing—against the conclusions (based on the mean of the extremes) which Mr. Mayo Robson drew from those statistics. I have not refused to accept the conclusions of modern authorities (such as Lebert, Welch,

[1] Ulcère de l'Estomac, p. 101.
[2] Pepper's System of Medicine, vol. ii., p. 486.

Dreschfeld, and Riegel) which show that the total mortality of gastric ulcer is probably somewhere between 8 and 15 per cent., although, as I pointed out in my lecture, these statistics are for the most part based on hospital results, and although the proportion of deaths to the total cases of gastric ulcer treated is very much greater in hospitals than outside hospitals. I have not suggested that the Registrar-General's returns were strictly accurate—nor, so far as I know, does anyone claim that *any* of the statistics (mortality percentages) quoted by Mr. Mayo Robson are strictly accurate, while Brinton's estimate is certainly most inaccurate. I allowed for considerable additions to the figures, due to the fact that a certain number of deaths caused by gastric ulcer and its complications are registered under other headings. But what I do maintain is that, after making ample allowance for these sources of fallacy, the difference between the returns of the Registrar-General and the mortality which, according to Mr. Mayo Robson's estimate, should result from gastric ulcer is sufficiently great to show that Mr. Mayo Robson's figures must be incorrect. But, after all, the practical test of the correctness of Mr. Mayo Robson's figures in regard to the total mortality of gastric ulcer is that, according to him, one in every 80 persons (if children under five years of age are included), or one in every 69 persons (if children under five years of age are excluded), in a community of 500,000 persons will die from ulcer of the stomach or from some of its complications. I do not believe that this is the case, and I would ask, Do the readers of THE LANCET, whose experience in practice entitles them to judge, believe it?

Mr. Mayo Robson next says: "Dr. Bramwell should really be careful before he accuses anyone of making a serious error, especially when he pits his individual experience and opinion against the experience of the authorities quoted from and whose statistics I will again repeat," &c. What my individual experience and opinion are has nothing to do with the particular point at issue. That point is, Was Mr. Mayo Robson right or was he wrong in concluding that the figures which he quoted represented the mortality from hæmorrhage in those cases of gastric ulcer in which hæmorrhage occurs? Do the percentages which he quoted refer, or do they not refer, to *all* cases of gastric ulcer?

Mr. Mayo Robson's statement was very definite—viz.: "Hæmorrhage which according to different authorities occurs in a greater or less degree in from 50 to 80 per cent. of all cases of gastric ulcer and is, according to various authors, fatal when medically treated in from 11 to 3 per cent. (Müller, 11 per cent.; Welch, from 3 to 5 per cent.; Brinton, 5 per cent.; Debove, 5 per cent.; Steiner, 6·36 per cent.; Lebert, 3 per cent.; Dreschfeld, 3½ per cent.; and Rodman, 8 per cent.). If we take the average, 7 per cent. of deaths in cases of gastrorrhagia from ulcer will not be far from the truth. If this is worked out in the 500.000 population of a city like Leeds it means that of the 25,000 persons who have or have had ulcer 12,500 suffer from hæmatemesis, and of these 7 per cent., or 875, die."

My statement was also very definite. After pointing out that 7 per cent. does not represent the average of the figures quoted, but the mean of the extremes, I stated: "The percentages of deaths from hæmorrhage, which Mr. Mayo Robson quotes from different authorities, with, so far as I have been able to ascertain, the exception of Rodman, refer, not to the percentage of deaths in those cases of gastric ulcer in which hæmorrhage occurs (which Mr. Mayo Robson estimates at 50 per cent. of the whole), but in the total number of cases of gastric ulcer. If, therefore, 7 per cent. of all cases of gastric ulcer die from hæmorrhage, Mr. Mayo Robson's figures will have to be doubled; in other words, in a population like Leeds, say of 500,000, 1750 will die from hæmorrhage."

Mr. Mayo Robson adheres to his reading of the figures and so do I. Possibly the authorities named may have stated one thing in one place and another thing in another place. Possibly, therefore, both Mr. Mayo Robson and I may be correct. But there is no need to talk of possibilities when the matter is capable of easy proof. I would, therefore, ask Mr. Mayo Robson to publish the exact references (he, unfortunately, gave no reference in his paper) to the passages in the publications of Müller, Welch, Brinton, Debove, Steiner, Lebert, Dreschfeld, and Rodman, to which he referred. This will at once show which of us is correct or whether both of us are correct.

Mr. Mayo Robson quotes in support of his view the following statement of Fenwick—viz.: "Hæmorrhage from the stomach is a frequent cause of death in gastric ulcer. Out of 112 fatal cases recorded at the London Hospital, 18, or 16 per cent., died from hæmatemesis, while in another series of 298 necropsies on gastric ulcer we find that hæmorrhage occurred in 56 cases, or in 18·8 per cent." In answer to this I would point out that the frequency (percentage fatality) with which hæmorrhage is the cause of death in a series of *fatal* cases of gastric ulcer does not show the frequency (the percentage fatality) with which hæmorrhage is fatal in all cases of gastric ulcer. Because hæmorrhage is the cause of death in 18 per cent. of the fatal cases of gastric ulcer it does not necessarily follow that a *large* percentage of patients who are affected with gastric ulcer die from hæmorrhage; that this is so is shown by the statistics of the Edinburgh Royal Infirmary and of St. Thomas's Hospital given below. Further, the percentage of deaths from hæmorrhage in the series of fatal cases given by Fenwick is much greater than in some other series of fatal cases of gastric ulcer. Thus in 270 fatal cases of open ulcer (collected and analysed by Welch [3]), 27, or 10 per cent., died from hæmorrhage; and in 107 fatal cases which occurred in the Edinburgh Royal Infirmary and in St. Thomas's Hospital (see below) 10, or 9·3 per cent., died from hæmorrhage.

So far as I know, there is no reason to suppose that there is any material difference in the fatality of gastric ulcer or in the fatality from hæmorrhage in gastric ulcer in London and Edinburgh respectively. The fatality in the Edinburgh Royal Infirmary during the nine years, from 1892 to 1900 [4] inclusive, is shown in the following figures, for which I am indebted to Dr. A. L. Gillespie, our medical registrar. During the nine years (1892–1900) 891 cases of gastric ulcer were admitted into the medical and surgical wards of the Edinburgh Royal Infirmary; [5] of these, 858 cases were admitted to the medical wards and 33 cases to the surgical wards; of the total 891 cases, 61 died; of the 61 fatal cases 43 died in the medical wards and 18 died in the surgical wards. The percentage of deaths in the total 891 (medical and surgical) cases of gastric ulcer was 6·8; the percentage of deaths in the 858 medical cases was 5·01; and the percentage of deaths in the 33 surgical cases was 54 54 (three of the cases which died in the surgical wards were transferred from the medical wards for the purpose of operation). In the 61 fatal cases, hæmorrhage was the cause of death in six cases only. Consequently the percentage of deaths from hæmorrhage in the total 891 cases of gastric ulcer which were treated as in-patients in the Edinburgh Royal Infirmary during the period under observation was 0·67; in other words, during the nine years, 1892 to 1900 inclusive, only six cases of gastric ulcer died in the Edinburgh Royal Infirmary from hæmorrhage.

If these results are contrasted with those of St. Thomas's Hospital they will, so far as the mortality from hæmorrhage in cases of gastric ulcer is concerned, be found to be almost the same. The St. Thomas's Hospital results are as follows. During a period of 15 years (1884 to 1898) the total number of cases of gastric ulcer was 473; of these 473 cases of gastric ulcer 46, or 9·72 per cent., died; and of the 46 fatal cases four died from hæmorrhage; in other words, four out of 473 cases of gastric ulcer, or 0 84 per cent., died from hæmorrhage. But during the same period there were 82 cases of hæmatemesis, of which three died; in two of these there was no post-mortem examination; they may, perhaps, have been cases of gastric ulcer. If these two cases of fatal hæmatemesis are added (which may perhaps have been cases of gastric ulcer) the total mortality from gastric ulcer in St. Thomas's Hospital during the 15 years under observation would be 10·1 per cent. and the mortality from hæmorrhage in gastric ulcer would be 1·2 per cent. In other words, in St. Thomas's Hospital during a period of 15 years only four cases of gastric ulcer (actually returned as such) died from hæmorrhage; and if the two cases of fatal hæmatemesis (which may perhaps have been cases of gastric ulcer) are added only six cases of gastric ulcer died from hæmorrhage during a period of 15 years.

Consequently, in two of the largest and most representative hospitals in the country only 10 cases of gastric ulcer (or possibly 12 cases, if the two cases of hæmatemesis in

[3] Pepper's System of Medicine, vol. ii., p. 502.

[4] The nine years 1892-1900 are selected because there were no published reports before the year 1892.

[5] The figures do not include the cases admitted to the surgical wards during the last year (1900).

the St. Thomas's Hospital Reports, which may perhaps have been gastric ulcer, are added) died from hæmorrhage during a long period of years, giving a mortality from hæmorrhage in gastric ulcer of 0 73 per cent. (10 deaths from hæmorrhage in 1364 cases), or 0 87 per cent. (12 deaths from hæmorrhage in 1364 cases) if the two cases of hæmatemesis which were, perhaps, gastric ulcer are included. It is hardly necessary to point out that this mortality is very different from that which Mr. Mayo Robson estimates. Since Mr. Mayo Robson's address was delivered I have been actively engaged in trying to trace the after-history of all of the cases of gastric ulcer which I have treated in hospital as in-patients and seen in consulting practice. The results will be published in due course.

I am, Sirs, yours faithfully,

Edinburgh, March 19th, 1901. BYROM BRAMWELL.

"HOUR-GLASS CONTRACTION OF THE STOMACH": A SUGGESTION.

To the Editors of THE LANCET.

SIRS,—"Hour-glass contraction of the stomach" has now become such a well-recognised term for a fairly frequent diseased condition that any attempt to dispute the term will be almost sure to lack approval. However, I venture to state that it is not a precise term if not a misnomer. I maintain that the more precise term both pathologically and clinically should be "hour-glass *dilatation* of the stomach consequent on some constricting band or contracting area." When the surgeon comes to operate on these cases he does not find a small contracted stomach but two or three dilated sacs produced as a result either of fibrous adhesions or of a contracted or contracting area according as ulceration is proceeding or past. If there are two sacs we may call one the "cardiac complement" and the other the "pyloric complement." The "cardiac complement" has been formed first by hypertrophy of the muscular coat of the stomach in its endeavour to pass its contents through a stenosed lumen; the hypertrophy has then been followed by dilatation according to the ordinary rule in hollow viscera. The "pyloric complement" dilates from a totally different cause—namely, an atonic and paralytic distension due to the accumulation in it of stomach contents which stagnate instead of passing on through the pylorus, for the simple reason that the proper peristaltic waves have been cut off or inhibited by the constricting band or contracting area of fibrous tissue. An accessory factor in the dilatation of both "cardiac and pyloric complements" is the accumulation in them of the gases of fermentation and their effect upon a degenerate muscular coat. Should there be three dilated sacs produced by two constricting bands or contracting areas then we may describe a "cardiac complement," a "pyloric complement," and an "intermediary complement." The "intermediary complement" dilates from the same causes as the "pyloric complement."

I am, Sirs, yours faithfully,

BERTRAM C. STEVENS, M.B. Durh., M.R.C.S. Eng., &c.

Leeds, March 18th, 1901.

"DIPHTHERIA ANTITOXIN USED SUCCESSFULLY BY THE MOUTH."

To the Editors of THE LANCET.

SIRS,—My attention has been drawn to a clinical note with the above heading published in THE LANCET of Feb. 9th. This mode of administering antitoxin is not quite new. In April, 1897, I had a patient, a little girl, who became so nervous and hysterical at the sight of the large hypodermic needle then used that I could not prevail upon her to let me give her an injection but she had no objection to take it by the mouth; and although this was a very severe case with high temperature and the soft palate and both tonsils were covered with membrane the patient made a satisfactory recovery. I have given it in this way in many cases since with the most satisfactory results, having had no deaths. I use Behring's preparation, giving from 1000 to 2000 units for a dose, which amount usually is sufficient. Prior to the case referred to I had not read or heard of this means of administering the remedy, nor had I heard of it since until I read the article above mentioned.

I am, Sirs, yours faithfully,

J. LINDSAY PORTEOUS, M.D. St. And., F.R.C.S. Edin

Yonkers, N.Y., U.S.A., March 13th, 1901.

"THE DUTIES OF HOUSE SURGEONS AT THE EAST SUFFOLK AND IPSWICH HOSPITAL."

To the Editors of THE LANCET.

SIRS,—I wish to add something further to Dr. Kay's letter published in THE LANCET of March 16th, p. 815. He makes reference to my interview with Mr. Elkington, the editor of the *East Anglian Daily Times*. The same morning I mentioned the matter *re* giving information to the press to Mr. H. Mason, vice-chairman of the weekly board. He said that he was afraid that I must give information to the press as the *East Anglian Daily Times* gave us puffs and that we could not afford to offend it. My reply was that if the hospital was properly managed it required no puffs, if improperly managed the sooner it was legitimately criticised the better, and that I could not see my way clear to give information to the press and regarded it as a breach of professional secrecy. I regret to say that in discussing the matter with some of the staff they adopted the extraordinary view that patients admitted into hospital were in receipt of charity and were not on the same footing as private patients. I entirely dissented from this view and said that in my opinion patients admitted into hospital were as much entitled to professional secrecy as private patients.

Mr. Elkington's attitude at the meeting of the board of management, which decided our dismissal, is in my opinion somewhat vindictive, considering the dual position he occupies—i.e., editor of the *East Anglian Daily Times* and a member of the weekly board. In his speech to the board supporting our dismissal he asked if ethics brought the hospital money. He also went on to say that unless the house surgeons were dismissed he must seek such information as he required from the proper source—the patients' relatives.

I am, Sirs, yours faithfully,

March 19th, 1901. C. C. WORTS, Second House Surgeon.

"THE ROYAL ORTHOPÆDIC HOSPITAL."

To the Editors of THE LANCET.

SIRS,—My attention has been drawn to a letter published in your issue of March 23rd from a "Hospital Governor" relative to certain matters that have recently been considered by the committee of this hospital regarding the disposal of its present site.

I have no intention of entering into a controversy with your anonymous correspondent in the columns of your journal, but I write to protest against important business and negotiations conducted by hospital committees being prematurely discussed in the press. If such methods were legitimate then meetings of committees might as well be open to the public and to the press.

Your correspondent deals mainly with two points that were before my committee on the 14th inst. One is stated quite inaccurately and the other is not fully set out so as to merit a proper judgment upon it. Sirs, the axiom that "half the truth is often worse than an untruth" is well exemplified in this case.—I am, Sirs, yours faithfully,

March 26th, 1901. TATE S. MANSFORD, Secretary.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Great Increase of Plague.

A THEORY was started about three years ago that the cold weather, by driving the people into their houses, favoured the spread of plague. It was apparently constructed to explain the particular outbreaks in Bombay and the idea still seems to linger in the popular if not in the official mind. Subsequent experience does not support this view as the great rise in plague mortality of the past two weeks with the rise in temperature shows. During the exceptionally cold weather plague did not make much headway. The outbreaks in Calcutta, Karachi, Poona, as well as the later ones in Bombay, ought at any rate to convince anyone that an outbreak of plague will develop in the hot weather as virulently as, if not more so than, in the cold.

The total number of deaths from plague in the whole of

India last week were 4377, against 3415 in the preceding week and 2137 in the corresponding week of last year. The mortality is therefore double what it was a year ago. Bengal continues to be the worst infected province, but the disease is rapidly increasing again in Bombay. The figures are: Bengal, 2491, against 2058 in the preceding week and 782 in the corresponding week of last year; Bombay city, 845, against 588, and the district 471, against 360; Madras, 138, against 44 (all in the Salem district); North-west Provinces, 44 (in the Benares and Ballin district); Calcutta. 129, against 71; and Bengal district, 2491, against 2058. The features of the epidemic for the week are its great increase in Bombay city, its continued virulence in the Patna district of Bengal, its development in Calcutta, and its fresh outbreak in Benares and Karachi. The municipality of the latter city has addressed the President of the Plague Committee to the effect that it cannot find funds for the Plague Committee, and that either plague measures must practically cease or must be paid for by Government. There is little prospect of plague disappearing and expensive and elaborate organisations have proved unavailing. Cholera kills every year far more people, and yet, beyond purification of the water-supply, little is done. Possibly if Government would devote some of the money now expended on plague measures to original scientific experiment we should probably obtain some more tangible results.

Feb. 14th.

The Continued Increase in the Plague Epidemic.—The Death of Colonel Maitland.—The Pasteur Institute and Contributions from Local Bodies.—The Continued Famine.

I have to record a still further increase in the mortality from plague throughout India. The week's record shows 6309 deaths. The Bengal Presidency heads the list with the alarming total of 4353, of which the Patna district contributed 1736. In Calcutta there has been a rise from 233 to 287. Since these figures were published the deaths have very considerably increased and the disease is rapidly extending all over the city. In Bombay city also the plague continues to claim more and more victims. Out of the total mortality of 2495 last week there were 1118 deaths from plague. The present death-rate in Bombay is 158 per 1000 per annum. In Karachi the outbreak is slowly developing, as is usual during its early stages. There have been 100 cases and 66 deaths up to Feb. 26th. There is no particular change to note from other parts.

Colonel Maitland who was killed with his syce during the attack made on the Somali Expedition belonged to the Indian Medical Service. Prior to leaving for Africa he was attached to the Marine battalion in Bombay. He was greatly esteemed and respected by everybody and great sympathy is felt for Mrs. Maitland.

It will be remembered that the Pasteur Institute of India appealed some time ago to various local bodies, municipal and district boards, for subscriptions, but on the subject of contributing funds to this purpose many of these corporate bodies hesitated as being beyond their powers. Doubt as to the power of municipalities in India to contribute has been set at rest by a decision of Government which has held that municipalities according to the Act can contribute, but that district councils cannot do so without the sanction of the local government.

The continued famine is due to the failure of rains in the districts of Guzurat, Sholapur, and Ahmednagur. Adequate preparations are being made by the Bombay Government to tide over the coming season, but the absence of rain for so long threatens the supply even of drinking-water both for man and beast. It is said that the wells and tanks are failing. Already it has been thought advisable to deepen many wells and relief works of other kinds are being arranged for. As the harvest in other parts has been good there will be plenty of good grain available. It is only a question of distribution.

Feb. 27th.

Early Returns of the Recent Census.—The Plague Epidemic.—The Biological Treatment of Sewage.

Contrary to expectation, many places in India show an actual diminution in population as compared with the census of 1891, but only a few of the returns have as yet been published. On the other hand, there are several instances of extraordinary urban increase. Howrah, on the opposite bank to Calcutta, shows an increase of 34 per cent., Rangoon an increase of 29 per cent., and Naina Tal an increase of 45 per cent. Delhi, Cawnpore, Jubbulpore, and Lahore also show increases, but in Lucknow, Benares, Bangalore, and Bombay there have been small declines. In the three latter cities plague has probably been the cause. The city of Bombay has possibly lost 100,000 people from the plague and the census rough totals show the populations to have fallen off by 50,000 since 1891. The number of inhabitants is now 770,000. Famine and the general high death-rate in other parts of India will have prevented any very large increase in the whole population.

The epidemic of plague continues to spread and to intensify in certain areas. There were 6927 deaths throughout India from plague last week—nearly double the mortality of the corresponding week last year. The increase over the preceding week is 618. The most noticeable feature of the returns is the great rise in Calcutta—viz., from 287 deaths to 405. The disease has extended in the North-West Provinces, where Benares, Ballia, and Jaunpur are all now more or less affected. They return 283 deaths. There is a slight decline in the districts of Patna, Saran, Gya, and Monghyr in Bengal, but nearly 4000 deaths were returned from them. The increase of mortality in Calcutta is practically all accounted for by plague, and there must be a large proportion of the cases seen by the authorities during life. In Bombay city, on the other hand, with a weekly mortality of 2615 from all causes, only 1080 are returned as due to plague. The average mortality being under 700 there are thus 800 extra deaths unaccounted for. In all probability the whole of the excess is due to plague—making the plague mortality nearer 2000 than a little over 1000, as published in the returns. For the years 1896 to 1900 there have been recorded in Bombay city 269,536 deaths from all causes. The mean of previous years shows that the mortality should not have exceeded 140,000. This excess of 129,536 is only partly (about a half) accounted for by the plague deaths reported which number 59,136. From the imperfect registration of the causes of death it is almost certain that the official returns are incorrect and it is probable that the death-roll from plague in Bombay city since the first outbreak amounts to over 100,000 people.

The biological treatment of sewage is being adopted at several places in India. One of the latest towns to employ it is Howrah, opposite Calcutta. The process employed consists in passing the highly foul and offensive sewage through a specially designed primary filter constructed on the "Scott-Moncrief" plan, by which upward filtration is obtained. The effluent is then passed through bacteria beds. It is led over a broad weir on to the beds. The latter consist of layers of earth and fine cinders and are about three feet in depth. The scum of the bacteria beds is scraped off every week or so. The results are said to be economical and satisfactory.

March 7th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Small-pox in Glasgow.

THERE seems at last to be a substantial basis for the expectation that the epidemic is yielding to the active measures that have been prosecuted with a view to prevent its spread. The new cases admitted during the week ending March 24th numbered 63, a gratifying decrease on the previous record and a justification of the recorded anticipation of the health officials to the effect that recent evidences of increased activity of the disease were likely to be of a temporary character. Various amateur suggestions for dealing with the epidemic continue to be made through the public press and otherwise, and here and there certain details of the official proceedings have received a not altogether sympathetic criticism. But the great body of public opinion offers an appreciative support to the medical officer and other officials who have been called on to sustain an enormous burden of responsible work.

The Municipalities and the Health of the City.

In a recent lecture on this subject Dr. Erskine, who is a member of the Glasgow Town Council, gave an account of the establishment and development of the municipal health department. Speaking on the present epidemic of small-pox he compared it with the outbreaks in 1873 and 1874. In these the deaths numbered 228 and 214 respectively, whilst

the death-roll of 1900–01 is 190. The recent outbreaks of plague and small-pox showed that in certain respects the arrangements for guarding the health of the city are far from satisfactory. In the first place it was clear that the medical inspection of vessels arriving in the Clyde was quite inadequate, and reform in this respect was imperative. Dr. Erskine also criticised the existing small-pox hospital accommodation. This, he urged, should never have been placed in such close proximity to the General Fever Hospital. Not only is the hospital from 30 to 40 yards from the general wards but it is only distant some 60 yards from dwelling-houses. Dr. Erskine stated that he had pressed this question on the attention of the Health Committee more than two years ago but it had been completely ignored.

Professor John Glaister on Sewage Purification.

In a lecture delivered to the Glasgow Philosophical Society on March 20th Professor Glaister described the various methods of sewage purification and urged that the selection of a scheme for any populous place should be made on the ground of its suitability on practical and economical grounds to the district concerned and not on any abstract merits which one scheme was supposed to possess over another. The practical difference in efficiency between any of the schemes now in vogue was not, he considered, sufficient to justify the expenditure of large sums of public money in order to replace one system by another, for less depended on the system than on the manner in which it was worked. In dealing with the corporation sewage works at Dalmarnock Professor Glaister expressed the opinion that iron should be more extensively used as a precipitating agent. Criticising a recent statement of the city engineer that in the new sewage works precipitation would not be accompanied by filtration, the lecturer doubted the wisdom of this decision and the possibility under the circumstances of producing a satisfactory effluent. In the latter part of his lecture Professor Glaister referred to the bacterial systems of sewage purification and pointed out the disadvantage entailed by the expense involved in the purchase of large tracts of land for the contact beds. Further, no scheme yet devised could prevent the passage of pathogenic organisms through the beds into the effluent.

The Prevention of Consumption.

At the instance of the Glasgow Medico-Chirurgical Society and the Corporation Committee on Tuberculosis a public meeting was held in Glasgow on March 22nd to consider the propriety of establishing a local branch of the National Association for the Prevention of Consumption. The Lord Provost presided and there was a good attendance of medical men and others. The proposals adopted by the meeting were in favour of the object for which the meeting was summoned and in support of the establishment of sanatoria for the treatment of consumptive patients, and a committee was appointed to carry out these resolutions. The principal medical speakers included Professor McCall Anderson, Professor J. Glaister, Professor R. Stockman, Dr. Alexander Robertson, Dr. Lindsay Steven, and Professor H. E. Clark, The Lord Provost, Principal Storey, and Sir J. Neilson Cuthbertson also spoke in favour of the above proposals. Sir Hector Cameron, who was to have proposed one of the resolutions, was unavoidably absent.

University of Glasgow.

The University plans for the erection of a surgical laboratory at Gilmorehill have passed the Dean of Guild Court and the authorities, therefore, have the power to begin building when it suits their convenience. It is somewhat of a surprise to learn that the surgical laboratory is to be one of the first to be erected. Its principal function must necessarily be the promotion of research work, and it would seem not unreasonable to suggest that this might wait until the claims of the departments in which facilities for practical teaching need improvement had been satisfied. The University are asking the city merchants to subscribe liberally to promote a scheme of practical laboratory accommodation; their appeal might address itself more successfully to business instincts were it accompanied by a detailed statement of the manner in which the money is to be expended. It is reported that no successor in the meantime is to be appointed to Dr. Thomas Reid as lecturer on diseases of the eye. The endowment, it appears, is not definitely attached to the lectureship and is likely to be employed in connexion with a lectureship on another subject. There are vacancies for examiners in clinical medicine and clinical surgery.

March 26th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Dublin Sanitary Association.

THE annual meeting of the Dublin Sanitary Association was held on March 21st, Dr. Charles Moore, the President, being in the chair. Mr. R. Brien Furlong moved the adoption of the report, and Sir William Thomson, in seconding the motion, alluded to the number of dairy yards in the city, and to the fact that there could not be proper inspection of the 40 or 50 private slaughter-houses which were still permitted to exist. He said that he looked upon the want of proper control of the tenement houses as one of the chief causes of the exceptional mortality which prevails in Dublin from time to time. Sir Charles Cameron said that he was in agreement with a great deal of what Sir William Thomson had said as to dairy yards and slaughter-houses, but it should be remembered that in Dublin there were vested interests in connexion with those houses. The corporation had power to purchase the interests of the proprietors of the slaughter-houses, but they had no power with regard to the dairy yards, and at present the law did not permit them to refuse a licence for a new dairy yard even though it should be at the back of a gentleman's house. When he (Sir Charles Cameron) first became medical officer of health of Dublin there were 500 dairy yards in the city and that number was now reduced to 200. Many of the slaughter-houses had been disposed of. As to the tenement houses, many of them were owned by absentee landlords representing families that lived in Dublin 200 years ago. In Turgan-street a house belonging to a landlord who lived on the continent was let to a tenant who sublet it to a dozen others. Out of a total of 7000 tenement houses the corporation had obtained orders to close 3000, and of those that had been closed 1000 had never been rebuilt. In conclusion, he admitted that the general death-rate of Dublin was exceptionally high, but the death-rate from preventable diseases had been slightly below the average in 30 English towns.

The Hospitals and Convalescent Homes of Dublin.

At the annual meeting of the governors and subscribers of the convalescent home, Stillorgan, held on March 11th, Sir Frederick Falkiner, Recorder of Dublin, who presided, took the opportunity to make some interesting remarks in reference to the hospitals of the city. He said that Dublin was the best hospitalled city in the world and at the same time the most over-hospitalled. He did not think that many people knew that there were more hospitals in Dublin than in London with 12 times its population, and five times as many as in Edinburgh with twice its population. The work, moreover, of the hospitals of Dublin "was splendid." On another and more recent public occasion the Recorder stated that in his opinion the hospitals should not depend entirely on the subscriptions and bequests of the charitable, but that the patients who could afford it should be expected to pay some small sum, such as a few shillings per week.

The City of Dublin Hospital.

A deputation, consisting of Dr. Benson, Dr. A. R. Parsons, and Mr. Fry, representing the board of the City of Dublin Hospital, recently waited on the Pemberton Urban Council in reference to the latter's request for representation on the governing body of the hospital. The deputation explained that under a deed the provisions of which could not be altered the board consisted of 21 members, seven from the medical profession and 14 lay members. At present there was no vacancy, but a resolution had been passed that the first vacancy that arose among the lay members of the board would be offered to that council, the members of which could nominate a representative. The council considered this explanation as being satisfactory.

Royal University Graduates' Dinner.

The first annual dinner of the Royal University Graduates' Association was held in Belfast on March 19th, when there was a large and influential attendance. The President of the association, Dr. W. A. McKeown, was in the chair. The toast of "The King, the Queen, and the Royal Family," proposed by the chairman, having been drunk, the editor of the *Northern Whig*, Mr. J. R. Fisher, B.A., proposed "The Lord Lieutenant and Prosperity to Education in Ireland," to which Sir James Musgrave, Bart., replied. The main toast of the evening, "The Royal University of Ireland," was given by

Dr. McKeown. Having referred to what the Royal University had done for education in Ireland, both for men and women, and to the high standard of its examinations, especially in the faculty of medicine, he blamed the Government for making appointments on the Senate of persons who were actually hostile to the Royal University instead of persons who would do their best to make it more successful than it was. He said that at present fully 60 per cent. of those who obtained the Royal University degree in arts had been trained in private colleges or by private study. They must insist that the new Commission should be composed of absolutely impartial persons His own idea was that the associated colleges should be strengthened, more liberally endowed, provided with halls of residence, and made constituent colleges of the Royal University with direct representation on the governing body of the University. The Rev. Dr. Nicholas (President of the Belfast Methodist College) responded, and Dr. J. Walton Browne, one of the senators of the Royal University, also said that the senators from the north of Ireland had been instrumental in effecting that no examiner in medicine was permitted now to give any question at the examinations the answer to which could not be found in any of the various text-books in use throughout the United Kingdom, and secondly that no examiner in clinical subjects should be allowed to examine the students whom he taught. He (Dr. Browne) held that the clinical examinations should be conducted within the walls of the University and not at the Dublin hospitals, and he also hoped to get students their final degree without having to go to Dublin for three months for private tuition. The Rev. J C. Heuston proposed "The Queen's Colleges and the Affiliated Colleges of the Royal University," to which Mr. G. Hume, M.A., K C., and Mr. C. Scott, C.E , responded. The Rev. Professor Leitch, D.Lit., proposed the toast of "The President of the Royal University Graduates' Association," to which Dr. McKeown replied.

Down District Lunatic Asylum.

At a meeting of the Committee of Management held on March 22nd it was reported that dysentery, for some years endemic, now seemed to have assumed an epidemic aspect in the asylum. Notice was given of a motion to provide isolated hospitals for patients suffering from infectious diseases and the medical superintendent, Mr. M. J. Nolan, was directed to make inquiry respecting iron hospitals to accommodate about 20 patients with small kitchens connected therewith.

March 26th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Emergency Operations in Hospitals: The Responsibility of Operators.

THE Consultative Committee of the Assistance Publique, having been approached by various surgeons and accoucheurs as to what course they should pursue in the event of a patient refusing operation in a case of emergency, has returned the following detailed answers:—1. If a woman in labour who is under treatment in a hospital, being in full possession of her faculties, refuses an operation, the accoucheur in charge, after having laid the matter fully and fairly before her, should give way to her definitely expressed opinion. 2. If she only consents to be operated upon under certain definite conditions the accoucheur should also defer to her opinion, unless such conditions are manifestly unacceptable in themselves, or are against the rules of his art, or of such a nature as to make the operation more dangerous than useful. Under these last-mentioned circumstances the accoucheur ought to do nothing. 3. In an exceptional case, where by reason of the general or accidental condition of the patient she cannot be considered as being in full possession of her faculties, the accoucheur should act according to his moral responsibility, after, that is, having satisfied himself of the need for an operation and having informed the husband or in default of him the nearest relatives. In such a case the operator will not be responsible either under the criminal or the civil law, unless it should turn out that he has been guilty of evident malpraxis or has not acted in accordance with the generally accepted rules of his art. Many similar questions came before the committee and were treated as follows. The question was asked, How should the surgeon to a hospital act in the case where an immediate operation involving risk to life in a child is necessary and where there is no time to obtain the consent of the parents? The committee answer to this that in the case of urgency the surgeon can, and should, upon his own moral responsibility perform an operation which is considered to be necessary to be performed with a view to saving life, even though time is lacking to obtain the consent of the parents, but that if possible his opinion should be backed by that of his colleagues at the hospital and that the director of the hospital should be then and there informed of the operation. Under such circumstances the surgeon will not be liable to proceedings under either the criminal or the civil law unless it can be shown that he committed gross errors either of diagnosis or of operative technique. Another question was the following:—How far can a surgeon rely on the expressed wish of a child who has been told that he must undergo an operation? The committee answer to this that the surgeon must respect the liberty of the subject, whether of an adult or of a child, provided that such person be capable of giving an opinion and that the opinion be that given by the conscious exercise of a free will (*volonté consciente*). They say that in such a case the parents cannot impose their will on the child, whether in favour of or against surgical interference, but that the surgeon would do well to take the advice of his colleagues. With regard to the following question, Supposing that the parents disagree as to the necessity for an operation on a child, what should the surgeon do? the committee reply that the father's will should prevail. The final question ran, Is it either possible or becoming for the administration to lay down rules of conduct for surgeons and accoucheurs in such delicate and difficult questions as those cited above? To this the committee reply that any such rules would be the cause of grave difficulties without any compensating advantages. It is necessary for the interest of the patients and of the administration itself, and for the dignity of the medical profession, that the skilled professional worker should have perfect liberty of action—that is to say, upon his personal responsibility.

Mortality in France from 1886 to 1898.

For some years past the administration has endeavoured to get together demographical statistics, especially those of the causes of death in French towns with a population of over 5000 souls. Statistics covering a period of 13 years—namely, from 1886 to 1898—have been drawn up by M. Paul Roux, assistant keeper of the Bureau of Hygiene. He has been assisted by M. Henri Reynier, and they have issued a report which M. Monod has brought before the Academy of Medicine. The towns with more than 5000 inhabitants number 584. They are divided into six groups according to population, Paris forming by herself the first group. The total population comes to 12 848,235 inhabitants, nearly exactly one-third of the total population of France, which is 38,268,011. The report contains 14 tables in colour, which show for every group and for every town with over 60,000 inhabitants the number of births, of still-births, and of deaths. There are also shown the number of deaths due to epidemic diseases, to tuberculosis, to bronchitis, and to pneumonia, together with the infantile mortality. The most important conclusions to be drawn from the figures are as follows:—1. The steady diminution of the birth-rate, compensated in a slight degree by a small diminution in the death-rate. It must be here observed that the expansion of a race cannot be measured solely by the birth-rate or the death-rate but by the difference between the two. Now in France this difference is extremely small, very much less than that which exists in any other country of which the statistics are known. 2. There is a perpetual emigration from the country to the town, so much so that during the decennium 1886–1896, while the total population of France increased only by 0·89 per cent., the increase in towns of over 5000 inhabitants was 11·52 per cent., which obviously implies a diminution elsewhere. This percentage rises with the population of the towns, so that while it is 1·3 in towns of from 5000 to 10,000 inhabitants, in towns with over 30,000 inhabitants it rises to 18 or even 20 per cent. 3. There is a marked decrease in the number of deaths due to epidemic disease. 4. The number of deaths due to tuberculosis is almost stationary. 5. The infantile death-rate is very high. The mean of the birth-rate for the period 1887–1890 was 24·05 per 1000, which fell during the period 1896–1898 to 22 90, a fall of 1·15 per 1000, or for the urban population of 12,000,000 a fall in the births of 14,700

per annum. The mean annual death-rate was for the period 1886–1890 24·56 per 1000, while for the period 1896–1898 it had fallen to 21·36, a fall of 3·2 per 1000. The total fall in the epidemic death-rate was 15,350. Deaths from diphtheria decreased by 5650, from typhoid fever by 3000, from small-pox and measles by 2800, from whooping cough by 900, and from scarlet fever by 400. As regards tuberculosis, the reports are as yet incomplete, but it will suffice to remark that the number of deaths headed "cause unknown" or of those not officially certified are much in excess of the deaths from tuberculosis, and probably a great number of the uncertified deaths are due to tuberculosis. The infantile mortality during the period 1896–1898 reached the enormous figure of 247 deaths per annum for every 1000 children under one year of age, but during the period 1887–1890 the deaths numbered 317. Out of 25,539 deaths, infantile diarrhœa is responsible for 10,189, a percentage of 39·9. Every municipality and medical man should do their utmost to make these statistics as complete as possible, for the advantages which will thus accrue to the hygiene of the country are obvious.

The Dangers of Anæsthesia by Injections of Cocaine into the Spinal Canal.

At a meeting of the Academy of Medicine held on March 19th M. Reclus gave an account of certain inconveniences and dangers which have been observed to accompany anæsthesia by the spinal injection of cocaine. Sometimes owing to various causes no anæsthesia or only a transitory one is produced. Sometimes, too, the practice brings about trembling, nausea, vomiting, paralysis of the sphincter, transitory paraplegia, intense headache, or even severe attacks of fainting. Death has sometimes occurred, as in the cases reported by Humbert, Dumont, Jonnesco, King, and others. The method, therefore, cannot be considered as being without danger.

March 26th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

General Staff Surgeon Dr. von Coler.

THE seventieth birthday of General Staff Surgeon Dr. von Coler, chief of the army medical department, was celebrated by the members of the army medical corps on March 15th. All well-wishers to the army medical corps will be glad to hear that Dr. von Coler, notwithstanding his advanced age, will continue to hold his appointment. The *Deutsche Medicinische Wochenschrift* rightly says that the army owes very much to the chief of the medical department, because during the last 20 years the amount of sickness in the army has decreased by 30 per cent. and the death-rate by 50 per cent. The army medical school has received special attention from him, and he has been the means of providing it lavishly with every requisite for modern scientific research. Among the various administrative questions ably dealt with by him not the least important was the making of arrangements for systematic post-graduate study by the medical officers of the army. All these officers have been required from time to time to attend a series of lectures and practical demonstrations specially delivered for them in Berlin and the other university towns, and the larger public hospitals have been induced to give facilities for young medical officers of the army holding assistant surgeoncies and other similar appointments for periods of one or two years. He favoured the publication of scientific researches as much as possible, and a great many celebrities in various branches of medical science served at first in the army medical corps—such men, for instance, as Professor Behring, Professor Lœffler, Professor Gaffky, Professor Goldscheider, and many others. He has been a strenuous upholder of the principle that the position of the medical officers in the army should be in accordance with the importance of their services. Dr. von Coler, who had himself the rank of a lieutenant-general, was the means of obtaining adequate military rank for them and of bringing them to be looked upon as comrades by the other officers. His principal merit, however, consists in the fact that he has never ceased to take an active interest in medical science, and that he has never allowed his subordinates to forget that they were not only military officers but also medical men. The members of the army medical corps have commemorated the seventieth birthday of their official chief by issuing under the designation of the "Coler Library" a series of publications representing every branch of medical science and written exclusively by present and past members of the corps. The first six volumes are as follows: A Treatise on Diphtheria, by Professor Behring; History of Small-pox and Vaccination, by Dr. Kubler; A Study on the Physiology of Marching, by Dr. Schumburg; Physical Methods of Treatment in Internal Diseases, by Dr. Buttersack; Surgical Operations in War, by Professor Fischer; and Aural Operations, by Professor Trautmann. Surgeon-General Dr. Schjerning acts as editor of the "Coler Library."

German Balneological Society.

The German Balneological Society held its annual meeting at Berlin from March 8th to 11th, under the presidency of Professor Liebreich. The proceedings began with an inaugural address delivered by the chairman, who commented on the great development of spas and health resorts in Germany. He spoke in favour of recent views according to which balneological treatment at spas ought to be resorted to more for prophylactic purposes than for the cure of disease already established. Artificial mineral waters, he said, would never be so efficacious as the natural products, notwithstanding the progress of chemistry, but a course of treatment at any spa, however celebrated, would be useless if not controlled by a competent medical man. He was glad to know that balneology had become a science like other branches of medicine.—Professor Kisch of Marienbad spoke on the treatment of gout by water containing salts of lime which diminished the excretion of phosphates and urates. Springs like the Rudolfsquelle at Marienbad, the Arminiusquelle at Lippspringe, and the Helenenquelle at Wildungen were therefore valuable in nephrolithiasis, in vesical calculus, and in gout. These waters had, moreover, a diuretic action.—Dr. Pariser of Homburg read a paper on Cholelithiasis. He warned his hearers against methods by which gall-stones were to be discharged from the gall-bladder into the duodenum. A total evacuation of the gall-bladder was never obtained and the sufferings of the patient were increased by the treatment. Cholelithiasis might terminate in spontaneous recovery, because at necropsies calculi were very often discovered in the gall-bladder of persons who had never complained of any pain. In Dr. Pariser's opinion the best way of guiding a case into this latent stage was to keep the patient in bed and to treat the attacks of colic with narcotics.—Dr. Frankenhauser of Berlin read a paper on the Administration of Medicines with the Aid of Electricity. When the electrodes of a galvanic battery moistened with a saline solution were put on the skin a certain quantity of the salt made its way through the skin and passed into the circulation, the amount depending on the strength of the current. A rabbit might be poisoned by using an electrode moistened with hydrocyanic acid. The practical use of these experiments was only small because no more than a small quantity of any drug could be absorbed in this way; Dr. Frankenhauser had, however, succeeded in producing local anæsthesia by cocaine applied in this manner.—Professor Kolle read an address on new researches in bacteriology and serum diagnosis. Immunity of an organism against the virulent action of bacteria might be obtained by the administration of antitoxic substances, as, for instance, in diphtheria by the injection of diphtheria antitoxin. Another kind of immunity was obtained when the organism had the power of destroying bacteria spontaneously by dissolving or coagulating them so that they lost their toxic action. In the course of his researches Professor Kolle had made some interesting discoveries as to the toxic action of the red corpuscles of the blood of certain animals. It had been known for a long time that blood of a given animal injected into an animal of a different description produced a toxic effect, and if after the injection the animal survived it now became immune against the blood of the same species. Rabbits might in this way be made immune against human blood, and if an injection of human blood was given to a rabbit thus immunised the red corpuscles of the injected blood were dissolved and rendered harmless, whereas if pigeon's blood was injected into the same animal it continued to be toxic. There was one interesting exception. An animal immunised against human blood was also to some extent rendered resistant to the blood of monkeys—a new proof of the narrowness of the dividing line between the simiæ and the human species.—Professor Winternitz of Vienna

spoke on the subject of treatment by exposure to electric light. Applied in this manner the electric light sometimes caused great pain, but this complication was completely avoided when the electric lamps were provided with red glass so that the chemical rays were absorbed. When patients took the so-called "sunlight baths" they ought to have coverings made of red cloth. This method was very ancient; it was recorded that in the middle ages patients suffering from small-pox were treated by exposure to the sunlight, their coverings being only of red materials.—Professor Liebreich in the discussion alluded to Dr. Finsen's treatment of lupus by electric light. The cases shown before the medical congress at Paris were by no means completely cured, but showed only a temporary improvement such as might follow the employment of other methods.—Dr. Munter of Berlin thought that phototherapy was contra-indicated in gout; he had observed the fits to become more severe during treatment than they were before.—Dr. Winkler of Neundorf recommended sulphuretted springs in psoriasis, acne, and furunculosis. With regard to eczema only chronic cases could be treated in this way; acute eczema was aggravated by this treatment.—Other papers read before the congress dealt with the hydrotherapy of measles, scarlet fever, and neuroses; "winter cures" in the Alps; the action of mud baths; physical methods of treatment in asthma and tuberculosis; the treatment of agrypnia; the food in heart disease; and many other subjects.

March 25th.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

The International Sanitary Council.

THE difficulties which arose between the Turkish Government and the International Sanitary Council in connexion with the appointment of an inspector-adjoint have at last come to an end. The Turkish Government now shows a disposition to assent to the inspector-general of the Sanitary Board, as well as the inspector-adjoint and the chief accountant (Muhassebedji), being appointed by the Superior Sanitary Council, which, according to the stipulations, appoints and dismisses the sanitary officials. The Sanitary Council will therefore agree to the appointment of Dr. Zitterer, whom the Turkish Government has made inspector-adjoint, but only on condition that the Government shall not hereafter endeavour to encroach on the rights of the Superior Sanitary Council and shall sanction only the appointments that this council makes. Dr. Zitterer is a graduate of the medical school of Constantinople, having taken his degree more than 40 years ago. At that time medical instruction was given in the French language and the teachers were professing Christians, but at present medical instruction is given in the Turkish language, the medical literature of which is not very rich.

Precautions against the Plague.

At the meeting of the Superior Sanitary Council held on March 5th it was resolved that hides and skins should no longer be regarded as capable of conveying plague, cholera, or yellow fever. No restraint will therefore be placed by the sanitary officials on their importation into the Turkish Empire.

Dinner to Dr. Torel.

Dr. Torel, medical officer of the French despatch boat stationed here, has had a seat on the Superior Sanitary Council for about two years as a French sanitary representative. Dr. Mirabel, médecin-en-chef des colonies, has now been appointed to this post and Dr. Torel is consequently about to return to France. His absence from the council will be much regretted, and his colleagues, as a mark of their esteem, have entertained him at dinner at the Cercle d'Orient, this being the first dinner given in honour of a member quitting the council.

The Antirabic Institute.

In recognition of Louis Pasteur's discovery of the antirabic treatment Sultan Abdul Hamid II. sent him the Grand Cordon of the Order of Medjidieh and a donation of 500 liras for the Pasteur Institute in Paris. Dr. Zoeros Pasha, by whom the decoration was conveyed to Paris, was instructed to make himself acquainted with the method of preparing the antirabic virus and with the other details of the treatment, and on his return to Constantinople he was appointed director of the Antirabic Institute here. Unfortunately, in consequence of some intrigue, he was compelled to resign his post and two new directors, both of them French medical men, have since that time been successively at the head of the institute. The results of the treatment of rabies appear to be less successful now than they formerly were and a painful impression has been recently created by the death of the director of the Greek school at Tatavla, a suburb of Constantinople. He applied at the Antirabic Institute the day after being bitten by a rabid dog, but in spite of treatment he died on the nineteenth day after the receipt of the bite. The case was discussed at a meeting of the Imperial Medical Society and was said by the director of the institute to be one of paralytic rabies.

Small-pox.

Small-pox has almost disappeared from Constantinople. At Medina, however, from the beginning of November, 1900, to the end of January, 1901, there have been 143 deaths from this disease.

March 20th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Report of the State Board of Charities for New York for the Year 1900.

THIS report is an extremely voluminous document containing some 180 pages. It is of special interest this year, it being by no means unlikely that it will be the last issued by the board as now constituted, a Bill having been brought in, greatly favoured by Governor Odell, which will wholly alter the present methods of distributing and supervising the charities of the State. From the report recently published it is gathered that the recommendations for appropriations to the State institutions within the board's jurisdiction amount to $1,733,755 (£346,751), the amount recommended for maintenance being $1,108,800 (£221,760) and for extraordinary expenses, mainly for construction work, $624,954 (£124,991). A new table of statistics in the report shows the number of inmates in the 11 State institutions subject to the visitation and inspection of the board to have been 4250 on Sept. 30th, 1900. Most of these institutions appear to be in a fairly good state, exhibiting marked improvement since the last report. The New York State Soldiers' and Sailors' Home at Bath, according to the report, cannot be in a very promising condition. It is disgracefully overcrowded and new members are constantly seeking admission. The board recommends the erection of new barracks. The most serious evil at this home, however, is the presence of 14 public-houses, mostly of low order, at the entrance of the grounds. These are supported mainly by the pension moneys of the members of the home and with the well-conducted canteen on the institution grounds should be unnecessary. The report announces that a State hospital for the care of dependent crippled and deformed children, the measure for establishing which became law in April, 1900, is now in working order, but that the institution is hampered for lack of adequate funds. The recommendation is therefore made that the State should order a sufficient appropriation. The report refers to a law of 1900 by which the Legislature established the New York State Hospital for the Treatment of Incipient Pulmonary Tuberculosis, and states that as the site has not been yet selected there is at present no call for action on the part of the board. The report shows that there are 1600 deaf persons being educated at the various schools for the deaf in the State, most of them maintained at State, county, or city expense. During the fiscal year ending Sept. 30th, 1900, the total number of State poor provided for by the Department of State and Alien Poor was 2004 as against 2135 during the previous fiscal year, a decrease of 131. During the fiscal year the department removed 70 alien poor persons to their homes in other countries. The State Board of Charities is doing excellent work at present and has well fulfilled its duties in the past, so that there seems to be no predominating reason why the existing condition of things should be changed. The whole matter is ably set forth in a leading article in the *New York Medical Record* of

Feb. 16th, 1901, and a strong plea is urged against the abolition of the existing board.

Anti-vice Crusade in New York City.

A wave of reform is sweeping through New York. The movement was initiated by clergymen of all denominations, backed by respectable citizens and headed by Bishop Potter. A committee of 15 has been formed to investigate the true condition of affairs and to suggest measures to stamp out or to check the evil. The physicians of New York are now interesting themselves in the matter, and at the meeting of the Medical Society of the County of New York, under the presidency of Dr. George B. Fowler, on Feb. 25th the subject was discussed. The chairman of the committee was present as was the head worker in the University Settlement, both of whom enunciated their views on the situation. Dr. Prince A. Morrow read a paper entitled "The Prophylaxis of Venereal Diseases in New York City: Medical Aspects of the Social Evil." Dr. Morrow first drew attention to the ravages caused in the community by venereal diseases and to the apathy evinced by medical men with regard to their prevalence. He said that at the present day the extermination of every contagious disease was the watchword of modern sanitary science, yet there was not a single city in the United States in which these diseases were subject to sanitary supervision. The arm of the law should be invoked in suppressing low dance halls, in raising the age of consent to 21 years and in meting out the severest punishment to the men and women who made a business of selling human beings into something worse than slavery. Public opinion, which often had a force independent of its merits, forbade the establishment in the United States of the European continental system of restriction. It had been tried in St. Louis for about a year, but had then been swept from the statute books by an avalanche of protest, principally from women and clergy. Dr. Morrow ended an eloquent address by saying that a higher order of education and *morale* among men must be looked to as the best means of diminishing prostitution. The vast majority of fallen women became so fallen not from choice, but because of hard social lines that forced them into the life. Society should deal with them as unfortunates rather than as criminals. Dr. Frederick R. Sturgis, in criticising Dr. Morrow's remarks, took a different stand on the matter. He doubted that syphilis was the fatal disease it was asserted by some to be, and averred if it were that the population of towns would be decimated. He was strongly of the opinion that alcoholism was far more dangerous to health than were venereal diseases. Dr. Sturgis urged that the most effective means of curtailing the spread of syphilis and gonorrhœa would be restrictive measures rigidly carried out. He protested against sufferers from venereal diseases being regarded as martyrs and treated free, and said that the physician who mixed medicines with morals was sure to come to grief; his true function was to show the people where the dangers lay. Dr. Charles W. Allen said that he was convinced that venereal disease was on the increase in New York and that in the first instance steps should be taken to control those people who would go out from the hospital while in the infectious stage of the disease. He also suggested, as he had done 10 years before, that the subject of syphilis should be made so much more public that the general reader might be instructed a little more and might thus be enabled to understand what family syphilis meant to the community. The chairman of the committee of 15 and the head worker in the University Settlement both agreed that the first and most important step forward must be with the medical profession, who must educate the people and so shape public opinion that the efforts of laymen in the same direction would be accepted and appreciated. Sexual vice is rampant in New York, more so probably than ever before, and it is a good sign that influential citizens are beginning to appreciate their responsibility.

Trial of Male Nurses attached to the Bellevue Hospital.

The public outcry against the reported condition of affairs in Bellevue Hospital culminated in three of the male nurses attached to the insane pavilion in that institution being put upon their trial for the murder of an inmate. The patient, a man named Hilliard, died suddenly, and upon a necropsy being performed by the coroner that official declared that his death was caused by injuries, among which was the fracture of the hyoid bone. These injuries were the outcome of violence, and witnesses were forthcoming who testified that they had seen the three nurses use very rough treatment to the deceased lunatic. Other witnesses declared that the man must have received his injuries while in Bellevue Hospital as he was free from bruises when he was admitted. At the trial of one of the nurses the evidence for and against was very conflicting, but finally it was found by the jury that there was not sufficient direct evidence to convict the nurse, and consequently he was acquitted. The verdict upon the whole must be esteemed a just one, the majority of the medical expert witnesses asserting that the dead man's injuries were not severe enough to cause death. At the same time conclusive proof was brought forward to show that unnecessary violence had been used on more than one occasion in the insane pavilion in Bellevue Hospital. Undoubtedly the public showing up of the New York municipal institutions will be productive of nothing but good, as it will pave the way for the introduction of drastic reforms and will be the means possibly of removing them from the control of politicians and placing them in the position which all rightly-managed charitable establishments should occupy. The other two nurses will shortly come on for trial upon the same charge as the one who has just been acquitted, but judging from the result in his case it is only reasonable to suppose that they, too, will be freed.

Mr. Reginald Harrison has been spending a holiday in the United States as the guest of Dr. Frederic S. Dennis, Hon. F.R.C.S. Eng. Mr. Harrison gave an interesting lecture in the new Cornell Medical College building which has been erected through the private munificence of Colonel Payne. The subject of his lecture was "The Prostate, Lithotomy, Renal Tension, and Antiseptics in reference to Genito-Urinary Surgery."

March 20th.

Obituary.

ARTHUR COPPEN JONES.

MR. ARTHUR COPPEN JONES, who was well known as a bacteriologist, died in the thirty-sixth year of his age at Davos Platz, on March 8th. For many years he had made Davos his home. Before his health broke down 15 years ago he had studied comparative anatomy under Huxley. When his health had been partly re-established he took up the study of bacteriology under Koch in Berlin. Later he did a valuable piece of original work on the morphology of the tubercle bacillus. His paper in the *Centralblatt für Bakteriologie* at the beginning of 1895 brought forward evidence that the tubercle bacillus should really be regarded as belonging not to the bacteria but to the moulds. In accordance with this view, and to indicate the resemblance to actinomyces in mode of growth in pure culture, he suggested the name "tuberculomyces" in place of the name in common use. For the last few years Mr. Jones was a great invalid, suffering much. Nevertheless he had the energy to produce the excellent translation of Fischer's book on the "Structure and Function of Bacteria," which appeared a few months ago under the auspices of the Clarendon Press. To old readers in the London Library Mr. Jones's father, the late Mr. J. E. Jones, was a familiar figure. Mr. Jones was an interesting talker and a pleasant companion. He will be greatly missed by the residents of his adopted home.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. J. H. Linsley, formerly Professor of Pathology and Bacteriology in the University of Vermont.—Dr. Dufraigne, formerly Senator for Seine-et-Marne.—Dr. Busey, formerly Professor of Materia Medica in the University of Georgetown, Washington.—Dr. Emil Kammerer, Oberphysicus of Vienna, to whom the city is greatly indebted for its sanitary organisation. He was only 54 years of age.

LITERARY INTELLIGENCE.—Under the title, "A Tour through North Eastern Ireland," Sir John W. Moore, ex-President of the Royal College of Physicians of Ireland, is writing some descriptive papers in the *Leisure Hour* for March and April. Intending tourists in the Emerald Isle should read these chapters by one who, as a prominent medical man, is able to know how well his country is adapted to supply the seeker after health and recreation.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—In March the following candidates passed in the subjects indicated :—

Surgery.—W. A. Brown, McGill; P. J. R. Bucknill (Section I.), Manchester and Dublin; R. Gillett (Sections I. and II.), Royal Free Hospital; J. I. Halstead (Section II.), Manchester; J. J. Haverson, London Hospital; W. J. Hogg (Section I.), Belfast; F. P. Joscelyne (Section I.), Leeds; C. A. Lower (Sections I. and II.), Guy's Hospital and Bristol; J. C. McCarroll (Section I.), Belfast and Middlesex Hospital; F. McTavish (Sections I. and II.), Toronto; C. G. Meade (Section II.), St. Bartholomew's Hospital; A. C. Oliver (Sections I. and II.), Charing-cross Hospital; and H. Smith (Section I.), Birmingham.

Medicine.—J. W. Bowd, St. Bartholomew's Hospital; W. A. Brown, McGill; P. C. Burgess (Section I.), Middlesex Hospital; H. P. Fox (Sections I. and II.), London Hospital; F. P. Joscelyne (Section I.), Leeds; J. Kemp (Sections I. and II.), Manchester; B. S. O. Maunsell (Section II.), St. Bartholomew's Hospital; J. C. McCarroll, (Section I.), Belfast and Middlesex Hospital; and W. B. Skelton, Guy's Hospital.

Forensic Medicine.—G. Aldridge, London Hospital; W. A. Brown, McGill; P. J. R. Bucknill, Manchester and Dublin; H. N. Collier, Guy's Hospital; W. P. A. Hardwicke, Durham; A. T. Harvey, London Hospital; D. T. Jones, Middlesex Hospital; F. P. Joscelyne, Leeds; J. Kemp, Manchester; J. C. McCarroll, Belfast and Middlesex Hospital; P. G. Sheppard, Cambridge and Liverpool; W. B Skelton, Guy's Hospital; and C. H. Williams, St. Bartholomew's Hospital.

Midwifery.—J. W. W. Adamson, St. George's Hospital; J. B. Bradley, Birmingham; W. A. Brown, McGill; A. T. Harvey and J. J. Haverson, London Hospital; H. C. Hocken, Cambridge and Westminster Hospital; F. P. Joscelyne, Leeds; F. M. Payne, Royal Free Hospital; W B. Skelton, Guy's Hospital; A. F. Van Dijk, St. Bartholomew's Hospital; and C. M. Woods, Charing-cross Hospital.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—G. Aldridge, W. A. Brown, H. P. Fox, F. McTavish, A. C. Oliver, and C. H. Williams.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. August Wasserman has been recognised as *privat-docent* of Hygiene.—*Cracow:* Dr. S. Maziarski has been recognised as *privat-docent* of Histology.—*Göttingen:* Dr. Schiek of Halle has been recognised as *privat-docent* of Ophthalmology.—*Rome:* Dr. Boari has been recognised as *privat-docent* of Surgical Anatomy and Operative Medicine, Dr. Lo Monaco as *privat-docent* of Experimental Physiology, Dr. Jacoangeli as *privat-docent* of Experimental Pharmacology, Dr. Bastianelli as *privat-docent* of Medical Pathology, Dr. Caselli as *privat-docent* of Surgical Pathology, and Dr. Berghinz as *privat-docent* of Pædiatry.—*Würzburg:* Dr. Burckhardt has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Zürich* Dr. Ernst Heuss has been recognised as *privat-docent* of Dermatology.

THE LONDON SCHOOL OF TROPICAL MEDICINE have signalised the successful working of the first 15 months of the school by the issue of a little *brochure* containing a report for the year 1899–1900, together with an account of the origin, progress, aims, and requirements of the school. Among the tropical diseases treated during the period mentioned we notice that there were 55 cases of acute malaria, four cases of chronic malaria, 29 cases of beri-beri, seven cases of guinea-worm, and four cases of plague. In the list of students who have passed through the school since Oct 1st, 1899, will be found the names of nine qualified medical women. At the present time upwards of 120 post-graduate students have passed through the school.

SEASIDE CAMPS FOR WORKING BOYS.—The thirteenth session of this useful organisation will open on Saturday, July 20th, and will close on August 31st. The camp, which was founded in order to give a seaside holiday to London working boys of good character whose means are too small to allow of a real holiday without help, is situated close to the sea and is under the charge of a commandant who while maintaining discipline teaches the boys to enjoy life, to learn about the country and the sea, to play games, and to get health and manliness so that they may return refreshed and strengthened to their work in London. The secretary is prepared to give lantern lectures on the subject on application to him at Northumberland Chambers, Charing-cross. The list of articles which each boy is required to bring with him to the camp does not, we notice, include an important aid to health—the tooth-brush.

INCREASED CHARGE FOR LUNATICS IN LANCASHIRE.—The Chorlton and the Prestwich Boards of Guardians have each received a communication from the Lancashire Asylums Board stating that at the last meeting the board had decided, on and after April 1st, to increase the weekly rate of maintenance for pauper patients received in the board's asylums from unions within the county from 8*s.* 9*d.* to 9*s.* 4*d.* The Chorlton Union has 731 patients in the county asylums, and the increased cost will make the yearly expenditure greater by £1108, and it will make a difference of between £300 and £400 a year to the Prestwich Union.

GENERAL HOSPITAL, BIRMINGHAM.—An influential and representative assembly attended the recent annual meeting at this institution. The annual report, the 112th, stated that there had been an increase of 347 in the number of in-patients and of 258 out-patients; the number of operations had advanced in three years from 1496 to 1702, and in 1900 to 1815. As to the finances during the past year the deficit of upwards of £700 had been reduced to about £1600. Sir J. C. Holder, Bart., intimated his desire to perpetuate the memory of the late Queen Victoria by dedicating a bed in the hospital as an "In Memoriam," an offer which was accepted, and subsequently a cheque for £1250, the amount required, was received from him.

SOCIETY FOR THE PREVENTION AND CURE OF CONSUMPTION IN THE COUNTY OF DURHAM.—A special court of governors of this society was held in the Town Hall, Sunderland, on March 19th, which unanimously sanctioned the expenditure of £1400 on the building of a new wing (to contain a large dining-room, kitchen, bedrooms for eight women, and bathroom for same); on the erection of a verandah on the south side of the main block; on the conversion of one of the present bedrooms into a bathroom for men; and on the conversion of a building into five additional bedrooms. These additions, which will be begun forthwith, will raise the accommodation to 25 beds and will comprise administrative accommodation for 40 patients and leave only 15 beds to be provided later in order to complete the society's scheme for 40 beds at Horn Hall Sanatorium, Stanhope. The chairman, Dr. Robinson, reported that the results obtained at Horn Hall had been as good during the winter as they had been during the previous summer and that they had quite come up to the expectations of the committee.

PRESENTATIONS TO MEDICAL MEN. — On March 8th a deputation representative of the parishes of Borthwick, Carrington, Heriot, Newbattle, Stobhill, and Tample, waited upon Mr. William Spalding, M.D. Edin., M.R.C.S. Eng., of Gorebridge, Edinburgh, at his residence, and presented him with an illuminated address and a cheque for £200 subscribed for by his many friends on his retiring from his public duties and professional activity during the long period of 39 years amongst them.—Mr. E. Sergeant, medical officer of health to the County Council of Lancashire, was the recipient of a presentation on March 22nd, subscribed for by the medical officers of health of the administrative county, on the occasion of his marriage in December last. The presentation was made in the Chemical Club rooms, Victoria Hotel, Manchester, the meeting being presided over by Mr. Chadwick, medical officer of health of Milnrow, who was supported by a number of medical officers of health. Mr. William Berry, medical officer of health of Wigan, made the presentation which consisted of a silver tray, silver fruit-knives and forks, and an album containing the names of the subscribers.—On March 22nd, at a meeting held in the Cottage Hospital, Auckland, of the governors and house committee, Mr. T. A. McCullagh, M.R.C.S. Eng., L.R.C.P. Edin., was the recipient of a testimonial, consisting of a valuable edition of Ruskin's "Stones of Venice," each volume containing an inscription stating that it was presented to him by the governing body and other subscribers as a token of esteem, and in recognition of his valuable services in connexion with the Auckland District Cottage Hospital as secretary and otherwise. At the same time Mrs. McCullagh was presented with a silver coffee-pot.—On the occasion of Dr. F. J. Allan resigning his post as honorary secretary of the London

Galloway Association, increased official duties being the reason of the resignation, the officers and council of the association presented to him with a gold ring and a set of four silver entrée dishes.

ANATOMICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—The committee of management of this society has arranged to hold the summer meeting of the society in the Medical Department of the Yorkshire College, Leeds, on Friday, July 5th (3 to 6 P.M.), and Saturday, July 6th (10 A.M. to 12.30 P.M.). The society's dinner will take place on July 5th, at 7 P.M. Dr. Wardrop Griffith is making local preparations for the meeting, and it is desirable that members should as soon as possible intimate to him, at 43, Park-square, Leeds, their intention of being present, so that he may make suitable arrangements for them, as a large meeting is expected.

Mr. Henry George Hawkins Monk, who since 1895 has been medical officer of health of the borough of Leicester, has resigned that appointment for a similar position in Kimberley, South Africa. Mr. Monk went to Leicester from Scarborough, and through his energies many much-needed improvements have been effected in the former town. Three years ago, however, his health gave way, and to this fact is due his acceptance of a colonial appointment. Mr. Monk sails from Southampton in the s.s *Norman* on April 6th, and he will carry with him to South Africa the best wishes of the people of Leicester.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—On March 14th the annual meeting of the subscribers to this hospital was held in the Stephenson Memorial Hall. The report for the past 12 months showed an increase of 48 more patients than in the previous year. The hospital at intervals had been very full and the patients remained for treatment for an average of 36 days. Though the ordinary income amounted to £2147, and the legacies to £533 there was still a deficiency on the year of £1200. The subject of establishing a medical ward was introduced and after some discussion a generous offer of Alderman Eastwood in respect thereto was accepted, provided that adequate funds were forthcoming for its support from the general public.

NATIONAL ASSOCIATION FOR THE PREVENTION OF CONSUMPTION AND OTHER FORMS OF TUBERCULOSIS.—The second general meeting of members of the National Association for the Prevention of Consumption and other Forms of Tuberculosis was held at 20, Hanover-square, London, W., on March 25th, the Earl of Derby being in the chair. The chairman, in moving the adoption of the report of the council, said that the second general meeting of the association marked a distinct period in their history. He claimed for the association that it had directed public attention in a marked degree to the necessity of dealing with tuberculosis as an evil to be combated in every shape. The report of the council was a very complete and full one, and in the variety of the subjects mentioned it would be recognised that the association had advanced. They hoped that it was a progress which time would assist. Their financial position was not such as to cause anxiety. The council had arranged for the meeting of the British Congress on Tuberculosis on July 22nd, and he believed that distinguished men of science from the colonies and European countries had freely responded to the invitation to be present. The principle of the early isolation of tuberculous patients had been recognised by public bodies and in some measure had been already carried out in some of the large towns. Steps had been taken in some districts for the notification of phthisis and also for relief, provided that the family arranged for the patient having a separate sleeping-room and taking other simple precautions. The progress of sanatoria was being pushed on, and he was glad to be able to report that the work of the association was going forward, and he hoped it would lead to still greater things. Professor Clifford Allbutt, who seconded the motion, insisted on the importance of securing early treatment in tuberculosis. Sir T. Dyke Acland directed the attention of the executive to the fact that in large agricultural shows there was no regulation to prevent the admission of tuberculous animals. Dr. C. Theodore Williams considered that in regard to unhealthy occupations help should come from the State. The meeting terminated with a vote of thanks to the chairman.

Parliamentary Intelligence.

HOUSE OF COMMONS.

THURSDAY, MARCH 21ST.

Unwholesome Tea.

MR. HENRY HOBHOUSE asked the President of the Local Government Board if his attention had been drawn to the quantities of inferior and unwholesome teas imported into this country which were alleged to contain microbial products dangerous to health; whether the inspectors of the Board had power to seize, analyse, and condemn such teas, and to what extent such powers were exercised; and, if, in the interests of public health, he was willing to institute an inquiry into the best methods of checking the sale of such unwholesome teas by determining some minimum standard of purity and by securing a proper analysis of such teas before they were blended with other teas.—MR. LONG replied: The Local Government Board have no definite information as regards the matters referred to in the first paragraph of the question. Under the Sale of Food and Drugs Act, 1899, the Board may in certain circumstances direct an officer to procure samples of tea for analysis. The result of the analysis is to be communicated to the local authority, and thereupon it becomes the duty of the local authority to cause proceedings to be taken just as if they had caused the analysis to be made. The Public Health Acts contain provisions under which articles of food which appear to be unwholesome or unfit for the food of man can be dealt with by officers of local authorities. I am not at present aware of sufficient reason for any such inquiry as that suggested.

Borax in Food.

MR. LONG, in the course of an answer to a question on this subject, which had special reference to Professor Thorpe's statement at a recent meeting of the Arsenical Poisoning Commission that he had found no borax of commerce free from arsenic, said that if it should appear that mixing borax with any article of food rendered it injurious to health, a person so mixing it with intent that the article may be sold in that state would be liable to proceedings under the existing law.

Vaccination in Poor-law Institutions.

MR. GODDARD asked the President of the Local Government Board whether officials appointed by a board of guardians were or were not under the immediate control of the board of guardians appointing them; and whether the superintendent of a home under the board of guardians could cause the children in such home to be vaccinated independently of the wishes of the parents or of the guardians.—MR. LONG: The duties of the more important officers of a board of guardians are prescribed by statute and by regulations made by the Local Government Board or their predecessors. The regulations generally contain a provision to the effect that the officer is to obey the lawful orders and directions of the guardians applicable to his office. The view of the Board is that under ordinary circumstances a child in an institution such as that referred to in the question should not be vaccinated if the parent or, in the case of an orphan or deserted child, the guardians, object.

Medical Officers of Health and the Diseases of Animals.

MR. FIELD asked the President of the Local Government Board whether any, and if so what, test of knowledge of the diseases of animals was required from candidates before being appointed medical officers of health.—MR. LONG replied: No test of the kind referred to is required by law.

Poor-law Patients and the Franchise.

MR. HENRY J. WILSON asked the President of the Local Government Board (1) whether he was aware that electors were disfranchised if they or members of their family dependent upon them were treated as patients in a workhouse hospital even though the guardians of the poor received full payment from the elector or his friends for the cost of treatment, and that the same disfranchisement took place if, owing to lack of hospital accommodation, the municipality arranged with the guardians for infectious cases for which the municipality was responsible to be treated at the workhouse hospital, and the municipality paid to the guardians the full cost of such treatment; and (2) whether the Government would take steps to prevent such disfranchisement taking place.—MR. LONG: I am not aware that the allegation contained in the first paragraph of the question is correct. I have no authority to determine whether an elector is disfranchised under any of the conditions referred to in the question or to take any steps in the matter, but so far as I am able to form an opinion a person would not be disfranchised in the circumstances stated.

The Holidays of Poor-law Medical Officers in Ireland.

MR. DALY asked the Chief Secretary to the Lord Lieutenant of Ireland whether he had called for the resignation of those officials connected with the Local Government Board who had been compelling boards of guardians in Ireland to give compulsorily four weeks' holidays to medical officers previously to the decision of the Court of King's Bench in this matter; and whether, seeing that this order cost the boards of guardians about £10 000, he would direct a refund.—MR. GEORGE WYNDHAM said that his reply to both questions was in the negative.

FRIDAY, MARCH 22ND.

The Plague at Cape Town.

MR. CHAMBERLAIN, in the course of a reply to a question on this subject, said that to check the plague the Cape Government were doing everything in their power under the advice of Professor Simpson, one of the best experts, and were having six medical men sent out specially for plague duty.

Inspection of Meat for Tuberculosis.

MR. LONG said, in answer to a question, that the Local Government Board had no prescribed regulations for the guidance of medical officers of health and sanitary inspectors with regard to the examination of meat for tuberculosis. The Royal Commission laid down certain principles which, in their opinion, should be observed in the inspection of tuberculous carcasses of cattle, and the Board in March, 1899, drew the

attention of all sanitary authorities to this matter and stated that the authorities should direct those of their officers who were employed as meat inspectors to act in accordance with the principles laid down by the Royal Commission.

SATURDAY, MARCH 23RD.

Case of Plague at Southampton.

Mr. JOHN CAMPBELL asked the President of the Local Government Board if he could give any information as to the reported case of plague at Southampton, and what measures were being taken to prevent the spread of the disease.—Mr. WALTER LONG replied: The case referred to is that of a Lascar who was one of the crew of the *Simla* and came under the consideration of the ship's surgeon when the vessel was two days out from Cape Town. Though regarded with some suspicion the case was deemed not to be one of plague and on arrival at Southampton the man was sent to hospital for the local abscess to be opened. This having been done and matter from the abscess having been bacteriologically examined the case was ascertained to have been one of bubonic plague. The man is now convalescent. An inspector of the Local Government Board has visited Southampton and he reports that all necessary precautions had been taken by way of disinfection and for keeping under observation the various persons with whom the man had been associated during the voyage and afterwards.

TUESDAY, MARCH 26TH.

The London Water Question.

At this sitting there was a long debate on the motion for the second reading of the Bill for the purchase by the London County Council of the undertakings of the eight companies which supply the metropolis with water. The Government opposed the Bill and promised to introduce next year, and endeavour to pass, a Bill based on the recommendations of the Royal Commission presided over by Lord Llandaff. The House threw out the Bill by 253 to 176 votes

WEDNESDAY, MARCH 27TH.

Beer Bill.

By 245 votes to 133 the House decided to give a second reading to the Beer Bill, a measure designed to enable consumers to distinguish between beer made from barley and hops and beer containing other ingredients Sir MICHAEL FOSTER spoke in opposition to the Bill, claiming that it was a retrograde measure and opposed to the march of science. He said that the epidemic in the Manchester district ought to have been foreseen, that if there had been an adequate watch over the materials used for the preparation of food it would have been known that since the South African war had used up all the sulphur the manufacturers of sulphuric acid had been resorting to pyrites. Invert sugar was not cheaper than malt and was used to supplement the alcohol obtained from the malt, and whether glucose was got from cotton waste or from German sawdust the ethylic alcohol was the same. Brewing, he said, was becoming a scientific occupation. Every year it was improving and the tendency was to produce for the consumer a better and more wholesome article at a lower price.

ROYAL COMMISSION ON ARSENICAL POISONING.

FRIDAY, MARCH 15TH.

THE Commission met again to-day with the same attendance as at the previous meeting and with Lord KELVIN presiding.

Mr. E. O. SIMPSON, solicitor, attended on behalf of Messrs. NICHOLSON, chemical manufacturers, Leeds, and intimated to the Commissioners that his clients had prepared a statement for submission to them. He was prepared to hand in the statement now but he asked that its public reading and any examination upon it might be postponed until, if possible, the legal action now pending with Messrs. Bostock had been disposed of.

The CHAIRMAN said that the Commissioners were perfectly willing to accept the statement now and postpone its public reading and examination upon it until a reasonable and suitable time, though they could not give a pledge that the postponement would be until after the decision of the legal action.

Dr. JOHN TATHAM of the Registrar-General's Office, examined by the CHAIRMAN, said that since he had been requested to attend in order to furnish the Commission with such information as could be gleaned from the national death register with respect to the mortality of certain diseases now the subject of inquiry by the Commission, he had had the advantage of perusing the most instructive report on arsenical poisoning submitted to the Local Government Board by Dr. Buchanan and as a result he had been able to see the kind of information that would be useful to the Commission. Up to the present time neuritis had not been separately classified in the Registrar-General's report. Ordinary neuritis was classified under the heading of nervous diseases, arsenical neuritis under arsenical poisoning, and alcoholic neuritis under alcoholism. About the middle of last year in abstracting the details in England and Wales for 1899 they noticed a considerable access of death return under the head of neuritis. It was some two or three months before they in London heard anything of the epidemic of arsenical poisoning in Lancashire. Some of the deaths were returned simply as neuritis, others alcoholic neuritis. When they came to abstract the details for 1900 he made arrangements that the deaths from neuritis should be separately classified in all possible detail, and by the end or shortly after the end of May he hoped to have that process complete. He hoped then to be able to give the Commission the number of deaths directly attributed to poisoning by arsenic, lead, and other mineral poisons, the number of deaths definitely ascribed to alcoholism as well as those frequently found to be associated with it, and the number of deaths ascribed to a combination of any of these causes.

By Sir WILLIAM S. CHURCH: The term neuritis had been very much more used in recent years than formerly. To go back for many years would be a troublesome and expensive process and he feared the result might be misleading.

Evidence of Dr. F. W. Tunnicliffe.

Dr. F. W. TUNNICLIFFE, Professor of Materia Medica and Pharmacology in King's College, London, was the next witness examined. His evidence had reference to his researches in association with Dr. Rosenheim upon selenium compounds as factors in the recent poisoning epidemic. He said that he and Dr. Rosenheim were able to obtain for analyses a sulphuric acid manufactured by Messrs. Nicholson which they had every reason for believing was used in the making of Messrs. Bostock's brewing sugar. This acid contained 0·3 per cent. of selenious acid and a relatively small amount of arsenious acid, 0·3 per cent. They further examined several other commercial sulphuric acids, one of which was said to be implicated in the epidemic. This, however, they doubted. The other acids were obtained in the open market from well-known makers. They all contained selenium in small quantities. One of them was practically free from arsenic. The highest amount of selenium found by them in a sulphuric acid was lower than that found by Drinkwater—namely, 0·4 per cent. in a commercial sulphuric acid examined by him. The results of witness and Dr. Rosenheim with regard to the presence of selenium in the practically arsenic free acids confirmed those of Schlactenhauffen and Pagel. The conclusion of importance to be drawn from these results was that from time to time there apparently cropped up a commercial sulphuric acid containing a dangerous quantity of selenious acid, and this latter might or might not be accompanied by an equally dangerous amount of arsenic. Hence it would seem advisable that sulphuric acid intended for use in the manufacture of food-stuffs should be supervised with regard to selenium as well as with regard to arsenic, especially as there should be no difficulty in freeing sulphuric acid from selenium. It seemed to him that it should be a comparatively easy matter to separate selenium from sulphuric acid.

By Professor THORPE: He only regarded selenium as being a factor, not as being at the bottom of the mischief. He was of opinion that the main cause had been arsenic, but the selenium had played a part—a subsidiary part. It was not the term brown oil of vitriol that awakened their suspicions; they went down the list of impurities in sulphuric acid and they found selenium.

In further examination by the CHAIRMAN Dr. TUNNICLIFFE said that they next examined two sugars; in one (invert) which came to Bostock's and was used in the preparation of the beer implicated in the epidemic they estimated the selenium quantitatively; in the other (glucose) they simply demonstrated the presence of selenium. The invert sugar contained 0·1 selenium pro mille = 0·14 selenious acid, or 1 in 7000. The invert sugar from the same firm contained, according to published analyses, from 0·3 to 0·4 pro mille As_2O_3. In this connexion they made some experiments with regard to the behaviour of selenious acid in solutions of glucose. They found that this substance might be dissolved in sugar solutions to almost any extent, the resulting solution remaining perfectly clear. They made further an extensive series of experiments with regard to the behaviour of yeast in seleniated sugar solutions. They fermented sugar solutions containing selenious acid in quantities varying from 1 in 100,000 to 1 in 50. Generally speaking, the activity of the yeast, as measured by the production of carbonic acid gas, was not influenced by the presence of selenious acid. In the strong solutions, however, from 1 in 50 to 1 in 500, the activity of the yeast underwent a diminution. Even in the case of the 1 in 50 solution fermentation still took place. The only experiment made in this connexion previously was that of Chabrié, who found that no fermentation took place in a 3 per cent. solution of selenious acid. Yeast had the property of reducing some of the selenious acid to selenium and fixing the latter. In strong solutions (from 1 in 50 to 1 in 1000) under these conditions the yeast assumed a red tint, in some cases actually brick red. Even in solutions of 1 in 10,000 it became pinkish red. They estimated the actual quantity fixed by the yeast and found it to be very small. The selenium was not precipitated as such on the surface of the yeast cell, but was distributed in granular form throughout the cell substance. Under the microscope cyanide of potassium might be seen to dissolve completely out the fixed selenium. These observations entirely confirmed the results of Scheuerle upon the action of selenious acid upon bacteria and moulds; their activity (virulence) was not affected, and selenium was deposited throughout the body substance. They were able to demonstrate the presence of, and estimate the quantity of, selenium in two separate samples of beer emanating from the Salford Brewery, identical with that which was actually consumed by the sufferers from beer-poisoning. Sample A contained 6·2 milligrammes per litre = 0·38 grains per gallon (SeO_2). Sample B contained 5·8 milligrammes per litre = 0·36 grains per gallon (SeO_2). They understood from an independent analysis that this beer contained slightly under one grain of arsenic per gallon. These results showed that when an acid contaminated with selenium was used for the manufacture of brewing materials the selenium passed into the final product—namely, the beer; its quantity in this latter depending upon the quantity originally present in the acid. In the case of Nicholson's acid and Bostock's invert it was present in the beer in poisonous quantities. They made no experiments in regard to malt but he would point out that the flue-dust of certain coal and coke contained selenium. The pharmacology of selenium was practically entirely confined to experiments upon animals, but these were so clear and so numerous that the results might be applied with certainty to man In this connexion selenium has been nearly always compared with arsenic. It was a known fact that arsenic produced the same symptoms in animals as it did in man, and they might with certainty assume the same to be true of selenium. Japtha in 1842 took selenium himself and found that even the metal itself produced marked tissue wasting. Rabuteau, in 1869, from experiments upon animals regarded SeO_2 as having the same action and the same toxic power as As_2O_3 Czapek and Weil, in 1893, came to the same conclusion as Rabuteau; they found that 0·003 grammes (pro kilo body weight?) of SeO_2 killed in a few hours dogs, cats, and rabbits. Chabrié arrived at the same result. This observer noticed a symptom in selenious acid poisoning of interest—namely, the fact that it caused greatly increased bronchial secretion (bronchitis). This had often been observed in arsenical poisoning in man and might very likely be due to the contamination of the arsenic with selenium. Both Chabrié and Czapek and Weil concluded that acute poisoning by selenious acid was similar in all respects to acute poisoning by arsenious

acid. The subject was next taken up by Modica, 1897-98. So far as acute poisoning was concerned he entirely confirmed the results of former observers; he, however, made a most important addition to their knowledge of the subject in that he produced chronic poisoning by selenious acid and compared it at the same time with that produced by arsenious acid. He gave animals doses of selenious acid continuously for 40 days. His results were most important with regard to the subject in hand. He showed that selenious acid caused paralysis, wasting, and degeneration of the hair and inflammation of the subcutaneous tissue. He further showed that although in the case of the arsenicated animals he had, in order to produce symptoms, gradually to increase the dose of arsenic given; in the case of the seleniated animals he had to diminish it or the animals would have died. In other words, that whereas the animals became tolerant to arsenic the poisonous action of selenium was cumulative. This author in a further research upon the action of selenious acid upon metabolism showed that the wasting was due, not as it usually was in arsenical poisoning to gastro-enteritis—i.e., to diminished assimilation—but to increased nitrogenous waste (katabolism).

By Sir WILLIAM S. CHURCH: The experiments were made with several species of animals, including cats, dogs, rabbits, and frogs. Selenium had never been looked for as a source of poisoning in man in the past, but no doubt it would be in the future.

In further examination by the CHAIRMAN Dr. TUNNICLIFFE dealt with the application of the presence of selenium compounds in the beer and the pharmacology of this substance to the explanation of the symptoms in the Manchester epidemic. In this connexion he said:—

(*a*) The symptoms which undoubtedly arose from very small doses of arsenic are much more easily explainable when we remember that to the small dose of arsenic consumed a small dose of selenious acid must also be added.

(*b*) The almost entire absence of tolerance to arsenic in the Manchester patients is also probably to be explained by the presence of selenium compounds in that tolerance to this latter poison apparently does not occur.

(*c*) The marked occurrence of wasting in the Manchester patients occurring independently of gastro-enteritis is to be explained by the specific action of selenious acid.

(*d*) The occurrence of symptoms of so-called arsenical poisoning in cases in which the presence of arsenic in the ingesta was not shown and also explainable by selenious acid.

(*e*) The aberrancy of the symptoms of the so-called arsenical poisoning in former epidemics are probably due to the contamination of the arsenic with selenium in varying proportions.

Selenium, Dr. Tunnicliffe added, did not produce gastric symptoms to the same extent as arsenic.

Sir WILLIAM S CHURCH said that he himself had seen several of the patients in Manchester and it did not strike him at the time that wasting was a very leading feature of the cases.

Dr. A. P. Luff Examined.

Dr. ARTHUR PEARSON LUFF, physician in charge of out-patients and lecturer on medical jurisprudence and on public health in St. Mary's Hospital, London, and one of the scientific analysts to the Home Office, gave evidence as to his work in connexion with the expert commission of the Manchester Brewers' Central Association. He said that he saw a large number of the poisoning cases at the Manchester Infirmary, the Crumpsall Infirmary, and the Hope Infirmary. The great majority of these cases were undoubtedly cases of arsenical poisoning, but modified by the diluted form in which the poison had been taken, by the actual amount of arsenic taken, by idiosyncrasy, and probably by the alcohol and other compounds taken in conjunction with the arsenic. In the great majority of cases the illness began with pains and loss of power in the feet, succeeded or preceded by tingling in the soles of the feet and pains in the calves. In nearly all the cases the extreme tenderness of the calves was a very marked feature. A peculiar huskiness of the voice was also present in a large number of the patients. Amongst the common early symptoms were also tingling of and loss of sensation in the feet and hands, followed by loss of power and ataxy, with a peculiar stepping gait. Pigmentation was one of the marked symptoms amongst the dark-complexioned patients, but was only present to a very slight extent among the fair-complexioned individuals. It generally started as an erythema on the upper part of the chest, thence spreading to the face and hands. This erythema was followed by pigmentation, which was especially evident in those regions where pigment normally occurred, but was also frequently present all over the body. In some cases the individual almost resembled a mulatto as regards the colour of the skin, whilst in others the resemblance to a case of Addison's disease was very marked. Of the other skin affections keratosis of the feet and occasionally of the hands and erythromelalgia were met with. The amounts of beer admitted to have been taken varied from two pints to 15 pints per diem, the average being about from four to five pints per diem. In one case only was the amount admitted to be below two pints, and that was the case of a female, aged 42 years, who, although most carefully questioned on the subject, would only admit the consumption of two glasses of beer a day, and of four or five glasses on Saturdays. Her case was one of well-marked peripheral neuritis, together with the characteristic gait, but with an entire absence of either arsenical pigmentation or any arsenical rash. In only five cases out of the 40 had any spirits been taken for some months, and then, according to the statements of the patients, only in small quantities and very occasionally. He was of opinion that the alcohol of spirits was not a factor in the production of the peripheral neuritis of any of the cases under consideration. In his experience the cases of arsenical poisoning at Manchester differed somewhat from the chronic arsenical poisoning with which he had formerly been acquainted, such as that caused by arsenical wallpapers and by the use of long-continued full medicinal doses of arsenic, in the marked character of the pigmentation and of the skin eruptions in so many of the cases. They also differed from cases of subacute arsenical poisoning in the general absence of marked affections of the gastro-intestinal tract. In his opinion the cases should be classed as intermediate between subacute arsenical poisoning and chronic arsenical poisoning as formerly understood. He was also of opinion that most probably the arsenic was taken in such quantities that had the amount been taken in a smaller bulk of fluid subacute arsenical poisoning would probably have resulted, but that being taken in such a large bulk of beer there occurred a rapid absorption of it from the stomach and intestines, and also a rapid elimination of a considerable amount of the arsenic by the kidneys. Another lesson probably taught by the epidemic was that the views hitherto held as to arsenic being a non-accumulative poison would probably have to be modified. Some of the symptoms point to the fact that the arsenic must have accumulated and have been retained in the system for a considerable period of time.

The Commission adjourned to meet again in Manchester on March 25th.

MONDAY, MARCH 25TH.

The Commission met to-day in the Town Hall, Manchester, for the purpose of examining certain local witnesses. Lord Kelvin was not present and the presidential chair was consequently taken by Sir William Hart Dyke, M.P., the other members of the Commission present being Sir William S. Church, Professor Thorpe, and Dr. Whitelegge.

Mr. R. G. H. THOMSON, manager of Threlfall's Brewery Company, Limited, gave an account of the methods of his company in regard to the use of invert sugar and described the precautions they now take to secure the purity of all brewing materials. Until the outbreak of the epidemic, he said, he had never heard of arsenical poisoning through the medium of beer and had never suspected such a thing. It was also news to brewers that malt could be impregnated with arsenic by the fumes from the fuel used in making the malt.

Dr. MILLER, consulting chemist to a number of the local breweries, bore out the statement that it was only since the epidemic that beer had been tested for arsenic, and said that any beer brewed at the present time in this country would show traces of arsenic if the test were made severe enough. With regard to the malt he said that many malts were now perfectly free from arsenic, but there still appeared to be a difficulty in some cases in getting this absolute freedom. He was of opinion that some test should be applied to the coke.

Professor H. B. DIXON of Owens College gave evidence as to the manufacture of sulphuric acid in this country and the quantity of arsenic usually present in the Spanish pyrites from which most of it was made.

Dr. T. N. KELYNACK was examined at some length with regard to the symptoms exhibited by the patients. The poor, he said, suffered most severely and although both men and women were affected the majority of the fatal cases occurred in women. He had no doubt in his mind as to the cause of the outbreak. In no case had he been able to trace the sugar to any other source than the Messrs. Bostock. In his opinion there should be a statutory test applied to all materials used in brewing. He suggested that there should be analytical laboratories established directly under the control of local authorities and subject to systematic inspection by experts acting under the direction of the Local Government Board.

Mr. W. KIRKBY of Owens College gave evidence as to the results of certain analytical work.

The Commission then adjourned.

THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

SPECIAL GENERAL MEETING OF GOVERNORS AND SUBSCRIBERS.

UNDER the chairmanship of Lord HALSBURY, the Lord High Chancellor, a special general meeting of governors and subscribers was held at the National Hospital for the Paralysed and Epileptic on March 23rd for the purpose of considering, and if approved, of passing motions providing for an independent inquiry into the allegations contained in the statement issued by the medical staff to the governors in June, 1900, as a condition precedent to any reconsideration of the demand of the staff for direct representation upon the Board of Management and also laying down the conditions essential to be observed with reference to such inquiry.

The meeting was held in the out-patient room and there were upwards of 200 governors and subscribers present.

The LORD CHANCELLOR having been called to the chair said: The business which has caused the summoning of this meeting deals with a situation which undoubtedly is most injurious to the hospital but which seems to me, by reason of various conversations with different members both of the medical staff and of the board, to be very nearly approximating to settlement. In taking the chair I wish to profess myself absolutely impartial, but at the same time I do not dissociate myself from my colleagues on the Board, and I will explain how I think these two propositions are reconcilable. I am of opinion that the question which has given rise to the difference among us is one which may very properly be a subject of debate but which need not cause acrimonious discussion. We must all remember, and I am sure I strive to do so, that we are engaged in furthering an object which we all have at heart—the relief of suffering. Speaking not simply as a member of the Board of Management, but as one member of the State, nothing would seem to be more injurious to such an institution as this than a violent controversy between those who have the responsibility of the management and those men of great eminence and skill on the staff whose self-sacrifice and devotion to duty have undoubtedly been of inestimable advantage to those who benefit by this institution. But I decline to look at this meeting as if it were an array of hostile forces. It is rather my hope and belief that it will be conducted in that spirit of conciliation which animates all of us who are desirous of doing what is best for the hospital and for those who receive its benefits. And I am quite sure that if we are actuated by that spirit, and if, remembering that peradventure we are not all absolutely in the right, we make some little allowance for the faults and feelings of others, we shall arrive at a final conclusion of a matter which no one can doubt is most injurious to the interests of the hospital. For my

own part, I regard the question which has given rise to the controversy as one upon which my mind is really open. Although I voted with the Board on the question of representation of the medical staff upon the Board there is no doubt that there has been undoubtedly a statement of facts which, if they are true and if they are not remedied, would prevent me from consenting to be a member of the Board of Management for one day. These matters ought to be decided, and of course it would be perfectly idle to suppose in a meeting of this sort that we should admit the accuracy of allegations and denials without the least opportunity of investigating them. This meeting, I understand, is called together to decide to what extent these matters shall be investigated. So far as I am concerned, as soon as that is decided by the governors I shall be the first to bring forward the other question—viz., that the representation of the medical staff on the Board should be reconsidered. I hope that we shall be able briefly and harmoniously to determine the question now before us.

Mr. G. W. E. RUSSELL: I have been asked by my colleagues on the Board to move the first of the two motions which are, I suppose, in the hands of everyone. I will read the first motion which I have in charge:—

> *That inasmuch as the demand of the medical staff for direct elective representation on the Board of Management has been expressly based upon certain allegations contained in a statement that was issued by the medical staff to the governors in June, 1900, and inasmuch as it would be impossible to test the accuracy of such allegations at a meeting of the governors, it is hereby resolved that an independent inquiry into the accuracy of these allegations ought to precede any reconsideration of the demand of the medical staff.*

The Lord Chancellor has stated with perfect accuracy that this resolution concerns, not the rights and wrongs of the constitutional question whether the medical staff can claim direct elective representation on the Board, but a separate though not unconnected proposition. We are asked in the terms of this resolution to affirm that an independent inquiry into the allegations made in the statement issued to the governors last summer should precede the inquiry into the constitutional question. I am not going, therefore, to re-argue the merits of the question of direct elective representation. Last summer it became my duty to state my views on the subject clearly and there is no need to re-state them. But it is necessary to recapitulate the steps that have brought us to our present position. The demand of the medical staff is an old demand; it began and was formally made, if I am correctly informed, exactly 10 years ago. It was then opposed by the Board and fell for a time into abeyance. Other methods of communication between the Board and the staff were proposed in preference and were more or less steadily acted upon. Under one of these methods the medical staff sent two delegates to meet the Board to discuss medical questions and that is the form of procedure which was in use up till a recent date. In February, 1899, a rather acute controversy arose between the medical staff and the Board, the question at issue being not, as I can conceive, a medical question. Notoriously the expenses of this hospital in working and management have increased very rapidly. It would be carrying me out of my province to discuss this in detail, but the fact is absolutely without doubt. It became necessary to look round and see whether we could not raise the income of the hospital in something like the proportion of the ever-increasing demands made upon it. It occurred—I think I am right in saying this, though on this point I speak subject to the correction of Mr. Rawlings, our indefatigable secretary, who, whatever else he may be, has been a wonderful chancellor of the exchequer—it occurred to him as a good plan of increasing the income to sanction a small payment by such out-patients as were ready and willing to make it for the medicines supplied to them in this place, not for the treatment. That seemed to us on the Board not to be a medical question but one merely of finance and administration, and those are the questions which, if there are any at all, we consider ourselves competent to deal with and which we by our office and in virtue of our position ought to deal with. Therefore, we proceeded to sanction this alteration in our working system and the result is that we make about £800 a year for the hospital, a sum which cannot be regarded as an inconsiderable contribution to our income. It is a clear gain to the hospital. No hardship is inflicted and nobody is forced to pay. I am informed that the better sort of our patients are really eager to make this small acknowledgment of the benefits they have received by paying for their medicine. At any rate, that system of payment was decided upon by the Board, and I am bound frankly to state in opposition to what we knew to be the consensus of opinion of our medical staff. Shortly afterwards there arose a regrettable misunderstanding. The matter was made the subject of discussion and controversy between the medical staff and the Board, the medical staff being at that time represented by two delegates sent to discuss medical matters in the Board room. There was no doubt that our intention was that these two delegates should be present throughout any discussion on the subject which took place. Owing to an unfortunate accident at some adjournment of the discussion the two representative medical delegates were not invited to be present. So that at the very last stage, not at a preliminary stage, the final decision was taken in the absence of the two representatives of the medical staff. The medical staff then declined to continue the system by which they were represented on our Board by two delegates. They said it had broken down and they declined to carry on any continuance of it, thereby producing a deadlock in the official communications between the medical staff as a corporate whole and the Board, though free communication took place between individual members of the staff and the secretary-director of the hospital. The next step in the controversy came upon us as a very great surprise. In a document dated, if I remember right, May, 1900, that was circulated about June 16th, 1900, a communication was sent out to the governors which most of us are familiar with. For the sake of refreshing the memory of my hearers I read the title: "To the Governors of the National Hospital for the Paralysed and Epileptic, Queen-square." It continues, "We, the members of the medical staff, think it our duty to bring before your notice the fact that to our knowledge the administration of the hospital is very unsatisfactory and that the reputation of the institution is in danger of being seriously compromised." The conclusion is, "In closing this brief survey of the present condition of the hospital, which the medical staff feel it their duty to submit to the governors, they call attention to the following conclusions, which have been unanimously agreed to:

1. That to safeguard the interests of the patients and the reputation of the National Hospital by coöperation of the Board of Management and the medical staff it is indispensable that the medical staff be directly represented on the Board of Management.
2. That in view of the impossibility of their continuing the work at the National Hospital under existing conditions the medical staff appeal to the governors to effect this necessary change in the management of the hospital."

That document was circulated to the governors of the hospital without any reference to the Board as such. Of course, those who were members of the Board were also governors and would receive it in the ordinary course; but it did not come before us officially and as a body, and when it did come to our notice as individual governors I confess that its receipt filled us with surprise. The document contains the following allegations: "The first matters on which the medical staff have to report to the governors are those affecting the immediate interests of the patients, as follows:—(1) the diet of the patients; (2) the condition, care, and treatment of the patients; (3) the nursing of the hospital; (4) on the cause of the maladministration of the hospital; (5) details of the manner in which the present administration has prevented coöperation of the medical staff and Board of Management." These last two items, (4) and (5), may now be disregarded. The items of which I am now speaking are those which set forth in very great detail and in very uncompromising terms allegations to the effect that the diet of the patients was wrong in quantity and quality, that their condition and care and treatment were unsatisfactory, and that the nursing of the hospital was not properly and efficiently organised. Now I say if these allegations are borne out by facts every one of us would feel that a very heavy responsibility lay at his own door. It was therefore a very great source of astonishment and regret to find that our medical officers had thought it necessary to commit themselves to statements of so grave a sort—statements which I must remind my hearers would amount to a heavy indictment against the persons having the oversight of the hospital; and I include not only the Board, but of course our very efficient representative, Mr. Burford Rawlings. We none of us knew that any of these complaints had been lodged by anybody, and as far as I was concerned they came to me as absolute novelties. I am not fond of talking about myself in public, but in one sense I am justified in quoting my own experience, because ever since I have had the honour of being connected with the hospital (which I originally joined at the earnest instance of Sir William Gowers), ever I have made it my habit to be in the wards constantly, that I may see as much as I can of the actual state and comfort of the patients. My ears have been always open to complaints and my eyes open to any abuses, if such were visible. I believe on my part that everything was worked as well as it could be in the hospital, the patients were well looked after and thankful for the benefits they had received, and a general tone of contentment reigned supreme. Great was the astonishment of myself and my colleagues when we found that our administration was so faulty as was alleged in the statement of the medical staff to the governors. Mr. Rawlings was equally unaware of any serious cause of complaint. We were, in a word, taken by surprise. We might have thought (I do not lay any stress on this) that it would have been better if our medical friends had made these representations directly to us in the first instance and then, if not satisfied, had reported the matter to the governors; but that was not the course which commended itself to them and they were entirely within their own rights in going to the governors; but when they had done that we were quite within our rights in investigating these allegations of mismanagement on our own account. Supposing the facts were as alleged the guilt must lie on those who were employed and paid by us for their services and upon ourselves for exercising insufficient vigilance in the interests of the patients. We called a sub-committee which sat during the hottest summer weather and investigated the wards and kitchens and every corner and section of the hospital. We examined all the witnesses who were most likely to add anything to our knowledge—sisters, nurses, and servants in succession. We reported that the charges had what I should call no substantial basis; they could only be made good in such small and irregular instances as must always occur, as I imagine, in the food arrangements of a very large institution which is served from one kitchen. When we had made up our minds and reported it was judged to be necessary to summon a meeting of the governors and that was done in August. It was an inconvenient time to us as well as to everybody else. No one would choose August as a suitable date for a public meeting in London, but it was the earliest possible date after the allegations had been made and inquired into, and we thought that we should allow no time to elapse before we put the result of the inquiry before our governors and judges. On that occasion the constitutional question was argued and was decided against the claims of the medical staff. The moment that decision was made known a rather fierce and acrimonious controversy began in the public newspapers. We had then arrived at the silly season when the newspaper people are only too thankful to have a little extra pabulum, and this really small dispute was by journalistic intervention and enterprise magnified and distorted to the very highest degree. Contributions poured in from some correspondents, some of whom I would say with great respect were not absolutely well informed on the facts at issue. With regard to my own part in that controversy it consisted in a reference to my speech made in this room at the August meeting. I then spoke from the material supplied to me by our professional advisers. I stated in referring to the practices of other hospitals in London that the Brompton Consumption Hospital was one of those which did not admit direct medical representation on its Board of Management. As soon as I had stated that a letter appeared in the *Times* from a very highly respected member of the profession, Dr. J. E. Pollock, saying that I was so far misinformed that at Brompton all the medical staff were honorary members of the Committee of Management. On receiving that authoritative contradiction I made haste in the *Times* to express my regret that I had been misinformed. But only the other day it happened that I received from Dr. Pollock himself, in reply to a question which I had put to him, a rather interesting piece of information. It was to this effect, that although at Brompton the members of the medical staff are ex-officio members of the Committee

of Management they are only entitled to speak there but not to vote. That is so extremely a different position from that claimed on behalf of our medical friends here that I think that my original statement made upon the authority of our advisers was not substantially very wide of the mark. I am reminded by Mr. Bower that Dr. Pollock also said that practically they only attended the Committee of Management when medical matters came up for discussion. During the autumn months this controversy raged with some acrimony, and by degrees during our autumn holiday we, most of us, severally came to the conclusion that those who had best right to be concerned in the matter—that is to say, the subscribers to the institution generally—were not entirely satisfied with the result of our domestic inquiry or with the vote taken at the August meeting. We had hoped that that inquiry would meet the case and would have brought the controversy to an end. But when we saw that there was uneasiness in the minds of those who have the interests of the hospital very sincerely at heart we came unanimously to the conclusion that a fresh inquiry should be undertaken into the allegations of mismanagement and that it should be undertaken by some competent external authority. I need hardly assure my hearers, among whom I recognise some old friends, that there was no inclination on our part to shrink from the fullest investigation of what we had done, imperfectly perhaps, but with good will, in the administration of the hospital during so many years. We welcomed the prospect of an inquiry conducted by some person whose occupation and habits of life have accustomed him to the sifting and weighing of evidence. We were not disposed to submit to that inquiry any question except the allegations of mismanagement. But it became evident, from communications which we had with our medical friends and others, that a much greater degree of public satisfaction would be attained if we waived our own opinion and allowed the constitutional question of representation to be included with the question of mismanagement in the scope of the inquiry; and with a view to carry out that twofold inquiry we invited, through the intervention of the Lord Chancellor, the good offices of an ex-judge of the Supreme Court, Sir Ford North; and although Sir Ford North was willing to place his services at our disposal the medical staff, speaking through the Medical Committee, declined to recognise an inquiry conducted by him and appointed by us. They refused to render assistance by appearing and giving evidence, which would be necessary in order to secure a thorough investigation of their charges. In December last, I believe, we yielded and conditionally consented to the inclusion of the constitutional question in the inquiry, only stipulating this much, that whoever should hold the inquiry should be entitled to consider not merely the demand of the medical staff for a particular form of representation—namely, the direct representation of two members on the Board—but also any other form of representation such as might be suggested by the experience of other hospitals or might commend itself to the minds of many of us as a more workable arrangement. Almost at the eleventh hour, hoping still to save anything like a pitched battle, if that be not too strong a phrase, we suggested to the medical staff that they should consider whether any of the alternative forms of representation, some of which my colleague, Mr. Pearman, was responsible for, would be acceptable to the medical staff. But we were told very emphatically and plainly that they would be satisfied with nothing but the one form on which they had set their hearts—namely, the direct election of two representatives to sit on the Board. (Cries of "Time, time.") The cries of "Time" are very apposite, as I have come to an end of what I have to say. The history has now been adequately presented and we have now arrived at a point where I hope a decision will be arrived at with something like practical unanimity. We invite an inquiry into the allegations which we consider still to be unproved and still unwithdrawn, the allegations into the mismanagement of our patients; and we consent to an inquiry into the question of some mode of securing medical representation on the Board. It is the first resolution which we are now asking your judgment upon. It is only a question of precedence. We ask you to affirm in the first resolution that the question of inquiring into these allegations should precede the constitutional question of representation of the medical staff on the Board. The demand for representation was based on the allegations in the original terms of the circular. (Loud cries of "No, no.") We therefore only ask you now to instruct whoever has charge of the conduct of this inquiry to investigate first the allegations of mismanagement. If they turn out to be well founded the constitution of the Board of Management will afford serious consideration to the hospital authorities. If they turn out to be ill founded it will be for the governors to consider whether the gentlemen who are responsible for such accusations can with advantage serve on the administrative body of the hospital. I therefore move the first motion.

Mr. F. C. CAPEL: I shall not detain you more than one minute. I have been asked to second the motion which would have been seconded by Lord Harrowby who unfortunately is ill. After what has been said by the mover of this motion it is unnecessary for me to add any remarks. I therefore second the motion.

Mr. MELVILL GREEN: I intend to move an amendment. I believe that most in the room have a copy of it. The motion before us should be read. It begins by stating that a demand of the medical staff for direct elective representation of two of their number to the Board of Management is based upon allegations issued in 1900 in the month of June—that is to say, it alleges that a demand which has been made for 10 years or more is based upon a paper issued last spring. That is a difficult statement to assent to and I would rather not try. The next statement is that it is impossible to test the accuracy of such allegations at a meeting of the governors. Quite so. It is impossible to ascertain a great many things in public meetings like this and therefore there should be an inquiry both full and complete and, to use the secretary's words, exhaustive. We are asked to pass a motion for an independent inquiry into the accuracy of these allegations and that this ought to precede any reconsideration of the demands of the medical staff. This is a very remarkable motion. It does not say that there is presently to be an inquiry into the demands of the medical staff. It does not even say that there is now to be an inquiry into the accuracy of the allegations. It affirms only this, that the inquiry should be two and not one and that one of these should precede the other—that is, the whole demand made by this motion. I am going to ask you to dissent from this view altogether. I do not want to refer to history because I am of opinion, as you mostly are, that the object of all of us should be to bring about harmony as soon as we can and as readily as we can, and I think that references to history, if they are faithful, are only likely to provoke further irritation. But I must go back as far as August 11th. I was very pleased with a remark which fell from the mover of the motion that the resolution arrived at in this room on August 11th was arrived at in the silly season. I quite agree with that. On August 11th and up to Dec. 10th the attitude of the Board was unmistakeable. The strongest language possible was used by Mr. Russell on August 11th as to the absolute impossibility of having any inquiry into this question of the demand of the medical staff. He refused the demand as strongly as possible, and mine was the only voice that demanded a full and complete inquiry, for I suppose everybody was out of town. (Cries of "We did not know of the meeting.") I daresay you did not. I am going to repeat to-day what I said then—in fact, I do not think that anybody will be able to say anything that has not already been said in the papers. But still it is necessary, after Mr. Russell's speech, to draw the attention of the meeting to the amendment that I have the honour to move. On Dec. 10th, then, and up to that day the Board were as anxious not to refer, as they are now anxious to refer to-day, the domestic management of the hospital by itself to inquiry. On Dec. 10th the Board, not spontaneously, but because their counsel showed them what a false position they had taken up, began to allow the admission of a wider inquiry. They added as a concession—and I think the staff were unwise to regard it as a concession—that the persons to make the inquiry were to be three instead of one. It secures that the umpire listens with attention to his two colleagues and that is all, and therefore I do not think much was gained by that. Those communications have been broken off and it is immaterial to us how or when they were broken off. I think if I was asked to say that either side have acted with uniform wisdom I could not. So long as there was a chance of the committee of inquiry being partial—that is to say, consisting of a man nominated by a member of the Board—so long were they willing to entertain a free inquiry; but directly that chance is over we have the motion of to-day, which Mr. Russell has told us includes an inquiry into the whole subject. Does it? Read it. It does not do anything of the kind. I do not think I need labour the point that it is necessary and essential that the staff and the Board should be in touch with each other. It is essential. We are told a great deal about hospitals which get on very well without the representation of the staff on the Board, but we have not been told of any one hospital where there is representation of the staff on the Board (and there are a great many) that produces any evil result. Why are these hospitals not quoted? The Board have had every opportunity of communicating with other hospitals, and they have not told us of one single instance of that kind. We can only judge for ourselves from our own experience, which in my case is very limited. I served for some years on an infirmary committee—my town does not boast of a hospital. There we have a rule that not only is every member of the staff a member of the committee, but there was a rule that the senior member should take care, when he could not be present himself, that one of his colleagues was present, so that we might never have a meeting without one of the staff being present. A friend of mine wrote to me yesterday and said, "If the experience of over nine years' chairmanship of a hospital committee of which the whole honorary medical staff are members *ex-officio* be of any service to your fellow governors you are at liberty to use it. In my experience their assistance is essential and I should resign the chairmanship of my committee at once if I was deprived of their assistance." I put it in this way, that we governors must either judge of this matter out of our own limited experience or else have an inquiry about it. The Board will not do it. It is nonsense to tell me that their resolution will meet the case. I propose this amendment:—

> "That a full and independent inquiry be at once instituted by the governors into the statement issued by the medical staff in May, 1900";

I do not say only it is desirable, I say it should be at once instituted. My amendment continues:—

> "the facility of intercommunication between the medical staff and the Board; including the demand of the former for direct representation on the Board";

and that surely raises all kinds of representations. I have reason to think I shall be told in a moment that my motion and amendment do not provide for any reference excepting the particular kind of representations that the medical staff have claimed. The wording is quite wide enough. The amendment goes on:—

> "the position, functions, and acts of the secretary-director";

and that is more necessary than anything else, for that position of secretary-director is unknown in the hospitals of this country. We governors do not know what it means, we only see that it is a very dangerous thing. My amendment concludes:—

> "and the constitution, rules, and management of the hospital generally."

The rules are framed with the effect that the governors are hampered on every hand from governing. We have not heard any reason why the inquiry should not comprehend everything I propose. If the state of the case be as I say the whole thing is one question, and what need is there of cutting the inquiry into two parts? It is suggested that the staff would be satisfied if they were put on the Board without any inquiry into the other things. I do not know whether they would or not. (Loud cries of "No, no.") So much the better. I know that these things would never have arisen if the staff had been represented on the Board. The Board does not understand the sort of influence that two men or even one man—members of the medical staff—would exercise on the Board. The Board themselves, being human, would be instructed by the presence of two medical men, just as the two medical men would be instructed in business matters by the Board. The Board throughout have never spoken of the influence of two members of the medical staff, but always of domination. They keep on saying that, as if the presence

of two medical men on the Board would mean the domination of the medical element over the lay element. Really the policy of fear which characterises this Board is a marvel to me. The Board is afraid of this inquiry. (Cries of "No, no.") Yes, you are. You are frightened of this inquiry. They are afraid of being dominated over by two men, but the charge is that they are dominated over by one man. Their own consciousness that they will yield to two is proof that they yield to one. Now we come to my actual proposal that there should be instituted an inquiry. The manner of the institution is left by my amendment exactly as it is by Mr. Russell's motions to be dealt with by subsequent motions to be carried out. If you carry my amendment you determine that there shall be an inquiry on as wide terms as it is possible to frame and I should wish the inquiry to be made as full and free as it can be. But my whole conception of a committee of inquiry differs from the conception of the Board. They want a sort of tribunal that will deal with the matter as if it were a lawsuit with a verdict for one side or the other. I do not. I want some people who will advise us, though the responsibility rests on the governors. The circumstance that for over 30 years we have never come forward does not in the least diminish our responsibility when such a question as this arises. We are bound to accept the responsibility in consequence of being governors. We cannot discharge that responsibility well unless we have a full and perfect inquiry and a complete report; that is why I want an inquiry so that we can see what ought to be done for the benefit of the hospital.

Sir JAMES CRICHTON BROWNE: I beg to second the amending motion, and in doing so I should say that the court of inquiry into the allegations as to the management or mismanagement of this hospital which is proposed in the motion submitted to us seems to me to have become a matter of secondary importance and a mere by-issue. For what the governors have now to decide is the fate and the very existence of this hospital which has hitherto played so great a part in beneficence and usefulness, and which, thanks to the labours of its medical staff, has attained world-wide renown. It is nonsense to talk about holy-stoning the deck when the ship is sinking, and the lame and partial inquiry which is now proposed to us ought not for one moment to divert our attention from the very vital question in connexion with this institution, and that is the representation of the medical staff upon the Board of Management. In these motions which have been circulated, and which we are now asked to adopt, it is stated that the demand of the medical staff for representation on the Board is expressly based upon certain allegations which are to be submitted to inquiry. That statement is entirely, I am afraid I must say deliberately, erroneous, for it must have been known to whoever prepared this resolution, as it is known to Mr. Russell, that the demand for representation has been persistently urged by the medical staff for 10 years before these things happened, and that the allegations were brought forward not as the foundation of that claim but as illustrations of the fruits—the inevitable fruits—of the present mode of management. The trivial and petty annoyances, the little indignities, the grave obstructions with which the members of the medical staff have, I understand, had to put up with for a long period of years, have culminated, as the staff have from the beginning foreseen that they would, in evils injuriously affecting this institution, and what we as governors have to do is to go to the root of the matter, to effect a reform which will at once put an end to those evils and to the cause and source from which they have proceeded. We must see that any inquiry instituted shall be thorough, searching, and conclusive. If we were to accept and pass this motion and authorise a preliminary inquiry we should not, when that inquiry was finished, be any further advanced than we are to-day. We should have wasted time and the funds of the hospital, and the really burning question—viz., the representation of the medical staff—would still remain to be decided. And remembering as I do that the Board of Management have said in print more than once that that representation shall have their unyielding opposition, I cannot but conclude that the inquiry that is proposed to us is somewhat evasive and illusory and is only calculated to cause delay or perhaps to get rid of the medical staff by a side issue. I have had the curiosity to examine for myself that statement of the medical staff to which reference has been made, the statement of June, 1900, and what I cannot understand is why that report was not at once submitted to the judgment of the governors to whom it was addressed. The Board of Management, without any reference to the governors to whom that report was addressed, dealt with it themselves and appointed three of their own number to inquire, not into the whole indictment brought against them, but only into two selected points in the indictment. And after that inquiry at which their accusers the medical staff were not represented and of which no minutes of evidence had been published,—after that inquiry they called the governors together by an irregularly summoned meeting in the height of the holiday season to ratify their own acquittal of themselves. We have to see that there shall be no repetition of a proceeding of that sort. If there is to be an inquiry it must be thorough and searching and complete and impartially conducted. It must deal with, not only certain allegations, but with all the allegations that have been made by the medical staff. The report or statement of the staff must be the subject matter of this inquiry whenever it is held, and all these allegations must be most diligently inquired into. I am much mistaken if the governors will consent to any limited reference, to any small inquiry. They will insist that all these allegations, including those having reference to the constitution and to the administration of the hospital, shall be inquired into. I would point out that the allegations of the staff were not, as has been suggested to-day, limited to the question of diet or nursing or the condition of the patients, but they included complaints as to the anomalous position and powers of the secretary-director, as to the abuses of the out-patient department, as to the exaction of moneys from patients attending this charity, as to deficient accommodation for the nurses, as to the gradual effacement of the medical staff so that they have been, although they are honorary officers, deprived of their vote as subscribers to the hospital, and as to the rules and various other matters. The medical staff, I am sure, do not shrink from the inquiry. They are prepared to establish every statement that they have made, but they decline to have their professional status in this hospital postponed till after a preliminary inquiry as to draw-sheets and the boiling of potatoes. They say, and I think openly and wisely, "We cannot any longer acquiesce in the present state of things in the interests of this hospital of which we are so proud. In the interests of the patients to whom it is our duty and privilege to minister, and in the interests of our high responsibility, we demand a full and searching inquiry. We desire access to the Board of Management. We have asked from you the very small representation of two out of 12, and we feel sure that if that request of two be granted all need for inquiries will disappear and all dissensions will cease. But we challenge an immediate decision. For years past we have been pressing our views upon the management. We have tried all sorts of suggestions which they have suggested and which have ended in failures, and now we challenge an immediate decision. But that is in the hands of the governors, and by their judgment fairly and honestly ascertained we shall abide. If they accept our proposals we shall zealously exert ourselves as before for the welfare of the hospital. If they reject them and determine that the affairs of the hospital are to be placed unreservedly in the hands of the secretary-director then we shall accept their verdict and retire from the field." The medical staff for some time past have made the position perfectly clear. They have uttered no threats, but they have pointed out what seems to be the inevitable consequence of the line of conduct which is pursued by the secretary-director, and in looking over the correspondence that has taken place I am impressed with the belief (I trust I am doing him no injustice) that the secretary-director has been quietly working for the resignation of the medical staff. (Cries of "No, no.") At any rate, in that tortuous, curious document, with its copious rubric, that has been circulated lately, he contemplates the resignation of the medical staff with great complacency. He says, "The hospital may encounter worse evils than the resignation of the staff." I differ from him. The resignation of your staff in this hospital must mean irretrievable ruin. Remember that you have upon your staff 18 of the most eminent physicians and surgeons in London, men whose names are known and respected wherever medical science is cultivated, whose special skill is of incalculable value to the suffering poor. These 18 physicians and surgeons are unanimous and solid upon this question. If you lose them you will not replace them. Mr. Rawlings perhaps calculates that there are in all professions blacklegs. Let me tell him that the medical profession is unanimous. Our leaders, our journals, have submitted with no uncertain voice that if your staff resign there are no medical men who will consent to the humiliation and ignominy of stepping into their vacant place—at least, no medical men whom it would be good to entrust with the life of a sick cat. I am not going to insult your intelligence by repeating to you the arguments in favour of medical representation on the hospital board. The hospital is a medical institution and every detail of management must be ordered in accordance with the medical instructions and requirements. It will be just as reasonable to deprive the Board of Admiralty of its Sea Lords and to leave the navy entirely in the hands of civilians as to leave a hospital board of management without medical aid and advice. I do not know whether Mr. Rawlings is prepared to assume the command of the *Majestic*, but—I say it with all due respect—that he is just as equal to that command as to the direction of the National Hospital for the Paralysed and Epileptic without medical assistance. Admirable in the performance of his own duties as secretary—I am quite sure that every member of the staff will bestow unstinted praise on him in that capacity—in an evil hour he climbed to the directorate, hence the confusion that has resulted. Our *Majestic* is on the shoals. Every hospital board in this country avails itself in one way or other of medical assistance. The methods by which each does so vary in different cases. Where the medical staff is paid, as in certain old London hospitals, one method is adopted; where they are honorary officers other methods are used. But in all of them medical assistance and advice are obtained in some way, save this National Hospital in Queen-square, in which it appears to be tabooed. And it is just in this National Hospital in Queen-square that medical assistance and advice are so necessary, considering the obscure nature of the diseases dealt with and the technical character of the treatment to be carried out. Mr. Rawlings has insinuated that the exclusion of the medical staff from the Board of Management in this hospital is necessary to prevent the hospital from being overawed and prostituted to experimental practices, from being converted into a scientific workshop and laboratory, and he has tried to wriggle out of that accusation, but his words admit of no other interpretation and they have been correctly understood by Mr. Stephen Coleridge. Well, gentlemen, I am not surprised at the storm of indignation with which the medical staff have received that shameful appeal to vulgar ignorance and prejudice. Every hospital, every sick room, in this country is the scene of experimental practices. The administration of every dose of medicine is an experiment, and it is fervently to be hoped that the medical staff of this hospital, as long as there is one, will continue, in accordance with one of the great objects of the charity set forth in its charter in the very first page, to investigate and study the diseases of the nervous system and to increase our knowledge of these to the inestimable benefit of mankind. But to suggest that the medical staff desire to have representation on the Board in order to convert this hospital into a scientific workshop and laboratory in which mere knowledge will be sought with a callous disregard to the sufferings and lives of the poor is what we may call "striking below the belt." Mr. Rawlings does not allege that anything of this kind has occurred. He is apprehensive that it may happen, and so medical representatives are to be excluded from the Board. I suppose it is possible that at some future time some lay officer in the business department may misappropriate the funds; therefore men of business must be excluded from the Board of Management. The reasoning is absolutely parallel. Let me say to Mr. Rawlings that his humane apprehension constitutes the very strongest reason that has yet been advanced for the immediate election of medical representatives on this Board, for it is absolutely impossible for the Board as at present constituted to judge of the appropriate mode of any treatment or procedure that may be called in question. Picture to yourselves the Board as at present constituted called upon to decide as to the propriety of a dose of methyl-ethyl-chloro-benzine, as to the warrantability of removing a tumour from the ascending parietal gyrus of the Rolandic area, as to the responsibility of the nurses for a bedsore in a case in which they have no knowledge of Charcot's researches and teaching. I could mention numerous instances like this of questions that would come before the Board. There is one case I will quote in which they have already gone astray for the want of medical assistance. Some time ago the Board decided that a small charge should be made to out-patients in this hospital for medicine when in the opinion of the officials they were able to pay it. I think that an objectionable arrangement and a misapplication of the

funds of the institution, which was not intended for patients able to pay. By adopting this system of selling medicines the hospital Board have brought the hospital within the provisions of the Pharmacy Act. A large number of medicines sold here contain arsenic, strychnine, atropine, and corrosive sublimate, and other drugs scheduled as poisons in the Pharmacy Acts, and the statutory regulation of the Act for the Sale of Poisons is that the ingredients of the medicine, together with the name of the person to whom it is sold or delivered, shall be entered in a book kept for that purpose, and the name and address of the seller shall be added to the same. Has that regulation been complied with in this hospital? I hear on most excellent authority that it has not, in which case the Board of Management have made themselves responsible for a long series of breaches of the Pharmacy Act. Could there be anything more ludicrous or conclusive as to the unsatisfactory nature of the present system than the fact that the Board of Management of this hospital has rendered itself liable to be summoned for breaches of the Pharmacy Act? I think not. I have great pleasure in seconding the motion that has been moved by Mr. Melvill Green.

A GOVERNOR: I want to ask if the circular sent out by the Board of the hospital has been sent to governors whose names appear as initials only, because it is not fair if they have not been sent?

Mr. BOWER: Some time ago the medical staff were informed that although it was impossible to give them the addresses of governors who desired to remain anonymous, yet any communication which the staff wished to address to those governors would be duly forwarded. In June, 1900, when the staff issued their statement to the governors, all the copies which were intended for governors who are represented in the list of donors by initials were forwarded by the Board to their respective destinations. Now I have been anxious to intervene in this discussion for some minutes. I have the privilege of not only being a governor of this hospital but of having acted as solicitor to the Board and assisted the Board in the conduct of this great controversy. I wish to explain in one word—and I shall testify my explanation in a manner beyond doubt before I sit down—that this first motion and the other motions to be proposed by the Board to-day are not designed to limit the inquiry, but are designed to lead to a full and absolute inquiry into all matters, including the important one of representation of the staff. In January last the Board passed resolutions providing for the most ample inquiry. These resolutions were communicated by me to the medical staff and as to the greater portion of our resolutions they were accepted by the staff. So that the position of matters was this, that we have come to an agreement with the staff as to the following points of reference that the inquiry was to include (I am now reading from a copy of the staff's resolutions): all the charges made by the staff in their statements, the question of intercommunication between the staff and the Board, the question of past administration of the hospital, the position, functions, and acts of the secretary-director, the existing rules and by-laws so far as any member of the Commission might deem necessary, the inspection of all books and documents as might be desired by any member of the Commission, and the demand of the staff for direct representation on the Board of Management. But then new difficulties arose. One was the intimation of the staff that they would resign if they did not get all that they demanded; the next was that we unfortunately differed from them as to the exact form of tribunal and the mode in which these matters should be referred and the mode which the inquiry was to be in. Now after careful consideration I advised the Board that it would not be practicable to put before a meeting of governors the motions providing in detail for everything that was to be done. We had agreed with the staff up to a certain point and these motions are moved and simply deal with the disputed point. They were designed to lead to a full and complete inquiry. I now am authorised by the mover of the Board's motion, by the seconder, and the Board to say that I have intimated to Mr. Melvill Green that the Board are prepared to accept his amendment. I have been deputed to do this because it was felt right that some explanation should be again made of the policy of the Board which was intended to be carried out by these resolutions.

The amendment was then put as a substantive motion and carried unanimously.

Mr. MELVILL GREEN: I hope the governors will remain to pass the resolutions for securing the impartiality of the inquiry. It is necessary that, the governors having determined that an inquiry shall be instituted, we shall arrive at a body of inquirers who will command the confidence of everybody. If anybody objects to anything, that will be a reason, in my mind, for adopting some other plan to which nobody could take objection. We want the inquiry to result in a report in which we shall all have confidence. It has been suggested that a committee of governors and subscribers (other than members of the Board or medical staff) be deputed to make all necessary arrangements for the constitution of a committee of inquiry. The details, as has been said by Mr. Bower, are probably too numerous to deal with here. It has been suggested that if we appoint a committee of ourselves to make such arrangements we should be taking the most practical course. That would be followed by something of this sort. The committee so appointed will be instructed to place on the committee of inquiry at least one physician or surgeon, one eminent lawyer, one man engaged in commercial or financial pursuits, one man experienced in hospital management, and one other person. That makes five of all sorts and conditions of men. That will be followed by some proposal of this sort: "To empower the committee of inquiry to conduct the inquiry as they may think fit, authorising them to request the Board and staff to employ counsel if the committee of inquiry think necessary, and to provide that all necessary and proper expenses of the inquiry be borne by the hospital funds." But I am now moving only the first of these three consequential directions.

Mr. J. PEARMAN: I was deputed to propose the second of the Board's motions upon the card to-day, but the course which has been adopted and which I am far from finding fault with will render that altogether unnecessary. I was afraid that it appeared that the mover of the amendment, Mr. Melvill Green, was extremely angry with the Board of Management, and I think unnecessarily so, if you will allow me to say so. He was not aware at the time he cast so many aspersions on the Board of Management that at their meeting which was held a few minutes before this it was almost unanimously agreed by the Board that they would accept his amendment.

Mr. MELVILL GREEN: I had no idea of it.

Mr. PEARMAN: I hope that being the case the governors and the whole of the medical staff particularly will believe that the Board of Management have no desire or intention to burke inquiry in this matter. Nothing could be further from their thoughts, and if there was one thing which was nearer their hearts than another it was that there should be a thorough inquiry into the charges made by the medical staff, which were made, I am sure, by them with a full belief on their part that they were justified in making them. At the same time I cannot help believing, having sat on the committee of inquiry which was instituted by the Board, that those charges will, on investigation, be proved upon the whole to be substantially very much exaggerated. So far from the Board having views of their own as to reducing the scope of this inquiry they are in full agreement with Mr. Melvill Green. I have much pleasure in seconding that amendment which has been proposed by Mr. Melvill Green.

Mr. J. WIGAN: I think we are all agreed that the decision of to-day's meeting is of vital importance to this hospital. I have been a governor for nearly 40 years and I am a governor of St. George's Hospital and of other hospitals, and in all these there is medical representation, and I must repeat that we have done wisely in coming to-day to the decision that we have. The only question is that the form in which this is put before the governors shall be done in such a way as to be perfectly explicit. I think with reference to a remark made by a governor just now that every A, B, or C, D, shall also have the report who is not present and every initial shall also have the same document sent to him.

The motion was then put to the meeting and carried unanimously.

Sir HENRY BURDETT: Who are to be on the committee? I propose that Mr. Jonathan Hutchinson be one of them, the Earl of Dudley another, and that Mr. Melvill Green be a third. I see a number of ladies present and the hospital owes much to ladies, so I suggest that it would be a good thing that Mrs. Pearman be another. I would suggest that finance should be represented by a wealthy man who is also a governor. I refer to one who takes an enormous interest in the hospital—Mr. H. L. Bischoffsheim. He will serve, and I have ascertained that Mr. Hutchinson will serve.

Mr. MELVILL GREEN: I was going to suggest Sir Henry Burdett himself, Mr. A. Royle, Mr. J. Wigan, and Sir James Crichton Browne.

Sir JAMES CRICHTON BROWNE and Sir HENRY BURDETT expressed themselves unable to serve.

The CHAIRMAN: I think if the names are not accepted by the meeting *en bloc* they must be put up one by one and the vote must be taken for each in turn. I am only suggesting it because it is the ordinary mode of procedure and Mr. Melvill Green in the ordinary course is the proper person to suggest the names.

Mr. MELVILL GREEN: The list proposed is: Mr. A. Royle, Mr. J. Wigan, Mr. Jonathan Hutchinson, Sir James Crichton Browne, and Mr. Melvill Green. It has been pointed out that the names I have read include those of three medical men which must be balanced probably by others. I believe Mr Wigan has not the honour of being a doctor, but the others, excepting myself are medical men. I am unable to suggest any other persons and really do not know the governors.

The choice of the committee led to a desultory conversation, the following names being finally chosen:—Mr. Jonathan Hutchison, Mr. H. L. Bischoffsheim, Mr. A. K. Hichens, Mr. Melvill Green, Sir John R. Paget, Miss Agnes Kevser, and Mr. J. Wigan.

The instruction to this committee in their choice of a committee of inquiry was finally settled as follows:—

> "To place on such committee of inquiry at least one physician or surgeon, one eminent lawyer, one man engaged in commercial or financial pursuits, one man not a medical man experienced in hospital management, and one other person, none being members of the Board or medical staff."

It was unanimously decided to leave to the discretion of the committee how far counsel should be employed in the inquiry, and it was agreed to pass no motion requiring the printing of the evidence taken.

The proceedings terminated with a vote of thanks to the Lord Chancellor for his excellent services as chairman.

BOOKS, ETC., RECEIVED.

ALLEN, GEORGE, Charing Cross-road, London.

The Literary Year-Book and Bookman's Directory, 1901. By Herbert Morrah. Price 3*s.* 6*d.* net.

BAILLIÈRE ET FILS, Rue Hautefeuille, Paris.

Les Rayons de Röntgen et le Diagnostic des Affections Thoraciques non Tuberculeuses. By A. Béclère. Price 1 franc 50 cents.

COLLINGRIDGE, W. H. AND L., Aldersgate-street, London.

The City of London Directory for 1901. Price 12*s.* 6*d.*

DAVIS COMPANY, Philadelphia.

Infant-Feeding in its Relation to Health and Disease. By Louis Fischer, M.D. Price 6*s.*

DENT AND CO., Bedford-street, Strand, London.

The Child: His Nature and Nurture. By W. B. Drummond. Price 1*s.*

HIRSCHWALD, AUGUST, Unter den Linden, Berlin.

Geschichte der Pocken und der Impfung. By Dr. P. Kübler. Price 8 marks.

Diphtherie (Begriffsbestimmung, Zustandekommen, Erkennung und Verhütung). By Professor Dr. E. V. Behring. Price 5 marks

Nichtarzneiliche Therapie Innerer Krankheiten. Skizzen für physiologisch denkende Aerzte. By Dr. Buttersack. Price 4 marks.

Leitfaden für Operationen am Gehörorgan. By Professor Dr. F. Trantmann. Price 4 marks.
Leitfaden der Kriegschirurgischen Operationen. By Dr. Hermann Fischer. Price 4 marks.
Studien zu einer Physiologie des Marsches. By Dr. Zuntz and Dr. Schumburg. Price 8 marks.

JOHNSTON, GEORGE P., Edinburgh.
The Early Days of the Royall Colledge of Phisitians, Edinburgh: the Extended Oration of the Harveian Society, Edinburgh, delivered at the 114th Festival, by the President, Robert Peel Ritchie, M.D. Edin., F.R.C.P.E., &c. Price not stated.

KARGER, S., Karlstrasse, Berlin.
Lehrbuch für Wochenbettpflegerinnen. By Dr. Paul Rissman. Price 1 mark 60 pfennig.
Atlas der Krankheiten der Nase, ihrer Nebenhöhlen und des Nasenrachenraumes. By Dr. P. H. Cerber. Price 6 marks.

KEGAN PAUL AND CO., London.
The Psychology of Reasoning, based on Experimental Researches in Hypnotism. By Alfred Binet. Translated by A. G. Whyte, B.Sc. Price 1s. 6d.

LEWIS, H. K., Gower-street, London.
William Hunter, Anatomist, Physician, Obstetrician. With Notices of his Friends, Cullen, Smellie, Fothergill, and Baillie. By R. Hingston Fox, M.D. Price 4s. 6d.

LONGMANS, GREEN, AND CO., London.
The Norwegian North Polar Expedition, 1893-96. Scientific Results. Edited by Fridtjof Nansen. Vol. ii. Price 30s. net.

MACLEHOSE AND SONS, Glasgow.
Manual of Diseases of the Ear, including those of the Nose and Throat in Relation to the Ear. By Thomas Barr, M.D. Third edition. Price 12s. 6d.

MALOINE, A., Paris.
Cours de Minéralogie Biologique. By J. Gaube. Price 4 francs.
La Tuberculose et la Médication Créosotée. By Dr. Samuel Bernheim. Price 10 francs.

METHUEN AND CO., Essex-street, London.
Practical Licensing Reform. By the Hon. Sidney Peel, Barrister-at-Law. Price 1s. 6d.

PUTNAM'S SONS, London and New York.
Text Book of Materia Medica for Nurses. Compiled by Lavinia L. Dock. Price 6s.

REBMAN, LIMITED, Shaftesbury-avenue, London.
A Handbook of Materia Medica, Pharmacy, and Therapeutics. By S. O. L. Potter, A.M., M.D. &c. Eighth edition. Price 21s.
Sexual Debility in Man. By F. R. Sturgis, M.D. Price 12s. 6d.
A Manual of Materia Medica and Pharmacology. By David M. R. Culbreth, Ph.G., M.D. Second edition. Price 20s.

SCOTT, WALTER, Paternoster-square, London.
The "Clincher" Guide of the Cycling Routes of England and Wales, with Map. Compiled by T. A. Edge. Price 1s.

SIMPKIN, MARSHALL, AND CO., London.
The Tea we Drink. A Demand for Safeguards in the Interest of the Public and Producer. By E. H. Skrine and George Brownen, F.C.S. Price 1s.

SPRINGER, JULIUS, Berlin.
Leitfaden der Therapie der Inneren Krankheiten, mit besonderer Berücksichtigung der Therapeutischen Begründung und Technik. By Dr. J. Lipowski. Price 4 marks.

UNIONE TIPOGRAFICO, Torino.
Terapia dell'Afasia e degli altri Disturbi del Linguaggio. Per H. Charlton Bastian, M.A., M.D. Lond., F.R.S. Traduzione Italiana del Prof. Umberto Gabbi. Price 6 lire.

UNWIN, T. FISHER, Paternoster-square, London.
Another Englishwoman's Love-Letters. By Barry Pain. Price 2s.

VIGOT FRÈRES, Paris.
Accouchements et Maladies des Femmes en Couches. By L. Goulard and V. Bué. Price 8 francs.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BOND, FRANCIS THOMAS, M.D. Lond., M.R.C.S., F.R.S. Edin., has been re-appointed Medical Officer of Health by the Cirencester Rural District Council.

CLOWES, ERNEST FRANCIS, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Wotton-under-Edge District of the Dursley Union, vice B Simmons, resigned.

CROOKSHANK, F. GRAHAM, M.D. Lond., has been appointed Medical Officer of Health for the Urban District of Barnes.

GARDEN, H. W., M.B., Ch.B. Aberd., has been appointed Medical Officer to the Tati Concessions, Limited, Francistown, Rhodesia, South Africa.

GRAY, J. P. W., F.R.C.S. Eng., has been re-appointed Honorary Surgeon to the Nottingham and Notts Hospital for Diseases of the Throat, Ear, and Nose.

HERRICK, R. W., M.D., B.Ch. Dub., been re-appointed Honorary Surgeon to the Nottingham and Notts Hospital for Diseases of the Throat, Ear, and Nose.

KEIR, WILLIAM INGRAM, F.R.C.S. Edin., L.R.C.P. Edin., has been re-appointed Medical Officer of Health for the Melksham (Wilts) Rural District.

MCELNEY, ELIZABETH, M.B., Ch.B Edin., has been appointed House Surgeon to the Tiverton Infirmary.

SMYTH, HENRY JAMES, L.R.C.P., M.R.C.S., has been re-appointed Medical Officer for the West Buckland District by the South Molton (Devon) Board of Guardians.

STEWART, DONALD, M.D. Glasg., L.R.C.S. Edin., has been re-appointed Honorary Consulting Surgeon to the Nottingham and Notts Hospital for Diseases of the Throat, Ear, and Nose.

THRESH, J. C., D.Sc. Lond., M.D. Vict., D.P.H. Camb., has been appointed Medical Officer for the Rural District Council's Isolation Hospital, Chelmsford.

WATERHOUSE, RUPERT, M.B. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed House Physician to the Royal United Hospital, Bath, vice F. C. Forster, resigned.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BEDFORD COUNTY HOSPITAL.—Senior House Surgeon. Salary £100 a year, with apartments, board, and washing.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—House Surgeon. Salary £60 per annum, with board and attendance.

BIRMINGHAM AND MIDLAND FREE HOSPITAL FOR SICK CHILDREN.—Resident Surgical Officer. Salary £60 per annum, with board, washing, and attendance.

BOROUGH HOSPITAL, Birkenhead.—Three Honorary Assistant Medical Officers.

BOROUGH HOSPITAL, Bootle.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.

BOROUGH OF LEICESTER.—Medical Officer of Health and Public Analyst. Salary £500 per annum.

BRADFORD POOR-LAW UNION.—Junior Resident Assistant Medical Officer for Hospital and Workhouse. Salary £100, with rations, apartments, and washing.

BRIGHTON THROAT AND EAR HOSPITAL, Queen's-road.—Non-resident House Surgeon for six months, renewable. Salary at the rate of £75 per annum.

CITY DISPENSARY, 29 and 30, College-street, Dowgate-hill, E.C.—Physician.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—Pathologist. Salary 100 guineas per annum.

DOVER HOSPITAL.—House Surgeon, unmarried. Salary £100 a year, increasing, with board, lodging, and washing.

FRENCH HOSPITAL AND DISPENSARY, 172, Shaftesbury-avenue, W.C.—Resident Medical Officer, speaking French, unmarried. Salary £80 a year, with full board.

GLAMORGAN COUNTY ASYLUM.—Junior Medical Officer, unmarried, not over thirty. Salary £150, with board, lodging, washing, and attendance.

GOVAN DISTRICT ASYLUM, Crookston, near Paisley, N.B.—Senior Assistant Medical Officer. Salary to begin at £150 a year, with rooms, board, laundry, and attendance.

HAMPSTEAD HOSPITAL.—Resident Medical Officer for six months, eligible for re-election. Salary at the rate of £120 per annum, with rooms, coals, and gas.

HULL ROYAL INFIRMARY.—Junior Assistant House Surgeon. Salary £60, with board and lodging.

HYDROPATHIC ESTABLISHMENT, Limpley Stoke, near Bath.—Resident Physician.

JESSOP HOSPITAL FOR WOMEN, Sheffield.—House Surgeon, unmarried. Salary £75 per annum, with board, lodging, and washing.

LIVERPOOL HOSPITAL FOR CONSUMPTION.—Resident Medical Officer for new Sanatorium. Salary £300 per annum, with board and apartments.

LONDON OPEN-AIR SANATORIUM, Pinewood, near Bracknell, Berkshire.—Resident Physician, unmarried. Salary £200, with furnished apartments, board, attendance, and washing.

MANCHESTER ROYAL INFIRMARY.—Resident Surgical Officer, unmarried. Salary £150 per annum, with board and residence.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Ophthalmic Surgeon.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer. Salary £60 per annum, with board, attendance, and washing. For six months, eligible for re-election as senior.

NATIONAL DENTAL HOSPITAL, Great Portland-street, W.—Anæsthetist.

NATIONAL SANATORIUM FOR CONSUMPTION AND DISEASES OF THE CHEST, Bournemouth.—Resident Medical Officer, from April 17th to June 30th. Honorarium for the term £50, with board, residence, and washing (no alcohol).

NEWCASTLE-ON-TYNE DISPENSARY.—Two Visiting Medical Assistants. Salary £160 for the first year, and £180 afterwards.

NORTH LONDON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Fitzroy-square, W.—Clinical Assistant for six months. Honorarium at the rate of £35 per annum.

ROCHESTER HOUSE, Little Ealing, W. (under the Metropolitan Asylums Board).—Visiting Medical Attendant. Salary £100 per annum.

ROTHERHAM HOSPITAL.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and washing.

ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £85, increasing by £10 a year, with board (excluding stimulants), and apartments.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—House Physician for six months. Salary at rate of £60 per annum, with furnished apartments, board, and washing.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Senior House Surgeon. Salary £75, with board and residence.

ROYAL SEA BATHING HOSPITAL, Margate.—Assistant Resident Surgeon. Salary £60 per annum, with board and residence.

SCARBOROUGH HOSPITAL.—Assistant House Surgeon for three months. Salary £75, with residence, board, and washing; if approved, to be Senior for twelve months. Salary £90, with residence, board, and washing.

SEAMEN'S HOSPITAL SOCIETY ("DREADNOUGHT"), Greenwich, S.E.—House Surgeon. Salary £50 per annum, with board, residence, and washing.

ST. BARTHOLOMEW'S HOSPITAL, Rochester.—Assistant House Surgeon. The salary is £100 per annum, payable quarterly, with board, residence, washing, firing, and light.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary at rate of £24 per annum, with board, washing, and residence.

SUFFOLK GENERAL HOSPITAL.—House Surgeon. Salary £100 a year, with board, lodging, and washing.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies as Certifying Surgeons under the Factory Acts at Wotton-under-Edge in the county of Gloucester, at Petersfield in the county of Southampton, and at Fethard in the county of Tipperary.

UNIVERSITY OF GLASGOW.—Two Examiners in Medicine.

VICTORIA HOSPITAL, Folkestone.—House Surgeon. Salary £100 per annum, with board, residence, and laundry.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon, eligible for election to the post of Senior. Salary as Junior £75 per annum, as Senior £100, with board, residence, &c.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Assistant Surgeon.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House Physician for six months. Honorarium at rate of £75 per annum, with board, lodging, and washing.

Births, Marriages, and Deaths.

BIRTHS.

AYRES.—On March 22nd, at Talbot House, Brierly Hill, Staffs, the wife of William Ayres, B.A., M.D., of a daughter.

BAXENDELL.—On March 19th, at Hale-road, Bowdon, Cheshire, the wife of Arthur Baxendell, M.R.C.S., L.S.A., of a daughter.

BALFOUR.—On March 25th, at Chard, Somerset, the wife of Tom Stevenson Balfour, M.D., of a son.

BINDLOSS.—On March 22nd, at Harrow, the wife of A. H. Bindloss, M.B., B.C. Camb., of a daughter.

PEARSON.—On March 19th, at Edgbaston, Birmingham, the wife of J. B. Pearson, M.B., C.M., late of Knottingley, of a daughter.

SCOTT.—On March 13th, at Poole-road, Bournemouth, the wife of Bernard Scott, M.R.C.S., of a son.

TRACEY.—On March 24th, at Willand, Cullompton, Devon, the wife of H. Eugene Tracey, M.B., of a daughter.

WORTHINGTON.—On March 21st, at Chesterfield, the wife of Sidney Worthington, M.D., F.R.C.S., of a son.

MARRIAGES.

LAWSON-HANNAM.—On March 20th, at St. John's Church, Buckhurst-hill, Essex, Frank Howard Lawson, M.R.C.S., L.R.C.P., of Steyning, to Katherine Mabel Edith, second daughter of the late George W. Hannam, of Ellerslie, Leytonstone.

THORNE THORNE—SINGLETON.—On March 21st, at Christ Church, Lancaster-gate, W., Leslie Thorne Thorne, M.D., of Inverness terrace, W., to Marcella Mildred, second daughter of Edward Singleton, of Teignmouth.

DEATHS.

JOHNSTON.—On March 23rd, James Crosse Johnston, Brigade-Surgeon A.M.S.

SKENE.—On the 24th inst, at Buckley, Flintshire, William Skene, M.D. Glasgow, F.F.P.S.G., L.R.C.S.E., in his 56th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

JOHANN HEINRICH COHAUSEN.

IN recent numbers of the *Archives Générales de Médecine* some 40 pages have been devoted to an account of the life and writings of Johann Heinrich Cohausen, a Westphalian medical man and miscellaneous writer who made for himself a considerable reputation in the first half of the eighteenth century. He was born in Hildesheim in 1665, and while still a young man showed himself to be a good scholar and possessed of an immense knowledge of books. When a comparatively junior member of the profession he was chosen to be physician to the prince-bishop of Munster, an appointment which he held for many years. Dr. A. Beauvois, the author of the articles in the *Archives*, has made a special study of Cohausen's career and has given the results of his researches to the world in an elaborate biography published in book form in 1900. In August of that same year the *Archives* contained a long account by Dr. Beauvois of Cohausen's treatise on Cinchona, which, he says, has been strangely overlooked by writers on the history and bibliography of that valuable remedy. Cinchona was introduced into Europe in 1640, and medical opinion was still somewhat divided as to its utility when Cohausen wrote in vindication of it a small book with the enigmatical title of "Archeus Febrium Faber et Medicus." A similar fondness for verbal puzzles, sarcastic humour, and quaint turns of fancy is apparent in the titles which he has given to others of his books—such as, for instance, the one written against snuff-taking, the title of which is "Dissertatio Satyrica de Pica Nasi." In the number of the *Archives* for February, 1901, Dr. Beauvois returned to the subject with a lengthy abstract of Cohausen's controversy with Ruysch, the Dutch anatomist, who imagined that he had discovered in the fundus uteri a muscle having the special function of expelling the placenta. Cohausen died in 1750. The list of his works which are in the library of the British Museum occupies an entire page of the catalogue. The book by which he is known to English literature is the "Hermippus Redivivus," a humorous exposition of a scheme for the prolongation of human life to the age of 115 years by inhaling the breath of young women. As one of the means to this end he advises the would-be centenarian to try the effect of becoming a teacher in a girls' school and holding the classes in small unventilated rooms. An English summary of the contents of this work, only two pages in length, appeared in 1743, subjoined to an anonymous volume, entitled, "Dr. Cheyne's Account of Himself and of His Writings," this referring to Dr. George Cheyne, who was born in Aberdeenshire in 1671, practised in London and Bath, and died in 1743. In 1744 John Campbell (born 1708, died 1775) published an English translation of the "Hermippus," which reached its second edition in 1749, and its third in 1771. Boswell says that Samuel Johnson pronounced the volume "very entertaining as an account of the hermetic philosophy and as furnishing a curious history of the extravagances of the human mind." The Rev. S. Baring Gould has devoted to the "Hermippus" one of the chapters of his "Curiosities of Olden Times," published about 1889. In 1885 a reprint of Campbell's translation was published in Edinburgh by Edmund Goldsmid, F.R.H.S.

PLACE OF RESIDENCE FOR A RETIRED SURGEON.

To the Editors of THE LANCET.

SIRS,—Can you or some of your many readers kindly tell a general practitioner who has had 30 years' full work in the eastern counties, where is the best place of residence in England when he retires from work which he intends shortly to do? He is very liable to "catching cold," and suffers slightly from rheumatism and eczema. The locality must, of course, be warm and sunny, yet bracing. His means are limited. If anyone can give him a few hints he will be thankful.

I am, Sirs, yours faithfully,

March 26th, 1901. P. P.

COMMISSIONS AND THE MEDICAL PROFESSION.

THE Preferred Accident Insurance Company of New York, which has opened a branch for the United Kingdom at 74, Cheapside, London, E.C., has sent us some papers calling attention to the business and advantages of the company. We do not venture to express any opinion on the actuarial merits and commercial methods of the Preferred Accident Insurance Company of New York, but we cannot approve the way in which it seeks to entice medical men to become partners and canvassers in its business. It does this in two ways. The company is not content with tempting medical men to insure by "barring the risks of blood-poisoning in a professional operation and without extra premium," but in the event of medical men taking out its policies it purposes to allow a commission of 15 per cent. off the first premium and 10 per cent. off subsequent ones; and for proposals which they "introduce" the company will be pleased to credit them with like commissions. This is a distinct invitation to medical practitioners to become agents in the company's business, and we have

seen in several instances of late years how objectionable such agency is. The company proposes to compile a register of medical men in the various towns and districts of the United Kingdom willing to act as its medical advisers, to examine and to report on every claim under accident and health policies, and invites all and sundry to its service at a uniform fee of half-a-guinea. This fee is not very imposing or very likely to attract many medical men to what is often a very disagreeable and difficult duty. We see great objections to the publication of such a list.

THE SORROWS OF THE PUBLIC VACCINATOR.

A CORRESPONDENT thus describes an experience:—

P.V. (persuasively): Well, Mrs. Jones, am I to vaccinate the baby?

Mrs. J. (indignantly): Oh, but I'm clear on the books, and they take all responsibility (produces her card of subscription to the Anti-Vaccination League).

THE INDISCRIMINATE USE OF ARSENIC FOR AGRICULTURAL PURPOSES.

REFERRING to the report of THE LANCET Analytical Commission on the Scope of Arsenical Contamination Traceable to Impure Sulphuric Acid which appeared in THE LANCET of Jan. 5th, 1901, p. 54, a correspondent (evidently an agriculturist) points out *apropos* arsenic in soils that it is the practice with many farmers to sow white arsenic as a protection from slugs, wire-worms, and birds. The allowance is one pound (7000 grains) per acre. This statement would appear to be quite opposed to the view generally held that plants, especially in the state of germination, are just as sensitive to arsenic as are man and other animals. Our correspondent states that he has seen the men in charge of the drill in a fearful state of inflammation after work from the dry powder dusting their skins. Frequently the emptied packets may be seen blowing from the field on to the highway, some containing a tablespoonful of arsenic, and often whole coveys of partridges are killed. Our correspondent very rightly says that this most dangerous practice ought to be stopped and, further, that there is no necessity for it. We think that this matter might well be brought before the attention of the Royal Commission on Arsenical Poisoning, for, according to our informant, a few inquiries amongst our farm-labourers would lead to some astonishing revelations.

"MÜNCHENER LÖWENBRAU LAGER BEER."

WE regret that owing to an error in calculation, the alcoholic strength of this beer was wrongly represented in our "Analytical Records," published in THE LANCET of March 16th, p. 794. The figures relating to alcohol were based on the specific gravity of the distilled beer being 992, whereas the result obtained was 993. The latter figure gives the following as the alcoholic strength of the beer: alcohol, by weight 3·94 per cent., by volume 4·93 per cent., equal to proof spirit 8·64 per cent. These figures more than ever justify our concluding remark that "the commendable point about Munich beer is that while it is highly nutritious, exceeding in most instances the value in this respect of English beers, it contains a minimum of alcohol."

A QUESTION OF FEES.

To the Editors of THE LANCET.

SIRS,—I was recently attending a patient for an abortion which, she states, was produced by a shock due to a collision whilst riding on a tram-car. I received a letter the other day from the surgeon to the tram-car company stating that he would call at 3.30 the next day to examine the case. I waited on the next day and we saw the case together. On leaving the house he said: "I suppose you will want a fee for this?" I replied, "Certainly, a guinea." "Oh," he said, "the company are not obliged to pay you anything unless they like, but send me in a bill for 10s. 6d. and I will advise the company to pay you." Will you kindly inform me whether I am entitled to a fee and, if so, whether a fee of £1 1s. is a proper fee to charge?

I am, Sirs, yours faithfully,

March 20th, 1901. SPERO.

*** The surgeon to the tramcar company was wrong to this extent, he ignored accepted custom and displayed small *esprit de corps*. When mutual examinations of this sort are arranged by solicitors the injured person's solicitor always arranges for the payment of the medical attendant's fee. Medical men when written to for an appointment should stipulate for the payment of the consultation fee; and it is usually understood that if the patient is examined at the medical attendant's house the fee will be £1 1s., and if at the patient's house, thus entailing a visit, £2 2s. The medical examiner cannot make a proper report without having a history of the case from the medical attendant of the injured person. The alternative would be perhaps to remove dressings or otherwise to interfere with another medical man's treatment, things which are unprofessional and which cannot be done without the patient's consent. The one-guinea and two-guinea fees are not only those usually paid but are moderate. Each consultation may entail letters or visits to arrange the meeting with the patient. The keeping of a fixed appointment is often a difficult matter to a busy medical man. At the interview full description of the case has to be given.—ED. L.

CYCLE PARCEL CARRIERS.

WE have received from the City Manufacturing Co., of 17, Manchester-avenue, Aldersgate-street, E.C., two neat carriers for attaching to the bicycle head which present some decided advantages. The first consists of a net attached to a stout metal hoop provided with a clamp which may be tightened by a screw and nut and fixed upon the pillar of the machine, just beneath the handle-bar. It may be easily attached and its position is not in the least disturbed by vibration when it is properly fixed. The second carrier consists of a framework of light polished metal provided beneath with a Y-shaped strong steel spring clamp. The clamp is forced on to the pillar head where the handle bar forms a T. The inner surfaces of the clamp are fluted so that they may adapt themselves to the pillar-tube easily. Leather straps are fastened to the frame or staging so that small books and parcels or a box of surgical instruments may be safely carried by this means. Nothing is more annoying to cyclists carrying impedimenta than to find during riding that the parcel carriers have become insecure or worse that parcels have been lost through this insecurity. These carriers may be relied on.

"THE PROGRESSIVE MEDICAL ALLIANCE."

To the Editors of THE LANCET.

SIRS,—I note in THE LANCET of March 23rd, p. 907, a letter headed "The Progressive Medical Alliance" in which the writer states: "It is at least a wonder that associations like the Medical Defence Union ..... allow such grave abuses to remain without apparently any efforts to move them." Will you allow me to point out that I brought the circulars of the "Alliance" before the notice of the General Medical Council in October last and that I received a statement from the registrar in December to the effect that the General Medical Council regretted that at the present time no legal action could be taken against the persons concerned. If your correspondent would forward the circular he has received to the President of the General Medical Council it would have the effect probably of stimulating the action that should be taken.

I am, Sirs, yours faithfully,

A. G. BATEMAN.

Medical Defence Union, Trafalgar-square, W.C., March 23rd, 1901.

BRUNTON'S AURISCOPE.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of March 23rd, p. 871, we notice under the heading of "New Inventions" that you make reference to a "Brunton's Auriscope," to which an electric lamp has been adjusted. As regards any novelty in the idea we made a similar apparatus some years ago at the suggestion of Mr. George P. Field, and it is illustrated in our catalogue of 1890, Fig. 4728.—We are, Sirs, yours faithfully,

JOHN WEISS AND SON, LD.

Oxford-street, W., March 23rd, 1901. (H. C. BEDELL.)

Picric.—1. Any vesicles which may be present are punctured. Then a piece of gauze is dipped into a solution of picric acid (the solution may be saturated) and the gauze is squeezed to get rid of superfluous solution and is laid over the part. A little wool may be placed over this and then the dressing is lightly bandaged on. When suppuration is present the dressing will need daily renewal, but if there is no suppuration the dressing need not be changed for four or five days or even more. 2. This question is a little obscure. A Pott's fracture should never need extension and it is very rarely needed in fracture of the lower ends of both bones. If it is desired to apply traction in such a case a stirrup with strapping passing up on each side of the limb to the level of the fracture will be best. 3. A plaster-of-Paris splint may be strengthened at the hip by means of thin strips of metal with their edges turned up like this, ⊔, which are put between the layers of the flannel or other material. A useful size for these strips is as follows: length 9 to 12 inches and width one inch, before the edges are turned. The flat surface should, of course, be turned towards the patient. Strips of wood may also be used.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received:—*Liverpool Courier, Warrington Observer Hereford Journal, Wilts Standard, Stirling Observer, Hampstead Express, Sussex Daily News, Eastern Morning News (Hull), Hampshire Advertiser, Blackburn Telegraph, Ilkeston Pioneer, Nelson Chronicle, Norwich Press, York Herald, Walthamstow Express, Western Mai (Cardiff), Malvern News, Manchester Guardian, Scotsman, West Bromwich News, Rugby Advertiser, Hamilton Advertiser, Taunton Express Weymouth Times, Stalybridge Standard, Oxford Times, The South Africa Daily Telegraph, Sanitary Record, Kentish Mercury, Reading Mercury, Mining Journal, Hertfordshire Mercury, Dorset County Chronicle, City Press, Le Courrier de la Presse (Paris), Local Government Chronicle, Surrey Advertiser, Halifax Guardian, Local Government Journal, Ipswich Journal, Ormskirk Advertiser, Fife Journal, Jersey Express, Eckington Express, Boston Independent, Weekly Free Press and Aberdeen Herald, Devon Evening Express, Evening News (Portsmouth), Daily Express (London), Ramsgate Gazette, South Wales News, &c., &c.*

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Mar. 28th, 1901.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Mar. 22	30·25	ENE	...	77	45	32	34	38	Overcast
,, 23	30·47	N.E.	...	56	43	37	38	40	Overcast
,, 24	30·39	N.E.	...	58	43	36	38	41	Overcast
,, 25	29·85	N.	0·01	51	39	35	36	37	Snowing
,, 26	29·99	NNW	0·02	81	41	28	Fzn.	32	Cloudy
,, 27	29·73	NNW	0·03	84	42	29	Fzn.	33	Cloudy
,, 28	29·69	N.	...	71	38	28	Fzn.	33	Snowing

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

WEDNESDAY (3rd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (4th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

FRIDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

SATURDAY (6th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (1st).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-quare, W.).—9 P.M. Dr. J. Mitchell Bruce: Diseases and Disorders of the Heart and Arteries in Middle and Advanced Life. Lecture III.—Prognosis. Treatment. (Lettsomian Lectures.)

TUESDAY (2nd).—PATHOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Prof. Starling: The Pathology of Dropsy. Dr. Lazarus-Barlow and Dr. Ewart have promised to take part in the discussion.

WEDNESDAY (3rd).—OBSTETRICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M. Specimens will be shown by the President (Dr. Horrocks), Dr. C. Lockyer, Dr. H. R. Spencer, and others. Paper:—Dr. E. W. Hey Groves: The Pathology and Treatment of Puerperal Eclampsia with especial reference to the Use of Saline Transfusion, with notes of two cases.

THURSDAY (4th).—NORTH-EAST LONDON CLINICAL SOCIETY (Tottenham Hospital).—4 P.M. Clinical Cases and Specimens.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (1st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. M. Morris: Consultation. (Skin.)

TUESDAY (2nd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. G. Rankin: Consultation. (Medical.)

WEDNESDAY (3rd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Cantlie: Consultation. (Surgical.)

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Habershon: Cases of Mitral Stenosis.

NORTHERN AND MIDLAND DIVISION OF THE MEDICO-PSYCHOLOGICAL ASSOCIATION (Leicester and Rutland Asylum, Leicester).—4.30 P.M. Mr. R. Stewart: (1) Two Cases of Insanity following Chorea; (2) A Case of Rodent Ulcer treated by X-rays. Discussion on the Improvement of our Methods of Obtaining Information on Matters of Asylum Administration and the Advantages of Establishing a Bureau in connexion therewith (opened by Dr. A. Miller, Hatton Asylum). 7.30 P.M. Dinner at the Grand Hotel, Leicester.

THURSDAY (4th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Consultation. (Surgical.)

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

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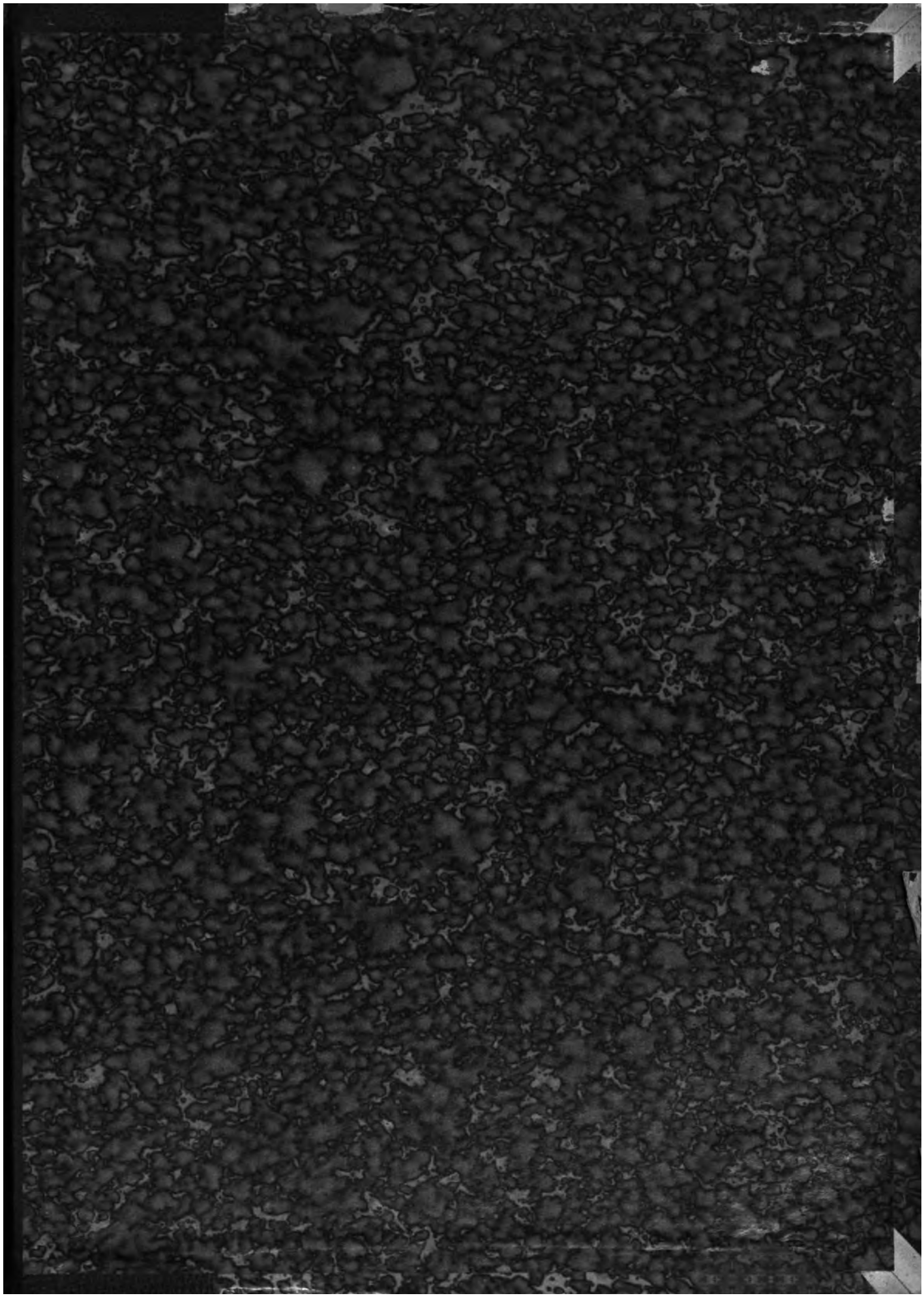

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